CAVEAT: UK
DESCRIPTOR: UK

[redacted]

H.M.S CONQUEROR GREEN PASSPORT

Safety Categorisation	N/A

Approval:

Status / Reason for Issue	Electronic Signature	Position	Date
Approved for Internal Issue	Signed on Original		
Approved for Project Issue	Signed on Original		

NOTE: ***Document approval is via electronic signature – the complete approval record is held electronically within CDMS.***

This document has been released as background information to support the Submarine Dismantling Consultation (28 Oct 2011 – 17 Feb 2012). It has been redacted in order to protect:

- **personal information; and**
- **information that could compromise UK Defence or National Security.**

For further information about the Submarine Dismantling Project, please visit: www.mod.uk/submarinedismantling
For information about Freedom of Information requests, please visit: www.mod.uk/defenceinternet/freedomofinformation

000	0000	000018857	GEN	1	1.1

CAVEAT: UK
DESCRIPTOR: UK

This page is intentionally blank

REVISION HISTORY

Issue	Date	Status	Comment

AMENDMENTS

To assist in identifying the amendments in each revised issue of this document, a vertical line is displayed in the right hand margin opposite new or revised text. Vertical lines marking previous amendments are deleted at each revised issue of the document.

Contents List

Section *Page*

14. APPENDIX 10 –H.M.S CONQUEROR STABILITY STATEMENT – NOT INCLUDED FOR RELEASE (RESTRICTED DOCUMENT)ERROR! BOOKMARK NOT DEFINED.

I. REFERENCES

A. Marine Environment Protection Committee - MEPC 58/3/2 dated 2 July 2008 – Revised *IMO Guidelines on Ship Recycling*

B. Joint Services Publication 418 – MoD Environmental Manual

C. Basel Convention – PCB, PCT, & PBB Technical Guidelines.

D. ECC Council Regulation No. 259/93

F. MoD Radioactive Survey Report: SRSS/GRO/0306 dated 30 March 2006.

G. Lucion Environmental Asbestos Report 21054747 (DRDL CDMS No.18622)

H. Lucion Environmental PCB Report 21054747 (DRDL CDMS No. 18626)

I. Lucion Environmental Non Sampled Hazards Report 2105474 (DRDL CDMS No. 18624)

J. Structural Survey of Submarines (DRDL FP03(E)-C-5201)

K. HMS Conqueror GP Drawing Pack (DRDL CDMS No. 800015457)

II. SUMMARY

ITEM	REMARKS
Overall	Conqueror's standard material structure includes, but is by no means exhaustive, steel out and inner hulls with vast use of Cork and MMMF insulating linings. Internal decks and deck heads are predominantly steel. Partition walls within the accommodation compartments are Formica lined steel plates. Floorings have a range of coverings from ceramic tiles, vinyl tiles, composite screedings, levelling compounds and paint. Varying types of electrical cabling on board of varying lengths, dependant upon primary use. Ages vary depending on refit replacement, with the majority being painted for aesthetic and functional purposes. Steel structured tanks have been drained with minor residual fluids/residues found in certain areas Predominant pipe lagging and insulation is modern blown foam and additional black rubber linings. Most lagging is encased within a non asbestos woven wrapping and encapsulated with paint. Asbestos gaskets are present in nearly all compartments and all flanges/joints. If not asbestos, the gaskets are a modern rubber (frequently used on cold water pipes) Within the machinery spaces and generator compartments, the majority of insulation material is a modern calcium silicate of varying conditions and grades dependant on time of installation. A large quantity of wall mounted electrical junction boxes, fuse boxes and control units contain asbestos containing spacers and flash guards.

[redacted]

	Plastics are in minor quantities, usually found within housing to electrical units or casings for electrical consoles and indicator panels. Plastics have been used in minor quantities for structural purposes. Beryllium Copper and Phosphor Bronze identified in the tubing to the majority of pressure gauges and indicator dials. Consult drawing pack 800015457 for hazard locations.
Asbestos	Asbestos has been found throughout the vessel in various materials. Items identified as containing asbestos are listed below: Floor coverings (screedings and levelling compounds) Gaskets to flanges and joints in all pipe runs. Further gasket materials to oven door linings Spacers and flash guards in most electrical boxes (junctions, fuses, control units etc) Putties within wall linings Putties and adhesives to wall plates Cable penetrations to deck heads, decks and walls. Insulating woven linings to pipe work insulations. This is in turn has therefore contaminated the under lying non asbestos calcium silicate lagging. Woven asbestos products used as vibration absorption to metal brackets supporting cables and pipe feeds. *see appendix 2 for item specifics, photographic records and specific locations*

Paint	Generally, most coatings are in fair condition considering their age and continue to offer a reasonable level of preservation. Most internal 'dry compartments' are coated with **White Epoxy Paint**, formerly Intergard EGA 792 / EGA 793 and still available as International Paint Intergard 849 Part A & Part B. This is applied over the cork insulation covering the inside of the Pressure Hull. Behind the cork insulation, the internal of the Pressure Hull is coated with **Sigma Coatings Solvent Free Epoxy to Def Stan 80-179**. This coating has also been applied in way of fitted furniture in Mess Decks, e.g. beneath bunks. Most compartments contain items of furniture, lockers etc. as well as electrical equipment in the form of boxes, cabinets and consoles of varying shape and size. These are coated with **Trimite Stoving Enamel to Def Stan 80-125**, applied to the item when supplied new and which sometimes included **Zinc Chromate** primer. During refit, some of these items were cosmetically overcoated with an air-drying single-pack version, i.e. **Trimite Q50**. Most Ballast, Trim and Compensating Tanks are coated with **Leighs Resistex L126 / L128**, a pitch-based material which is now obsolete. The Machinery Space Bilges are coated with **International Paint Tanclene to Def Stan 80-97**, a material which was withdrawn many years ago. **Zinc Chromate** was applied as the internal primer on all RN vessels up to the mid to late 1970's and this would include this vessel. **Zinc Chromate** or **Zinc Phosphate** is also likely to be behind the linings in the Cold and Cool Compartments. When these vessels underwent major refit, most compartments were stripped of all equipment,

	furniture, fixtures and fittings, so most areas were accessible with regards to fully removing and renewing the coatings. But it is possible that there may still be **Zinc Chromate** in areas which have remained inaccessible since build. Other materials present include **General Service Gloss to Def Stan 80-54**, e.g. Signal Red, Brunswick Green and Salmon Pink and there are some minor areas of **Hammerite** present in certain compartments.
PCB	Representative sampling has been carried out across the vessel to insure all types of cable have been sampled. Types of cable sampled (diameters approximate) 110V supply 115V supply 440V supply Multi core 500mm Ø Triple core 430mm Ø Degaussing cable Internal wiring to electrical units Plant/machinery power supplies Overhead supply lines Power distribution cables *see appendix 3 for item specifics, photographic evidence and specific locations*
Electronics	Minor use of plastics for structural integrity and component housings . Large quantities of asbestos containing composite acting as flash guards/fire protection. Present in junctions boxes, fuse units, control panels, switch boards and console units. *see appendix 4 for item specifics, photographic evidence and specific locations*

[redacted]

Gases	Gas free certificates supplied to the overall vessel. Residual gas presumed in small quantities to pipelines and hoses, especially in known areas of previous gas tank storage (EG: Hydrogen tanks to corridor outside the Motor Room) R12 refrigerant gas has been identified within the refrigeration systems and associated components. CFC-11 is strongly presumed to be contained within all blown pink foam lagging. *See appendix 4 for full list for presumptions and item specific photographs and locations*
Ammunition	No ammunition was found.
Radiation	Reactor systems intact.
Fuels and Oils	Prior to survey commencing, all tanks and fuel/oil storages have been emptied. Residual oils presumed in distribution pipes and hoses and residual fluid remnants in tank areas. Surface oils have been identified in numerous locations, predominantly under machinery, motors and tank drainage valves. Residual oils and grease have been observed to moving parts of plant/machinery *See appendix 4 for item specific photographs and locations*

1. PART 1: HAZARDOUS MARTERIAL CONTAINED IN THE SHIPS STRUCTURE AND EQUIPMENT

1.1 Paints and Coating Systems containing materials listed in Table A and Table B of Appendix 1 of the Guidelines.

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
1.	Zinc Phosphate L489	Cold & Cool Room 3 Deck	70	Protective primer on structure behind linings.	The area is 100% stainless steel lined. It is possible that the underlying substrate is coated with zinc chromate primer. Data sheet located in Appendix 9
2.	Zinc Chromate	Control Room 1 Deck	Less than 0.1	Primer coating on bulkhead adjacent to main control console.	Trace amount evident on bulkhead where an item of equipment has been removed
3.	Zinc Chromate	SR's Bunk Space 2 Deck	Less than 0.1	Primer coating on deckhead above fwd stbd bunk.	Withdrawn from service by Institute of Naval Medicine
4.	Trimite	Wardroom 1 Deck	0.25	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
5.	Trimite	Sonar Room 1 Deck	65	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
6.	Trimite	Officers Bathroom 1 Deck	0.25	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
7.	Trimite	Passageway 1 Deck	10	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
8.	Trimite	Control Room 1 Deck	60	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
9.	Trimite	Upper Torpedo Compartment 1-2 Deck	7	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
10.	Trimite	Lower Torpedo Compartment 2-3 Deck	6	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
11.	Trimite	Passageway 2 Deck	14	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
12.	Trimite	Ships Office 2 Deck	6	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
13.	Trimite	SR's Mess 2 Deck	5	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
14.	Trimite	Galley 2 Deck	1	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
15.	Trimite	Garbage Ejector Compt. 2 Deck	0.75	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
16.	Trimite	A/C Compt. 2 Deck	7	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
17.	Trimite	Electrolyser Space 3 Deck	10	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
18.	Trimite	Sonar Cab Space 3 Deck	75	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
19.	Trimite	HP Lab 3 Deck	0.25	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
20.	Trimite	Laundry 3 Deck	3	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
21.	Trimite	Sins Compt. 3 Deck	48	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
22.	Trimite	Lobby 3 Deck	27	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
23.	Trimite	Radar Office 3 Deck	7	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
24.	Trimite	WT Office 3 Deck	14	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
25.	Trimite	AMP Space 3 Deck	18	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
26.	Trimite	Lobby 55-59 frms 3 Deck	24	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
27.	Trimite	CO2 Scrubber Space 3 Deck	5	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
28.	Trimite	Fwd AMS 4 Deck	15	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
29.	Trimite	Manoeuvring Room Flat	135	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
30.	Trimite	HP Store	2	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
31.	Trimite	EMR	14	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
32.	Trimite	No 1 Spare Gear & Naval Stores	4	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
33.	Trimite	No 2 Spare Gear & Naval Stores	4	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
34.	Trimite	Walkway Frms 88-101	6	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
35.	Trimite	DG Flat	70	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
36.	Trimite	Turbo Generator Flat	22	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
37.	Trimite	MMS	30	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
38.	Trimite	Motor Room	55	Protective coatings for electrical boxes, sets etc.	Data sheet located in Appendix 6 & 7
39.	Tanclene	Lower Torpedo Compartment 2-3 Deck	38	Protective coatings for bilge areas fwd.	Withdrawn from service by Institute of Naval Medicine
40.	Tanclene	Fwd AMS 4 Deck	132	Protective coatings for bilge areas.	Withdrawn from service by Institute of Naval Medicine

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
41.	Tanclene	Turbo Generator Flat	280	Protective coatings for bilge areas, external tanks, pipes and bilge fittings.	Withdrawn from service by Institute of Naval Medicine
42.	Tanclene	MMS	345	Protective coatings for bilge areas, external tanks, pipes and bilge fittings.	Withdrawn from service by Institute of Naval Medicine
43.	Tanclene	Motor Room	108	Protective coatings for bilge areas, external tanks, pipes and bilge fittings.	Withdrawn from service by Institute of Naval Medicine
44.	Tanclene	Precip Drain Tank	9	Protective coatings	Withdrawn from service by Institute of Naval Medicine
45.	Tanclene	Diesel Oil Fuel Tank	175	Protective coatings	Withdrawn from service by Institute of Naval Medicine
46.	Tanclene	Clean Drains Tank	8	Protective coatings	Withdrawn from service by Institute of Naval Medicine

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
47.	Tanclene	Dirty Bilge Tank	9	Protective coatings	Withdrawn from service by Institute of Naval Medicine
48.	Solvent Free Epoxy (white)	SR's Mess 2 Deck	38	Protective coatings for the deckhead.	
49.	Solvent Free Epoxy	2 Berth Cabin frames 39-42 1 Deck	2.5	Protection for deck areas under bunks.	
50.	Solvent Free Epoxy	8 Berth Cabin frames 39-42 1 Deck	8	Protection for deck areas under bunks.	
51.	Solvent Free Epoxy	2 Berth Cabin frames 42-45 1 Deck	2.5	Protection for deck areas under bunks.	
52.	Solvent Free Epoxy	CO's Cabin 1 Deck	2.5	Protection for deck areas under bunks.	

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
53.	Solvent Free Epoxy	Wardroom 1 Deck	3	Protection for deck areas under seating areas.	
54.	Solvent Free Epoxy	Passageway 1 Deck	0.5	Protection of exposed PH substrate around a de-lagged casting	
55.	Solvent Free Epoxy	SR's Bunk Space 2 Deck	22	Protection for deck areas under bunks.	
56.	Solvent Free Epoxy	JR's Bunk Space 2 Deck	32	Protection for deck areas under bunks.	
57.	Solvent Free Epoxy	Manoeuvring Room Flat	2	Protective coating for a bare area of pressure hull.	
58.	Sigma Pitakote High Build Epoxy (yellow)	MMS	110	Protective coatings on machinery rafts.	

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
59.	Mineral Oil	Reserve Hydraulic Oil Tank	25	Protective coatings	Tank originally coated with Mineral Oil which has since dried out, leaving only trace amounts
60.	Mineral Oil	MEA Drain Tank		Protective coatings	Tank originally coated with Mineral Oil which has since dried out, leaving only trace amounts.
61.	Mineral Oil	Hydraulic Replenishment Tank		Protective coatings	Tank originally coated with Mineral Oil which has since dried out, leaving only trace amounts.
62.	Mineral Oil	All Lub oil Tanks	10 per tank	Protective coatings	
63.	Matt Black	Control Room 1 Deck	10	Protective coatings for main control console & sets etc.	

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
64.	Leighs Resistex L126/L128	Water Round Torpedo Tank	38	Protective coatings	Withdrawn from service by Institute of Naval Medicine Known Carcinogenic
65.	Leighs Resistex L126/L128	Torpedo Operating Tank	162	Protective coatings	Withdrawn from service by Institute of Naval Medicine Known Carcinogenic
66.	Leighs Resistex L126/L128	Fwd Trim Tank	178	Protective coatings	Withdrawn from service by Institute of Naval Medicine Known Carcinogenic
67.	Leighs Resistex L126/L128	No 1 Slop Drain Tank	34	Protective coatings	Withdrawn from service by Institute of Naval Medicine Known Carcinogenic

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
68.	Leighs Resistex L126/L128	Sewage Tank	33	Protective coatings	Withdrawn from service by Institute of Naval Medicine Known Carcinogenic
69.	Leighs Resistex L126/L128	Air Boost Tank	10	Protective coatings	Withdrawn from service by Institute of Naval Medicine Known Carcinogenic
70.	Leighs Resistex L126/L128	M Comps Port	264	Protective coatings	Withdrawn from service by Institute of Naval Medicine Known Carcinogenic
71.	Leighs Resistex L126/L128	M Comps Stbd	307	Protective coatings	Withdrawn from service by Institute of Naval Medicine Known Carcinogenic

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
72.	Leighs Resistex L126/L128	SW Flush Tank	34	Protective coatings	Withdrawn from service by Institute of Naval Medicine Known Carcinogenic
73.	Leighs Resistex L126/L128	O Comp Tank Port	198	Protective coatings	Withdrawn from service by Institute of Naval Medicine Known Carcinogenic
74.	Leighs Resistex L126/L128	O Comp Tank Port	198	Protective coatings	Withdrawn from service by Institute of Naval Medicine Known Carcinogenic
75.	Leighs Resistex L126/L128	Made Water Tanks	38	Protective coatings	Withdrawn from service by Institute of Naval Medicine Known Carcinogenic

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
76.	Leighs Resistex L126/L128	Aft Trim Tank	73	Protective coatings	Withdrawn from service by Institute of Naval Medicine Known Carcinogenic
77.	Leighs Resistex L126/L128	Air Reservoir	16	Protective coatings	Withdrawn from service by Institute of Naval Medicine Known Carcinogenic
78.	International Epoxy Enamel - White	No 2 Dry Provisions Store 1 Deck	81	Protection for bulkheads, PH lagging, deck, pipes & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
79.	International Epoxy Enamel - White	2 Berth Cabin frames 39-42 1 Deck	25	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
80.	International Epoxy Enamel - White	8 Berth Cabin frames 39-42 1 Deck	95	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
81.	International Epoxy Enamel - White	2 Berth Cabin frames 42-45 1 Deck	25	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
82.	International Epoxy Enamel - White	CO's Cabin 1 Deck	30	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
83.	International Epoxy Enamel - White	Wardroom 1 Deck	80	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
84.	International Epoxy Enamel - White	Wardroom Pantry 1 Deck	7	Protection for PH lagging, structure (inc food-lift) & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
85.	International Epoxy Enamel - White	Sonar Room 1 Deck	134	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
86.	International Epoxy Enamel - White	Officers Bathroom 1 Deck	26	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
87.	International Epoxy Enamel - White	Pipe & Cable Space 1 Deck	75	Protection for PH lagging, structure, pipes & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
88.	International Epoxy Enamel - White	Passageway 1 Deck	34	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
89.	International Epoxy Enamel - White	Control Room 1 Deck	422	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
90.	International Epoxy Enamel - White	Fan Space 1 Deck	33	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
91.	International Epoxy Enamel - White	Upper Torpedo Compartment 1-2 Deck	251	Protection for PH lagging, deck areas, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
92.	International Epoxy Enamel - White	Lower Torpedo Compartment 2-3 Deck	276	Protection for PH lagging, deck areas, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
93.	International Epoxy Enamel - White	2nd Coxswains Store 2 Deck	9.5	Protection for PH lagging, deck, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
94.	International Epoxy Enamel - White	CO2 Generator Compt 2 Deck	9	Protection for structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
95.	International Epoxy Enamel - White	Passageway 2 Deck	15	Protection for structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
96.	International Epoxy Enamel - White	Ships Office 2 Deck	45	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
97.	International Epoxy Enamel - White	SR's Bunk Space 2 Deck	95	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
98.	International Epoxy Enamel - White	SR's Mess 2 Deck	42	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm..
99.	International Epoxy Enamel - White	JR's Bunk Space 2 Deck	75	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
100.	International Epoxy Enamel - White	JR's Mess 2 Deck	35	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
101.	International Epoxy Enamel - White	Galley 2 Deck	41	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
102.	International Epoxy Enamel - White	Garbage Ejector Compt. 2 Deck	37	Protection for structure, ejector tube & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
103.	International Epoxy Enamel - White	A/C Compt. 2 Deck	38	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
104.	International Epoxy Enamel - White	Electrolyser Space 3 Deck	88	Protection for PH lagging, deck areas, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
105.	International Epoxy Enamel - White	Sonar Cab Space 3 Deck	120	Protection for PH lagging, deck areas, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
106.	International Epoxy Enamel - White	JR's Bathroom 3 Deck	35	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
107.	International Epoxy Enamel - White	Laundry 3 Deck	30	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
108.	International Epoxy Enamel - White	SR's Bathroom 3 Deck	40	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
109.	International Epoxy Enamel - White	Sins Compt. 3 Deck	58	Protection for deck areas, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
110.	International Epoxy Enamel - White	Lobby 3 Deck	26	Protection for structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
111.	International Epoxy Enamel - White	Refrigeration Mach. Space 3 Deck	45	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
112.	International Epoxy Enamel - White	No1 Dry Provisions Store 3 Deck	110	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
113.	International Epoxy Enamel - White	Radar Office 3 Deck	62	Protection for PH lagging, deck areas, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
114.	International Epoxy Enamel - White	WT Office 3 Deck	58	Protection for PH lagging, deck areas, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
115.	International Epoxy Enamel - White	AMP Space 3 Deck	38	Protection for PH lagging, deck areas, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
116.	International Epoxy Enamel - White	LP Blow Compt. 3 Deck	10	Protection for deck areas, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
117.	International Epoxy Enamel - White	Lobby 55-59 frms 3 Deck	42	Protection for structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
118.	International Epoxy Enamel - White	CO2 Scrubber Space 3 Deck	53	Protection for PH lagging, deck areas, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
119.	International Epoxy Enamel - White	Fwd AMS 4 Deck	169	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
120.	International Epoxy Enamel - White	O2 Candle Drain Space 4 Deck	59	Protection for PH, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
121.	International Epoxy Enamel - White	Manoeuvring Room Flat	321	Protection for PH lagging, deck areas, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
122.	International Epoxy Enamel - White	HP Store	40	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
123.	International Epoxy Enamel - White	EMR	62	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
124.	International Epoxy Enamel - White	No 1 Spare Gear & Naval Stores	110	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
125.	International Epoxy Enamel - White	No 2 Spare Gear & Naval Stores	130	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
126.	International Epoxy Enamel - White	Walkway	70	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
127.	International Epoxy Enamel - White	DG Flat	309	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
128.	International Epoxy Enamel - White	Turbo Generator Flat	638	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
129.	International Epoxy Enamel - White	MMS	750	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
130.	International Epoxy Enamel - White	Motor Room	390	Protection for PH lagging, structure & general fittings.	All PH structure behind the white-painted Cork insulation is coated with Solvent Free Epoxy to an approximate dry film thickness of 200 µm.
131.	Heat Resistant Aluminium	Turbo Generator Flat	22	Protective coatings for main machinery etc.	
132.	Heat Resistant Aluminium	MMS	48	Protective coatings for main machinery etc.	

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
133.	Heat Resistant Aluminium	Nos 1 & 2 Reserve Feed Tanks	78	Protective coatings	
134.	Heat Resistant Aluminium	Main Feed Tanks	18	Protective coatings	
135.	Heat Resistant Aluminium	Oily Bilge Tank	9	Protective coatings	
136.	Heat Resistant Aluminium	Nos 3 & 4 Reserve Feed Tanks	43	Protective coatings	
137.	Hammerite	Lower Torpedo Compartment 2-3 Deck	6	Protective coatings on areas & fittings around 6 in No. rear Torpedo doors & misc fittings on aft bkhd.	Withdrawn from service by Institute of Naval Medicine
138.	Hammerite	Electrolyser Space 3 Deck	0.25	Protective coatings on 1 in No. electrical box.	Withdrawn from service by Institute of Naval Medicine

[redacted]

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
139.	Hammerite	Motor Room	0.25	Protective coatings on fitting adjacent to WT door.	Withdrawn from service by Institute of Naval Medicine
140.	Glass Flake Epoxy	Precip Drain Tank	3	Protective coatings	Pressure Hull only.
141.	General Service Gloss (red)	Upper Torpedo Compartment 1-2 Deck	12	Protective & identification coatings for Firemain pipework.	Data sheet located in Appendix 5
142.	General Service Gloss (red)	Lower Torpedo Compartment 2-3 Deck	12	Protective & identification coatings for Firemain pipework.	Data sheet located in Appendix 5
143.	General Service Gloss (red)	Fwd AMS 4 Deck	6	Protective & identification coatings for Firemain pipework.	Data sheet located in Appendix 5
144.	General Service Gloss (red)	No 1 Spare Gear & Naval Stores	2	Protective & identification coatings for Firemain pipework.	Data sheet located in Appendix 5

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
145.	General Service Gloss (red)	No 2 Spare Gear & Naval Stores	2	Protective & identification coatings for Firemain pipework.	Data sheet located in Appendix 5
146.	General Service Gloss (red)	DG Flat	4	Protective & identification coatings for Firemain pipework.	Data sheet located in Appendix 5
147.	General Service Gloss (red)	Turbo Generator Flat	6	Protective & identification coatings for Firemain pipework.	Data sheet located in Appendix 5
148.	General Service Gloss (red)	MMS	12	Protective & identification coatings for Firemain pipework.	Data sheet located in Appendix 5
149.	General Service Gloss (red)	Motor Room	3	Protective & identification coatings for Firemain pipework.	Data sheet located in Appendix 5
150.	General Service Gloss (grey)	DG Flat	12	Protective coatings for lathe plinth and misc. machinery parts etc.	Data sheet located in Appendix 5

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
151.	General Service Gloss (grey)	Turbo Generator Flat	10	Protective coatings for misc. machinery parts etc.	Data sheet located in Appendix 5
152.	General Service Gloss (black)	Officers Bathroom 1 Deck	1	Cosmetic coating on ceramic deck coving tiles.	Data sheet located in Appendix 5
153.	General Service Gloss (black)	JR's Bathroom 3 Deck	1.5	Cosmetic coating on ceramic deck coving tiles.	Data sheet located in Appendix 5
154.	General Service Gloss (black)	Laundry 3 Deck	1	Cosmetic coating on ceramic deck coving tiles.	Data sheet located in Appendix 5
155.	General Service Gloss (black)	SR's Bathroom 3 Deck	1.5	Cosmetic coating on ceramic deck coving tiles.	Data sheet located in Appendix 5
156.	DG 5955	Fire-fighting Tank	34	Protective coatings	

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
157.	Deck green/red.	No 1 Spare Gear & Naval Stores	15	Protective coatings for deck.	
158.	Deck green/red	No 2 Spare Gear & Naval Stores	22	Protective coatings for deck.	
159.	Deck green/red	DG Flat	40	Protective coatings for deck.	
160.	Deck Green	Upper Torpedo Compartment 1-2 Deck	30	Protection for chequered deck plates between torpedo stowage racks.	
161.	Deck Green	Fwd AMS 4 Deck	6	Protection for tank top areas.	
162.	Deck Green	Manoeuvring Room Flat	2	Protective coatings on escape hatches.	

[redacted]

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
163.	Coal Tar Epoxy	JR's Mess 2 Deck	11	Protection for deck areas under seating area.	Withdrawn from service by Institute of Naval Medicine Known Carcinogen
164.	Chlorinated Rubber (black)	Refrigeration Mach. Space 3 Deck	2	Protection for seating and chequered deck plate.	
165.	Chlorinated Rubber	Battery Compt. 4 Deck	176	General protective coatings for structure.	
166.	Bowracoat	No 1 Fresh Water Tank	46	Protective coatings	Withdrawn from service by Institute of Naval Medicine
167.	Bowracoat	No 2 Fresh Water Tank	41	Protective coatings	Withdrawn from service by Institute of Naval Medicine

No.	Name of Paint or *Materials Classification in Appendix 1*	Location	Appx. Quantity (m2)	Function of Paint	Remarks/Reference
168.	Admar or Coal Tar Epoxy	SR's Mess 2 Deck	12	Protection for deck areas under seating area.	Withdrawn from service by Institute of Naval Medicine Known Carcinogen
169.	1023 Aluminium	CO2 Generator Compt 2 Deck	2	Protective coatings on drip trays below CO2's.	

1.2 Equipment and Machinery containing materials listed in Table A and Table B of Appendix 1 of the Guidelines.

No.	*Name of equipment & Machinery*	*Location*	*Materials (Classification in Appendix 1)*	*Appx. Quantity*	*Hazardous Material Position in Machinery or Equipment*	*Remarks/Reference*
1	Flanges to pipe work	Throughout vessel	Asbestos A-1	200+	Gaskets to pipe work joints and flanges	See Asbestos Appendix 2 for specific details
2	Pipe work	1/006 Woven linings to Port side and Starboard pipe work	Asbestos A-1	4 m2 total	Outer covering to pipe work	See Asbestos Appendix 2 for specific details Weight unknown
3	Pipe work	1/008 Control Room	Asbestos A-1	1 linear meters +	Lagging to pipe work in ceiling void above computer suite	See Asbestos Appendix 2 for specific details Not quantifiable as pipe continues into ceiling void
4	Pipe work	1/008 Control Room	Asbestos A-1	50 Linear meters	Woven lining to pipe work behind water tanks	See Asbestos Appendix 2 for specific details
5	Pipe work	1/010 Manoeuvring room	Asbestos A-1	Not quantifiable as its in a dust/debris form	Covering to 2 inch pipe run stbd side behind machinery	See Asbestos Appendix 2 for specific details

No.	*Name of equipment & Machinery*	*Location*	*Materials (Classification in Appendix 1)*	*Appx. Quantity*	*Hazardous Material Position in Machinery or Equipment*	*Remarks/Reference*
6	Pipe work	2/011 DG room	Asbestos A-1	3 linear meters visible	Wrapping to white coloured 0.5inch pipe run behind diesel generator no.2 (frame 83)	See Asbestos Appendix 2for specific details
7	Pipe work	2/011 DG room	Asbestos A-1	3 linear meters visible	Wrapping to brown coloured 0.5inch pipe run behind diesel generator no.2 (frame 83)	See Asbestos Appendix 2 for specific details
8	Pipe work	2/012 MMS	Asbestos A-1	4 Linear meters	Wrapping to 1 inch pipe run - port side frames 98-101	See Asbestos Appendix 2 for specific details
9	Duct systems and vents	1/006 Sonar Cab Space	Asbestos A-1	4 m2	Thermal Insulation	See Asbestos Appendix for specific details Damaged and in poor condition, visible debris present
10	Pipe work brackets	Through vessel	Asbestos A-1	100+	Woven asbestos cloth under metal brackets acting as a vibration damper	See Asbestos Appendix 2 for specific details

No.	*Name of equipment & Machinery*	*Location*	*Materials (Classification in Appendix 1)*	*Appx. Quantity*	*Hazardous Material Position in Machinery or Equipment*	*Remarks/Reference*
11	Periscope mountings	1/008 Control Room	Asbestos A-1	2.5 linear meters	Putty sealants to metal structure and housing	See Asbestos Appendix 2 for specific details
12	Electrical boxes and housing	Throughout vessel	Asbestos A-1	200+	Asbestos containing composite materials acting as flash guards within electrical consoles	See Asbestos Appendix 2 for specific details
13	Electrical cables	2/001 Upper Torpedo Comparment	Asbestos A-1	Small wiring covers within unit	Covering to cables within vent duct heaters (two heaters)	See Asbestos Appendix for specific details
14	Main Generators	3/018 TG room	Asbestos A-1	Covering entire generator	Insulation to main generators - 2no.	See Asbestos Appendix 2 for specific details
15	Power cables	3/001 Lower Torpedo Room	Polychlorinated Biphenyls A-2	100+ meters	Overhead power feed cables	See PCB Appendix 3 for specific PCB Congener
16	Power cables	2/011 DG Room	Polychlorinated Biphenyls A-2	100+ meters	AFT Deckhead triple core 440v power cable	See PCB Appendix 3 for specific PCB Congener

No.	*Name of equipment & Machinery*	*Location*	*Materials (Classification in Appendix 1)*	*Appx. Quantity*	*Hazardous Material Position in Machinery or Equipment*	*Remarks/Reference*
17	Power cables	2/011 DG Room	Polychlorinated Biphenyls A-2	100+ meters	AFT Deckhead triple core 440v power cable (painted)	See PCB Appendix 3 for specific PCB Congener
18	Power cables	2/011 DG Room	Polychlorinated Biphenyls A-2	100+ meters	AFT Deckhead triple core 440v power cable (painted)	See PCB Appendix 3 for specific PCB Congener
19	Power cables	2/011 DG Room	Polychlorinated Biphenyls A-2	100+ meters	AFT Deckhead triple core 440v power cable (painted)	See PCB Appendix 3 for specific PCB Congener
20	Thermometers	3/011 Lobby (outside refrigeration space)	Mercury Table B B-4	Small quantity	Liquid mercury within thermometers	See Non Sampled Hazards Appendix 4
21	Thermometers	LP Blower Room	Mercury Table B B-4	Small quantity	Liquid mercury within thermometers	See Non Sampled Hazards Appendix
22	Pressure Gauges	LP Blower Room	Beryllium Copper	Several units	Beryllium Copper held within indicator gauges	See Non Sampled Hazards Appendix

No.	*Name of equipment & Machinery*	*Location*	*Materials (Classification in Appendix 1)*	*Appx. Quantity*	*Hazardous Material Position in Machinery or Equipment*	*Remarks/Reference*
23	'To' and 'From' Gauges	LP Blower Room	Mono-ethanolamine	2+ Units	Held within indicator gauges	See Non Sampled Hazards Appendix
24	Pressure gauges	1/008 Control Room	Beryllium Copper	Several units	Beryllium Copper held within indicator gauges	See Non Sampled Hazards Appendix
25	Pressure gauges	1/010 Manoeuvring Room, indicator panel	Beryllium Copper, Phosphor Bronze	10+ Units	Beryllium Copper and Phosphor Bronze held within indicator gauges	See Non Sampled Hazards Appendix
26	Pressure gauges	1/010 Manoeuvring Room, to tank above DG access ladder	Beryllium Copper, Phosphor Bronze	2 Units	Beryllium Copper and Phosphor Bronze held within indicator gauges	See Non Sampled Hazards Appendix
27	Pressure gauges	1/010 Manoeuvring Room, port side radiation controlled area	Beryllium Copper, Phosphor Bronze	2 Units	Beryllium Copper and Phosphor Bronze held within indicator gauges	See Non Sampled Hazards Appendix

No.	*Name of equipment & Machinery*	*Location*	*Materials (Classification in Appendix 1)*	*Appx. Quantity*	*Hazardous Material Position in Machinery or Equipment*	*Remarks/Reference*
28	Pressure gauges to Pyro Locker	1/016 Motor Room	Beryllium Copper, Phosphor Bronze	4+ Units	Beryllium Copper and Phosphor Bronze held within indicator gauges	See Non Sampled Hazards Appendix
29	Pressure gauges	3/003 Sonar Cab Space	Beryllium Copper, Phosphor Bronze	4+ Units	Beryllium Copper and Phosphor Bronze held within indicator gauges	See Non Sampled Hazards Appendix
30	Pressure gauges	3/017 Turbine Generator Room	Beryllium Copper, Phosphor Bronze	6+ Units	Beryllium Copper and Phosphor Bronze held within indicator gauges	See Non Sampled Hazards Appendix
31	Hydrazine store tank	2/011 Diesel Generator Room	Hydrazine (radioactive)	Residual	Hydrazine compound fluid within storage tank	See Non Sampled Hazards Appendix Left over active service, presumed emptied
32	Pressure gauges to Diesel Generator pressure indicator panel	2/011 Diesel Generator Room	Beryllium Copper, Phosphor Bronze	6+ Units	Beryllium Copper and Phosphor Bronze held within indicator gauges	See Non Sampled Hazards Appendix
33	Pressure gauges to Hydraulic control units	2/011 Diesel Generator Room	Beryllium Copper, Phosphor Bronze	2+ Units	Beryllium Copper and Phosphor Bronze held within indicator gauges	See Non Sampled Hazards Appendix

No.	*Name of equipment & Machinery*	*Location*	*Materials (Classification in Appendix 1)*	*Appx. Quantity*	*Hazardous Material Position in Machinery or Equipment*	*Remarks/Reference*
34	Pressure gauges to main indicator panel, Port and Starboard side indicator panel and fuel injectors	2/012 Main Machinery Space	Beryllium Copper, Phosphor Bronze	Several Units	Beryllium Copper and Phosphor Bronze held within indicator gauges	See Non Sampled Hazards Appendix
35	CFC gas (hydrofluorocarbons) within Freon Condenser	4/011 Main Machinery Space	CFC gases A-2	Unknown	Hydro fluorocarbons within condenser	See Non Sampled Hazards Appendix Left over from active service, presumed drained
36	Pressure gauges to main indicator panel	3/002 Electrolyser Room	Beryllium Copper, Phosphor Bronze	Several Units	Beryllium Copper and Phosphor Bronze held within indicator gauges	See Non Sampled Hazards Appendix
37	Pressure gauges to main indicator panel	4/002 Slop Tank Room	Beryllium Copper, Phosphor Bronze	Several Units	Beryllium Copper and Phosphor Bronze held within indicator gauges	See Non Sampled Hazards Appendix
38	Gauges and components to electrical switch gear	Throughout vessel	Cadmium	Small quantities expected within material structure	Cadmium to sensor equipment and electronic equipment	See Non Sampled Hazards Appendix

1.3 Structure and Hull containing materials listed in Table A and Table B of Appendix 1 of the Guidelines.

No.	*Name of equipment & Machinery(Classification in Appendix 1)*	*Location*	*Appx. Quantity*	*Remarks/Reference*
1	PVC coated Lead Ballast B-3	Lower Torpedo Compartment Frame 15 - 17	13.8 Tonnes	As confirmed by the Stability statement. (13th August 1992) Appendix 10
2	Zinc Anodes	Water Round Tank Port	4 in No.	No Access to tank. Zincs were visible from manhole opening and quantities were confirmed by drawing 001155020
3	Zinc Anodes	Water Round Tank Starboard	4 in No.	No Access to tank. Zincs were visible from manhole opening and quantities were confirmed by drawing 001155020
4	Zinc Anodes	Torpedo Overflow Tank Port	21 in No.	No Access to tank. Zincs were visible from manhole opening and quantities were confirmed by drawing 001155020
5	Zinc Anodes	Torpedo Overflow Tank Starboard	14 in No.	No Access to tank. Zincs were visible from manhole opening and quantities were confirmed by drawing 001155020

No.	*Name of equipment & Machinery(Classification in Appendix 1)*	*Location*	*Appx. Quantity*	*Remarks/Reference*
6	Zinc Anodes	Forward Trim Tank Port	10 in No.	No Access to tank. Zincs were visible from manhole opening and quantities were confirmed by drawing 001155020
7	Zinc Anodes	Forward Trim Tank Starboard	10 in No.	No Access to tank. Zincs were visible from manhole opening and quantities were confirmed by drawing 001155020
8	PVC coated Lead Ballast B-3	Oxygen Candle Store Frame 35 - 38	10.17 Tonnes	As confirmed by the Stability statement. (13th August 1992) Appendix 10
9	PVC coated Lead Ballast B-3	Battery Tank Frame 38 - 46	171.2 Tonnes	As confirmed by the Stability statement. (13th August 1992) Appendix 10
10	Zinc Anodes	No. 1 Slop Drain Tank	2 in No.	No Access to tank. Zincs were visible from manhole opening and quantities were confirmed by drawing 001155020
11	Zinc Anodes	Sewage Tank	2 in No.	No Access to tank. Zincs were visible from manhole opening and quantities were confirmed by drawing 001155020

No.	*Name of equipment & Machinery(Classification in Appendix 1)*	*Location*	*Appx. Quantity*	*Remarks/Reference*
12	Zinc Anodes	No. 2 Slop Drain Tank	2 in No.	No Access to tank. Zincs were visible from manhole opening and quantities were confirmed by drawing 001155020
13	Zinc Anodes	'M' Compensating Tank Port	12 in No.	No Access to tank. Zincs were visible from manhole opening and quantities were confirmed by drawing 001155020
14	Zinc Anodes	'M' Compensating Tank Starboard	12 in No.	No Access to tank. Zincs were visible from manhole opening and quantities were confirmed by drawing 001155020
15	Lead Shielding (Canning Plates) B-3	CO_2 Scrubber Space Frame 61	Approx 8 m²	
16	Lead Shielding (Canning Plates) B-3	Low Pressure Blow Compartment Frame 61	Approx 5 m²	
17	Lead Shielding (Canning Plates) B-3	Amp Space Frame 61	Approx 8 m²	

No.	*Name of equipment & Machinery(Classification in Appendix 1)*	*Location*	*Appx. Quantity*	*Remarks/Reference*
18	Lead Shielding (Canning Plates) B-3	Control Room Frame 63	Approx 15 m²	
19	Lead Shielding (Canning Plates) B-3	Port Diesel Oil Fuel Tank After Bulkhead	Approx 30 m²	No Access to tank. Quantities estimated
20	Lead Shielding (Canning Plates) B-3	Starboard Diesel Oil Fuel Tank After Bulkhead	Approx 30 m²	No Access to tank. Quantities estimated
21	Zinc Anodes	Emergency Cooling Tank	13 in No.	No Access to tank. Zincs quantities were confirm by drawing 001155020
22	PVC coated Lead Ballast B-3	Reactor Compartment Frame 63 - 72	46.1 Tonnes	As confirmed by the Stability statement. (13th August 1992) Appendix 10
23	Lead Shielding (Canning Plates) B-3	Reactor Compartment	Approx 80 m²	

[redacted]

No.	*Name of equipment & Machinery(Classification in Appendix 1)*	*Location*	*Appx. Quantity*	*Remarks/Reference*
24	Lead Shielding (Canning Plates) B-3	Health Physics Store Forward Frame 72	Approx 10 m²	No Access Allowed into the Compartment
25	Radioactive Materials within Compartment B-8	Health Physics Store	Unknown	No Access Allowed into the Compartment
26	Lead Shielding (Canning Plates) B-3	Manoeuvring Room Frame 72	Approx 10 m²	
27	Lead Shielding (Canning Plates) B-3	Diesel Generator Room Frame 72	Approx 20 m²	
28	Lead Shielding (Canning Plates) B-3	Turbo Generator Room Frame 72	Approx 80 m²	
29	Lead Shielding (Canning Plates) B-3	'O' Compensating Port Frame 72	Approx 8 m²	No Access to tank. Quantities estimated

[redacted]

No.	*Name of equipment & Machinery(Classification in Appendix 1)*	*Location*	*Appx. Quantity*	*Remarks/Reference*
30	Lead Shielding (Canning Plates) B-3	'O' Compensating Starboard Frame 72	Approx 8 m²	No Access to tank. Quantities estimated
31	Zinc Anodes	'O' Compensating Port	6 in No.	No Access to tank. Zincs were visible from manhole opening and quantities were confirmed by drawing 001155020
32	Zinc Anodes	'O' Compensating Starboard	5 in No.	No Access to tank. Zincs were visible from manhole opening and quantities were confirmed by drawing 001155020
33	PVC coated Lead Ballast B-3	Motor Room Frame 108 - 112	13.9 Tonnes	As confirmed by the Stability statement. (13th August 1992) Appendix 10
34	Zinc Anodes	Brine Tank	3 in No.	No Access to tank. Zincs were visible from manhole opening and quantities were confirmed by drawing 001155020
35	Zinc Anodes	After Trim Tank Port	12 in No.	No Access to tank. Zincs were visible from manhole opening and quantities were confirmed by drawing 001155020

No.	*Name of equipment & Machinery(Classification in Appendix 1)*	*Location*	*Appx. Quantity*	*Remarks/Reference*
36	Zinc Anodes	After Trim Tank Stbd	12 in No.	No Access to tank. Zincs were visible from manhole opening and quantities were confirmed by drawing 001155020
37	Deck area A-1	1/013 walkway Screed to underside of metal floor plates	10 m2	
38	Decks and ceilings above A-1	Various locations through out vessel Insulation to floor penetration	Small quantity for each penetration	See asbestos appendix for specific locations
39	Walls and floorings A-1	3/011 cold & cool compartments Putty sealant to metal wall panels & penetrations	Extensive	

2. PART 2: OPERATIONALLY GENERATED WASTES

- **2A Dry Tanks**

No.	*Name of Item (Classification in Appendix 1) And Detail, if any, of the Item*	*Location*	*Appx. Quantity)*	*Remarks/Reference*
1	Stainless Steel Tank	Forward Emergency Fresh Water	Nominal	Limited Viewing
2	Dry Tank Residues C-52	Water Round Tank Port	Assumed to be Less than 1.5 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
3	Dry Tank Residues C-52	Water Round Tank Starboard	Assumed to be Less than 1.5 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
4	Dry Tank Residues C-52	Torpedo Operating Tank Port	Assumed to be Less than 2 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
5	Dry Tank Residues C-52	Torpedo Operating Tank Starboard	Assumed to be Less than 2 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming

No.	*Name of Item (Classification in Appendix 1) And Detail, if any, of the Item*	*Location*	*Appx. Quantity)*	*Remarks/Reference*
6	Dry Tank Residues C-52	Forward Trim Tank Port	Assumed to be Less than 2 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
7	Dry Tank Residues C-52	Forward Trim Tank Starboard	Assumed to be Less than 2 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
8	Dry Tank Residues C-52	No. 1 Fresh Water	Assumed to be Less than 1.5 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
9	Dry Tank Residues C-52	No. 2 Fresh Water	Assumed to be Less than 1.5 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
10	Dry Tank Residues C-52	Hydraulic Replenishment Tank	Nominal	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
11	Dry Tank Residues C-52	Hot Water Tank	Nominal	Tank closed at time of survey. Tank is assumed to have been drained however residuals are expected to remain

No.	*Name of Item (Classification in Appendix 1) And Detail, if any, of the Item*	*Location*	*Appx. Quantity)*	*Remarks/Reference*
12	Dry Tank Residues C-52	Air Boost Tank	Nominal	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
13	Dry Tank Residues C-52	M Comp Port	Assumed to be Less than 2 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
14	Dry Tank Residues C-52	M Comp Starboard	Assumed to be Less than 2 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
15	Dry Tank Residues C-52	S W Flush Tank	Assumed to be Less than 2 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
16	Dry Tank Residues C-52	Foam Fire Fighting Tank	Assumed to be Less than 1 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
17	Dry Tank Residues C-52	Water Sep Tank	Nominal	Tank closed at time of survey. Tank is assumed to have been drained however residuals are expected to remain

No.	*Name of Item (Classification in Appendix 1) And Detail, if any, of the Item*	*Location*	*Appx. Quantity)*	*Remarks/Reference*
18	Dry Tank Residues C-52	O Comp Port	Assumed to be Less than 2 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
19	Dry Tank Residues C-52	O Comp Starboard	Assumed to be Less than 2 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
20	Dry Tank Residues C-52	Main & Vital Hydraulic Boost Tank	Nominal	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
21	Dry Tank Residues C-52	No. 2 Reserve Feed Tank	Assumed to be Less than 1 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
22	Dry Tank Residues C-52	Port Main Feed Tank	Assumed to be Less than 1 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
23	Dry Tank Residues C-52	Port Made Water Tank	Assumed to be Less than 1 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming

No.	*Name of Item (Classification in Appendix 1) And Detail, if any, of the Item*	*Location*	*Appx. Quantity)*	*Remarks/Reference*
24	Dry Tank Residues C-52	Starboard Made Water Tank	Assumed to be Less than 1 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
25	Dry Tank Residues C-52	Starboard Main Feed	Assumed to be Less than 1 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
26	Dry Tank Residues C-52	No. 1 Reserve Feed Tank	Assumed to be Less than 1 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
27	Dry Tank Residues C-52	Air Reservoir	Nominal	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
28	Dry Tank Residues C-52	No. 4 Reserve Feed Tank	Assumed to be Less than 1 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
29	Dry Tank Residues C-52	No. 3 Reserve Feed Tank	Assumed to be Less than 1 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming

No.	*Name of Item (Classification in Appendix 1) And Detail, if any, of the Item*	*Location*	*Appx. Quantity)*	*Remarks/Reference*
30	Dry Tank Residues C-52	After Trim Tank Port	Assumed to be Less than 2 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
31	Dry Tank Residues C-52	After Trim Tank Starboard	Assumed to be Less than 2 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming

- **2B NON – OILY WASTE**

No.	*Name of Item (Classification in Appendix 1) And Detail, if any, of the Item*	*Location*	*Appx. Quantity*	*Remarks/Reference*
1	Non Oily Liquid Cargo Residues C-36	MEA Drain Tank	Less than 0.5 Litres	Left from active service: Area needs to be cleaned out and ragged dry
2	Non Oily Liquid Cargo Residues C-36	Amine Make Up Tank	Less than 2 Litres	Left from active service: Area needs to be cleaned out and ragged dry
3	Non Oily Liquid Cargo Residues C-36	No. 1 Amine Tank	Residual	No access into tank, survey conducted from the manhole coaming
4	Non Oily Liquid Cargo Residues C-36	No. 2 Amine Tank	Residual	No access into tank, survey conducted from the manhole coaming
5	Non Oily Liquid Cargo Residues C-36	No. 3 Amine Tank	Residual	No access into tank, survey conducted from the manhole coaming

No.	*Name of Item (Classification in Appendix 1) And Detail, if any, of the Item*	*Location*	*Appx. Quantity*	*Remarks/Reference*
6	Non Oily Liquid Cargo Residues C-36	No. 4 Amine Tank	Residual	No access into tank, survey conducted from the manhole coaming
7	Non Oily Liquid Cargo Residues C-36	No. 1 Slop Drain Tank	Assumed to be Less than 1.5 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
8	Non Oily Liquid Cargo Residues C-36	No. 2 Slop Drain	Assumed to be Less than 1.5 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
9	Raw Sewage C-34	Sewage Tank Forward	Assumed to be Less than 2 KG	Tank is dry however dry residue remains. No access into tank, survey conducted from the manhole coaming
10	Non Oily Liquid Cargo Residues C-36	Precip Drain Tank	Residual	No access into tank, survey conducted from the manhole coaming
11	Non Oily Liquid Cargo Residues C-36	Brine Tank	Less than 0.5 Litres	Left from active service: Area needs to be cleaned out and ragged dry

[redacted]

No.	*Name of Item (Classification in Appendix 1) And Detail, if any, of the Item*	*Location*	*Appx. Quantity*	*Remarks/Reference*
12	Detergent C-49	3/006 Laundry Room	>1kg	Left over from active service
13	Surface fluids to port side and starboard side motors	2/013 Motor Room	5 litres estimate	Left over from active service

- **2C OILY WASTE**

No.	*Name of Item (Classification in Appendix 1) And Detail, if any, of the Item*	*Location*	*Appx. Quantity (tonnes or litres)*	*Remarks/Reference*
1	Oily Liquid Cargo Tank Residues C-32	Diesel Oil Fuel Expansion Tank	Residual	Left from active service: Area needs to be cleaned out and ragged dry- Restricted access
2	Oily Liquid Cargo Tank Residues C-32	Reserve Hydraulic Oil Tank	Residual	Left from active service: Area needs to be cleaned out and ragged dry- Restricted access
3	Bilge Oil C-31	Motor Room Deck area around removed shaft	Approx 0.5 – 1 Litres	Left from active service: Area needs to be cleaned out and ragged dry
4	Bilge Oil C-31	Diesel Generator Room deck area around base plates of the 3 in No Hydraulic pumps	Approx 0.5 Litres	Left from active service: Area needs to be cleaned out and ragged dry
5	Bilge Oil C-31	Turbo Generator Room Bilge Area below trim pump	Approx 1 Litres	Left from active service: Area needs to be cleaned out and ragged dry- Restricted access

No.	*Name of Item (Classification in Appendix 1) And Detail, if any, of the Item*	*Location*	*Appx. Quantity (tonnes or litres)*	*Remarks/Reference*
6	Sludge Oil C-30	MMS - Bilge area throughout	Approx 1 - 2 Litres	Left from active service: Area needs to be cleaned out and ragged dry- Restricted access
7	Oily Liquid Cargo Tank Residues C-32	Lub Oil Tank	Less than 0.5 Litres	Left from active service: Area needs to be cleaned out and ragged dry- Restricted access
8	Oily Liquid Cargo Tank Residues C-32	Port Reserve Lub Oil Tank	Residual	Left from active service: Area needs to be cleaned out and ragged dry- Restricted access
9	Oily Liquid Cargo Tank Residues C-32	Starboard Reserve Lub Oil Tank	Residual	Left from active service: Area needs to be cleaned out and ragged dry- Restricted access
10	Oily Liquid Cargo Tank Residues C-32	Main Lub Oil Drain Tank	Residual	Left from active service: Area needs to be cleaned out and ragged dry- Restricted access
11	Oily Liquid Cargo Tank Residues C-32	Diesel Lub Oil Storage Tank	Residual	Left from active service: Area needs to be cleaned out and ragged dry- Restricted access

[redacted]

No.	*Name of Item (Classification in Appendix 1) And Detail, if any, of the Item*	*Location*	*Appx. Quantity (tonnes or litres)*	*Remarks/Reference*
12	Oily Liquid Cargo Tank Residues C-32	Dirty Bilge Tank	Residual	Left from active service: Area needs to be cleaned out and ragged dry- Restricted access
13	Oily Liquid Cargo Tank Residues C-32	Clean Bilge Tank	Residual	Left from active service: Area needs to be cleaned out and ragged dry- Restricted access
14	Oily Liquid Cargo Tank Residues C-32	Cleans Drain Tank	Residual	Left from active service: Area needs to be cleaned out and ragged dry- Restricted access
15	Oily Liquid Cargo Tank Residues C-32	Shaft Lub Oil Tank	Residual	Left from active service: Area needs to be cleaned out and ragged dry- Restricted access
16	Lubrication oils to racking systems. Item C-3	2/001 Upper Torpedo Room	Residual	Left over from active service
17	Surface oil to floor. Item C-4	2/001 Upper Torpedo Room, adjacent to hydraulic cylinder	Residual	Left over from active service

[redacted]

No.	*Name of Item (Classification in Appendix 1) And Detail, if any, of the Item*	*Location*	*Appx. Quantity (tonnes or litres)*	*Remarks/Reference*
18	Lubrication oil to winch systems and associated machinery. Item C-3	2/001 Upper Torpedo Room	Residual	Left over from active service
19	Grease to entrance hatch C-3, C-4	2/001 Upper Torpedo Room	Residual	Left over from active service
20	Lubrication oils to racking systems. Item C-3	3/001 Lower Torpedo Room	Residual	Left over from active service
21	Lubrication greases to torpedo tube hatches C-3, C-4	3/001 Lower Torpedo Room	Residual	Left over from active service
22	Lubrication oil to Torpedo Exhaust Valves C-3, C-4	2/002 Ships Office	Residual	Left over from active service
23	Lubrication oil to Torpedo Exhaust Valves C-3, C-4	2/003 Oxygen Generator Room	Residual	Left over from active service

No.	*Name of Item (Classification in Appendix 1) And Detail, if any, of the Item*	*Location*	*Appx. Quantity (tonnes or litres)*	*Remarks/Reference*
24	Lubrication oil to Oxygen Generators C-3, C-4	2/003 Oxygen Generator Room	Residual	Left over from active service
25	Lubrication oil to GASH Ejector C-3, C-4	2/005 Galley	Residual	Left over from active service
26	Lubrication oil to rotary systems C-3, C-4	3/012 Lobby	Residual	Left over from active service
27	Surface oils C-3, C-4	1/008 Control room. Port side deck behind wall panels	Residual	Left over from active service
28	Surface oils C-3, C-4	1/008 Control room, overhead moving plant	Residual	Left over from active service
29	Oils and lubs to hoses and valves C-3, C-4	1/008 Control Room	Residual	Left over from active service

No.	*Name of Item (Classification in Appendix 1) And Detail, if any, of the Item*	*Location*	*Appx. Quantity (tonnes or litres)*	*Remarks/Reference*
30	Water associated within Septic Tank C-34	1/008 Control Room	Residual	Left over from active service, presumed drained and presumed untreated.
31	Lubrication grease to machinery parts and surfaces C-3, C-4	1/016 Motor Room	Residual	Left over from active service
32	Surface oils C-3, C-4 below prop shaft motor	1/016 Motor Room	1 litre estimate	Left over from active service
33	Surface fluids to bilge wells, presumed C-4, C-3	3/017 Turbine Generator Room	50 litres estimate	Left over from active service. Spill is 3inches deep at base of bilge
34	Surface fluid oil under Diesel Generators C-3, C-4	2/011 Diesel Generator Room	10+ Litres estimate	Left over from active service
35	Surface grease to moving parts of plant C-3, C-4	2/011 Diesel Generator Room	Residual per area	Left over from active service

No.	*Name of Item (Classification in Appendix 1) And Detail, if any, of the Item*	*Location*	*Appx. Quantity (tonnes or litres)*	*Remarks/Reference*
36	Surface hydraulic fluid under hydraulic tank 2 C-4	2/011 Diesel Generator Room	3 litres estimate	Left over from active surface, potential leak from hydraulic tank 2
37	Surface oils under hydraulic control unit C-3, C-4	2/011 Diesel Generator Room	3 litres estimate	Left over from active service

3. PART 3: STORES – GASES AND LIQUIDS

3.1 Stores - Gases & Bulk Liquids

No.	Name of Item or Liquid (Classification in Appendix 1)	Location	Number of Units	Appx. Total Quantity (litres)	Remarks/Reference
1	H.P Air Cylinder No Serial Number C-21	Lower Torpedo Compartment Frame 21 - 32 Starboard Side	1 in No.	Approx 1500	Cylinders are assumed empty, however allow for cylinders to be partially charged
2	H.P Air Cylinder No Serial Number C-21	Lower Torpedo Compartment Frame 21 - 32 Port Side	1 in No.	Approx 1500	Cylinders are assumed empty, however allow for cylinders to be partially charged
3	Cylinder with unknown contents. No serial Number	Lower Torpedo Compartment Frame 33 Starboard Side	1 in No.	Approx 7	Cylinder is connected to the B.A gauges on Frame 33
4	Cylinder with unknown contents. No serial Number	Lower Torpedo Compartment Frame 33 Starboard Side	1 in No.	Approx 4	Cylinder is connected to the B.A gauges on Frame 33
5	Demineraliser Cylinders Serial No. 763006/ 278	Electrolyser Space Frame 38 Port Side	1 in No.	Approx 6	Cylinders are assumed empty, however allow for cylinders to be partially charged

No.	Name of Item or Liquid (Classification in Appendix 1)	Location	Number of Units	Appx. Total Quantity (litres)	Remarks/Reference
6	Demineraliser Cylinders Serial No. 763006/ 289	Electrolyser Space Frame 38 Port Side	1 in No.	Approx 6	Cylinders are assumed empty, however allow for cylinders to be partially charged
7	H.P Air Cylinder Serial No. 155 C-21	Forward AMS Frame 49 – 50 Port Side	1 in No.	Approx 250	Cylinders are assumed empty, however allow for cylinders to be partially charged
8	H.P Air Cylinder Serial No. 156 C-21	Forward AMS Frame 48 – 49 Port Side	1 in No.	Approx 150	Cylinders are assumed empty, however allow for cylinders to be partially charged
9	CO_2 Cylinder C-47	CO_2 Scrubbers Space Starboard Side Frame 57 - 58	1 in No.	Approx 120	Cylinders are assumed empty, however allow for cylinders to be partially charged
10	Small Tube of Eye Ointment C-50	Senior Rates Bunk Space Frame 44	1 in No.	N/A	To be removed from vessel
11	90 Litre Foam Fire Fighting Tank C-47	2 Deck Passageway Frame 48 Outboard Bulkhead	1 in No.	90	Tap tested, sounded empty. Residual are expected to remain from active service

No.	Name of Item or Liquid (Classification in Appendix 1)	Location	Number of Units	Appx. Total Quantity (litres)	Remarks/Reference
12	Possible Chemical Refrigerants C-15	Cold & Cool Room - Copper piping that carries the Refrigeration coolant	1 in No.	Approx 50	Assume that the refrigerants have been removed from the copper pipes. Residual are expected to remain from active service
13	9 Litre Foam Fire Fighting Extinguisher C-47	Diesel Generator Room outboard of the Starboard ATU Frame 76	1 in No.	9	Tap tested, partially charged
14	90 Litre Foam Fire Fighting Tank C-47	Man Room Port Bulkhead Frame 81	1 in No.	90	Tap tested, sounded empty. Residual are expected to remain from active service
15	90 Litre Foam Fire Fighting Tank C-47	Walkway Starboard Bulkhead Frame 88	1 in No.	90	Tap tested, sounded empty. Residual are expected to remain from active service

3.2 Liquids sealed in ship's machinery and equipment

No.	Name of Item or Liquid (Classification in Appendix 1)	Name of Machinery or Equipment	Location	Appx. Total Quantity	Remarks/Reference
1	Oils within hoses. Item C-4 and C-4	Feed and drain hoses	2/001 Upper Torpedo Room	Residual	Left over from active service
2	Oils to tank in indicator C-3, C-4	Tank indicator panels	2/001 Upper Torpedo Room, Port and Starboard side	Residual	Left over from active service
3	Possible water contaminants (not in Appendix)	Emergency Water Tank	2/001 Upper Torpedo Room	Residual	Left over from active service, presumed drained
4	Lubrications oils Item C-3	Torpedo firing tubes	3/001 Lower Torpedo Room	Residual	Left over from active service
5	Fluids within cistern tanks, presumed water based	Toilet cistern tanks	3/005 Bathroom	Residual	Left over from active service, presumed drained

No.	Name of Item or Liquid (Classification in Appendix 1)	Name of Machinery or Equipment	Location	Appx. Total Quantity	Remarks/Reference
6	Liquids within liquid receivers C-15	Liquid Receivers for refrigeration area	3/010 Refrigeration Space	Residual	Left over from active service, presumed drained
7	Lubrication oil C-3, C-4	Periscope oil well	3/015 Lobby	0.6m3	Tank is approximate 1m3. Indicator gauge reads 2/3 full
8	Water associated	Tanks/Boilers	LP Blower Room	Residual	Left over from active service, presumed drained
9	Distilled water	Distilled water tanks and boilers	LP Blower Room	Residual	Left over from active service, presumed drained
10	Oils and fluids	Tank indicator panels	Throughout vessel	Residual	Left over from active service, presumed drained
11	Water based foam	Fire extinguisher	1/010 Manoeuvring Room	Residual	Left over from active service, presumed drained

No.	Name of Item or Liquid (Classification in Appendix 1)	Name of Machinery or Equipment	Location	Appx. Total Quantity	Remarks/Reference
12	Water based foam	Fire extinguisher	1/013 Walkway, starboard side	Residual	Left over from active service, presumed drained
13	Liquids C-3, C-4	Level indicator tanks	1/016 Motor Room	Residual	Left over from active service, observed drained
14	Extractor fluid, C-4	Extractor fluid tank	2/013 Motor Room	Residual	Left over from active service
15	Fluid feed tanks, presumed hydraulic and fuel. C-4, C-3	Feed tanks to motors, both port and starboard sides	2/013 Motor Room	Residual	Left over from active service, presumed drained
16	Coolant additives C-7	Coolant feed tanks	3/003 Sonar cab space	5 litres	Left over from active surface, approx 10litre tank, indicator gauge reads half full
17	Lubricating fluids and oils within Turbine units, x 2. C-3, C-4	Turbine units	3/017 Turbine Generator Room	Residual	Left over from active service

[redacted]

No.	Name of Item or Liquid (Classification in Appendix 1)	Name of Machinery or Equipment	Location	Appx. Total Quantity	Remarks/Reference
18	Fuel remnants to fuel filters	Fuel filter units adjacent to Diesel Generators	2/011 Diesel Generator room	Residual	Left over from active service, presumed drained
19	Hydraulic fluid, C-4	Hydraulic cylinders adjacent to diesel generators	2/011 Diesel Generator room	Indicator reads 2/3 full, tank size not quantifiable	Left over from active service, presumed drained
20	Fluid tanks behind diesel generators, unknown origin	Fluid tanks adjacent too, and behind Diesel Generators 1 and 2	2/011 Diesel Generator room	Residual	Left over from active service, presumed drained
21	Hydraulic fluid C-4	Main Hydraulic fluid store and feed tanks	2/011 Diesel Generator room	Residual per tank 3 no.	Left over from active service, presumed drained
22	Lubricating oil C-4	Lubrication feed tanks	4/011 Main Machinery Space	Residual	Left over from active service, presumed drained
23	Demineraliser (unknown type)	Demineraliser tanks	3/002 Electrolyser Room	Unknown	Left over from active service, presumed emptied

No.	Name of Item or Liquid (Classification in Appendix 1)	Name of Machinery or Equipment	Location	Appx. Total Quantity	Remarks/Reference
24	Various Chemicals, unknown origin	Chemical tank	3/002 Electrolyser Room	Residual	Left over from active service, presumed drained
25	Fluids to Port side tank	Fluid of unknown origin	4/002 Slop Tank Room	Residual	Left over from active service
26	Water components	Hot water cylinder	4/002 Slop Tank Room	Residual	Left over from active service, presumed drained
27	Hydraulic fluid C-4	Hydraulic tank	4/002 Slop Tank Room	Residual to tanks (2 no.)	Left over from active service, presumed drained
28	Anti Seize compounds C-5	Engines, generators, motors, steering gear, shafts. Operationally moving components of systems and equipment	Throughout vessel	Small quantity per unit	Left over from active service, the majority of moving components are now redundant and have been drained

No.	Name of Item or Liquid (Classification in Appendix 1)	Name of Machinery or Equipment	Location	Appx. Total Quantity	Remarks/Reference
29	Anti freeze compounds C-8	Engines, diesel generators and turbines	Where moving machinery and motors and found	Presumed small quantity and plant/machinery is in active and presumed drained	Left over from active service
30	Battery Electrolyte C-16	Emergency and diesel generators	Diesel Generator Room	2 litres estimate	Left over from active service
31	Water treatment test re-agents C-9	Water tanks and cylinders	Through vessel	Residual per unit	Left over from active service, presumed drained

3.3 Gases sealed in ship's machinery and equipment

No.	Name of Item or Liquid (Classification in Appendix 1)	Name of Machinery or Equipment	Location	Appx. Total Quantity	Remarks/Reference
1	Oxygen C-21	Oxygen Generator	2/003 Oxygen Generator Room	Residual	Left over from active service
2	Carbon Dioxide C-22	Fire Extinguisher	2/010 Corridor	Residual	Left over from active service, presumed drained
3	Refrigeration Gases (Unknown type). Likely to be ammonia or R134	Refrigerator	3/011 Cold Room	Residual	Left over from active service, presumed drained
4	Refrigeration Gases (Unknown type). Likely to be ammonia or R134	Tabletop Refrigerator	1/005 Pantry	Residual	Left over from active service, presumed drained
5	Hydrogen	Hydrogen reduction valves/pipes	1/013 Walkway	Residual	Tanks been removed, associated feed pipes and valves still in situ

No.	Name of Item or Liquid (Classification in Appendix 1)	Name of Machinery or Equipment	Location	Appx. Total Quantity	Remarks/Reference
6	Air components	Base 3 Air reservoir	2/013 Motor Room	Residual	Left over from active service, presumed drained
7	Gas within gas containers, unknown origin	Gas tanks adjacent to radiation exclusion zone	2/011 Diesel Generator room	Residual`	Left over from active service, presumed emptied
8	Air components	Base 3 Air reservoir	2/011 Diesel Generator room	Residual	Left over from active service, presumed drained
9	Hydrogen	Hydrogen tank adjacent Diesel Generator 1.	2/011 Diesel Generator Room	Residual	Left over from active service, presumed emptied
10	Carbon Dioxide	Within FWD Port side fire extinguisher	2/011 Diesel Generator Room	Residual	Left over from active service, presumed drained
11	Air components	Within air filtration units Port Side	3/002 Electrolyser Room	Residual	Left over from active service, presumed emptied

No.	Name of Item or Liquid (Classification in Appendix 1)	Name of Machinery or Equipment	Location	Appx. Total Quantity	Remarks/Reference
12	Oxygen and hydrogen C-21	Within electrolyser unit	3/002 Electrolyser Room	Residual	Left over from active service, presumed drained
13	R12 Refrigerant gas A-2	Within Number 1 and 2 system condensers.	3/011 Cold Room	Presumed emptied, plaque evidence to say up to 6kg in both condensers	Left over from active service

3.4 Regular Consumable Goods

No.	Name of Item or Liquid (Classification in Appendix 1)	Location	Unit Quantity	Number of Units	Approximate. Total Quantity	Remarks/Reference
1	Telephone D-1	Upper Torpedo Compartment Frame 35	N/A	1 in No.	N/A	Remains in situ from service
2	Oxygen Generator- Serial No. 860104/2 D-1	Lower Torpedo Compartment Frame 35	N/A	1 in No.	N/A	Remains in situ from service
3	Oxygen Generator- Serial No. 1113 D-1	Lower Torpedo Compartment Frame 35	N/A	1 in No.	N/A	Remains in situ from service
4	Oxygen Generator- Serial No. 860104/7 D-1	O2 Generator Compartment Frame 35	N/A	1 in No.	N/A	Remains in situ from service
5	Oxygen Generator- Serial No. 1092 D-1	O2 Generator Compartment Frame 36	N/A	1 in No.	N/A	Remains in situ from service

No.	Name of Item or Liquid (Classification in Appendix 1)	Location	Unit Quantity	Number of Units	Approximate. Total Quantity	Remarks/Reference
6	Telephone D-1	Electrolyser Space Frame 36	N/A	1 in No.	N/A	Remains in situ from service
7	Telephone D-1	Sonar Cab Space Frame 38	N/A	1 in No.	N/A	Remains in situ from service
8	Jackson Hot Water Boiler- Serial No. 206853 D-1	Senior Rates Mess After Inboard Bulkhead Frame 46	N/A	1 in No.	N/A	Remains in situ from service
9	Telephone D-1	Laundry Forward Bulkhead Frame 47	N/A	1 in No.	N/A	Remains in situ from service
10	Telephone D-1	Garbage Ejector Space Frame 47- 48 Outboard Bulkhead	N/A	1 in No.	N/A	Remains in situ from service
11	Quart Hobart Mixer- Serial No 97041766 D-1	Galley Frame 46 - 47 (On the After Counter)	N/A	1 in No.	N/A	Remains in situ from service

[redacted]

No.	Name of Item or Liquid (Classification in Appendix 1)	Location	Unit Quantity	Number of Units	Approximate. Total Quantity	Remarks/Reference
12	Hobart Potato Peeler- Serial No 97084639 D-1	Galley Frame 47 - 48 (On the Outboard Counter)	N/A	1 in No.	N/A	Remains in situ from service
13	Tabletop Refrigerator	Wardroom Pantry	N/A	1 in No.	N/A	Remains in situ from service
14	Telephone D-1	Forward AMS Frame 49	N/A	1 in No.	N/A	Remains in situ from service
15	Telephone D-1	Sins & Giro Compartment Frame 56	N/A	1 in No.	N/A	Remains in situ from service
16	Lamp containing 2 in No. Fluorescent Tubes D-1	Sins & Giro Compartment Frame 56	N/A	1 in No.	N/A	Remains in situ from service
17	Telephone D-1	3 Deck After Lobby Frame 56	N/A	1 in No.	N/A	Remains in situ from service

[redacted]

No.	Name of Item or Liquid (Classification in Appendix 1)	Location	Unit Quantity	Number of Units	Approximate. Total Quantity	Remarks/Reference
18	Telephone D-1	WT Office Frame 58	N/A	1 in No.	N/A	Remains in situ from service
19	Box of Fluorescent Tubes D-1	Radar Office on the desk	N/A	6 in No.	N/A	Left by the production maintenance team- To be removed from vessel
20	Used Light Bulbs D-1	WT Office Inboard Desk	N/A	5 in No.	N/A	To be removed from vessel
21	Box of Fluorescent Tubes D-1	AMP Space (On the inboard deck top adjacent to the door)	N/A	9 in No.	N/A	Left by the production maintenance team- To be removed from vessel
22	Telephone D-1	Low Pressure Blow Compartment Frame 61	N/A	1 in No.	N/A	Remains in situ from service
23	Telephone D-1	Reactor Tunnel Port side Frame 69	N/A	1 in No.	N/A	Remains in situ from service

No.	Name of Item or Liquid (Classification in Appendix 1)	Location	Unit Quantity	Number of Units	Approximate. Total Quantity	Remarks/Reference
24	Telephone D-1	Reactor Compartment Mid Level Frame 70	N/A	1 in No.	N/A	Remains in situ from service
25	Telephone D-1	Diesel Generator Room Adjacent to Ladder Frame 83	N/A	1 in No.	N/A	Remains in situ from service
26	Telephone D-1	Turbo Generator Compartment Frame 83 centre line walkway	N/A	1 in No.	N/A	Remains in situ from service
27	Ships General Fluorescent Tubes D-1	Throughout Vessel	N/A	Approx 300 in No.	N/A	Remains in situ from service

4. ABBREVIATIONS / TERMS USED IN THIS DOCUMENT

Abbreviation / Term	Description
A/C	**Air Conditioning**
Amp	**Amplifier**
AMS	**Auxiliary Machinery Space**
ATU	**Air Treatment Unit**
CFC	**Chlorofluorocarbon**
Co's	**Commanding Officer**
DG	**Diesel Generator**
EMR	**Electrical Maintenance Room**
HMS	**Her Majesty's Ship**
HP	**Health Physics**
H.P	**High Pressure**
JR's	**Junior Rates**
MMMF	**Man Made Mineral Fibre**
MMS	**Main Machinery Space**
MOD	**Ministry of Defence**
Organotin compounds	**Organotin compounds include Tributyl tins (TBT), Triphenyl tins (TPT) and Tributyl tin oxide (TBTO).**
PBB	**Polybrominated biphenyl**
PBDE	**Polybrominated diphenyl ethers**
PCB	**Polychlorinated biphenyl**
PCT	**Polychlorinated terphenyls**
PH	**Pressure Hull**
PPE	**Personal Protective Equipment**

PVC	**Polyvinyl chloride**
SOW	**Scope of Work**
SQEP	**Suitably Qualified and Experienced Person**
SR's	**Senior Rates**
SW	**Sea Water**
TG	**Turbo Generator**
WT	**Wireless Telegraphy**

APPENDIX 2

STANDARD FORMAT OF THE INVENTORY OF HAZARDOUS MATERIALS

Part I HAZARDOUS MATERIALS CONTAINED IN THE SHIP'S STRUCTURE AND EQUIPMENT

I-1 Paints and coating systems containing materials listed in Table A and Table B of appendix 1 of the Guidelines

No.	Application of paint	Name of paint	Location	Materials (classification in appendix 1)	Approx. quantity		Remarks
1	Anti-drumming compound	Primer, xx Co., xx primer #300	Hull part	Lead	35.00	kg	
2	Anti-fouling	xx Co., xx coat #100	Underwater parts	TBT	120.00	kg	

I-2 Equipment and machinery containing materials listed in Table A and Table B of appendix 1 of the Guidelines

No.	Name of equipment and machinery	Location	Materials (classification in appendix 1)	Parts where used	Approx. quantity		Remarks
1	Switch board	Engine control room	Cadmium	Housing coating	0.02	kg	
			Mercury	Heat gauge	<0.01	kg	less than 0.01kg
2	~~Diesel engine, xx Co., xx #150~~	~~Engine room~~	~~Cadmium~~	~~Bearing~~	~~0.02~~	~~kg~~	
3	Diesel engine, xx Co., xx #200	Engine-room	Cadmium	Bearing	0.01	kg	Revised by XXX on Oct. XX, 2008
4	Diesel generator (x 3)	Engine-room	Lead	Ingredient of copper compounds	0.01	kg	

I-3 Structure and hull containing materials listed in Table A and Table B of appendix 1 of the Guidelines

No.	Name of structural element	Location	Materials (classification in appendix 1)	Parts where used	Approx. quantity		Remarks
1	Wall panel	Accommodation	Asbestos	Insulation	2,500.00	kg	
2	Wall insulation	Engine control room	Lead	perforated plate	0.01	kg	cover for insulation material
			Asbestos	Insulation	25.00	kg	under perforated plates
3							

Part II OPERATIONALLY GENERATED WASTE

No.	Location[1)]	Name of item (classification in appendix 1) and detail (if any) of the item	Approx. quantity		Remarks
1	Garbage locker	Garbage (food waste)	35.00	kg	
2	Bilge tank	Bilgewater	15.00	m^3	
3	No.1 cargo hold	Dry cargo residues (iron ore)	110.00	kg	
4	No.2 cargo hold	Waste oil (sludge) (crude)	120.00	kg	
5	No.1 ballast tank	Ballast water	2,500.00	m^3	
		Sediments	250.00	kg	

Part III STORES

III-1 Stores

No.	Location[1)]	Name of item (classification in appendix 1)	Unit quantity		Figure		Approx. quantity		Remarks[2)]
1	No.1 fuel oil tank	Fuel oil (heavy fuel oil)	-		-		100.00	m^3	
2	CO_2 room	CO_2	100.00	kg	50	bottles	5,000.00	kg	
3	Workshop	Propane	20.00	kg	10	pcs	200.00	kg	
4	Medicine locker	Miscellaneous medicines	-		-		-		Details are shown in the attached list.
5	Paint stores	Paint, xx Co., #600	20.00	kg	5	pcs	100.00	kg	Cadmium containing.

III-2 Liquids sealed in ship's machinery and equipment

No.	Type of liquids (classification in appendix 1)	Name of machinery or equipment	Location	Approx. quantity		Remarks
1	Hydraulic oil	Deck crane hydraulic oil system	Upper deck	15.00	m^3	
		Deck machinery hydraulic oil system	Upper deck and bosun store	200.00	m^3	
		Steering gear hydraulic oil system	Steering gear room	0.55	m^3	
2	Lubricating oil	Main engine system	Engine-room	0.45	m^3	
3	Boiler water treatment	Boiler	Engine-room	0.20	m^3	

III-3 Gases sealed in ship's machinery and equipment

No.	Type of gases (classification in appendix 1)	Name of machinery or equipment	Location	Approx. quantity		Remarks
1	HFC	AC system	AC room	100.00	kg	
2	HFC	Refrigerated provision chamber machine	AC room	50.00	kg	

III-4 Regular consumable goods potentially containing Hazardous Materials

No.	Location[1)]	Name of item	Quantity	Remarks
1	Accommodation	Refrigerators	1	
2	Accommodation	Personal computers	2	

1) The location of a Part II or Part III item should be entered in order based on its location, from a lower level to an upper level and from a fore part to an aft part. The location of Part I items is recommended to be described similarly, as far as practicable.
2) In column "Remarks" for Part III items, if Hazardous Materials are integrated in products, the approximate amount of the contents should be shown as far as possible.

ASBESTOS SURVEY REPORT - TYPE 3

HMS Conqueror

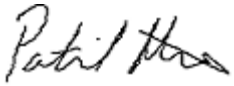
(Devonport Royal Dockyard,)
Lucion Report No.: 21054747
Lucion Report Issue Date: 03 March 2010

lucion environmental

Head Office
7 Halifax Court
Dunston
Gateshead
NE11 9JT

T: 0191 461 8999
E: enquiries@lucion.co.uk
www.lucion.co.uk

Report Summary

Works detailed within report commissioned by	Babcock Marine
Lucion Environmental Ltd report number	21054747
Survey type	Type 3
Premises surveyed	HMS Conqueror, Devenport Royal Dockyard.
Surveyor	Mr Philip M. Rozier BSc. (Hons); Mr Adam Mead; Mr Daniel Scott;
Surveyor signature	
Survey Date	1/12/2010 8:27:00 AM
Bulk sample analysis location	Lucion Environmental Ltd Head Laboratory
Analyst	Mr M Austin,Mr C E Pickles,Mr B Wardle
Analysis date	2010/01/29
Report approver	Dr Patrick A.J. Morton BSc. (Hons) Quality Manager
Approved signature	
Approval date	03 March 2010

Reporting Detail

Total Number of Survey Items Examined	222
Total Number of Asbestos Containing Materials	85
Total Number of R1 Items	2
Total Number of R2 Items	19
Total Number of R3 Items	64

Survey Summary

Report Contents:

Report Contents

Introduction

This report aims to:

- Introduce pertinent legislation relating to the management of asbestos in non-domestic premises
- Outline the sample testing and inspection methodology employed by Lucion Environmental Ltd
- Relate the significance of the report contents to the Control of Asbestos Regulations (2006)
- Detail survey findings compliant with Regulation 4 of the Control of Asbestos Regulations (2006)
- Serve as a reference document to assist in making further steps towards the management of any asbestos containing materials in the premises
- Provide the information necessary to compile an asbestos management plan compliant with the Control of Asbestos Regulations (2006)
- Form an asbestos register

The Control of Asbestos Regulations (2006)

Regulation 4 of the Control of Asbestos Regulations (2006) states the obligations that persons defined as "duty holders" have to manage asbestos containing materials in non-domestic premises. This instrument defines a duty holder as being:

"Every person who has, by virtue of a contract or tenancy, an obligation of any extent in relation to the maintenance or repair of non-domestic premises or any means of access thereto or egress there from; or

In relation to any part of non-domestic premises where there is no such contract or tenancy, every person who, to any extent, has control of that part of non-domestic premises or any means of access thereto or egress there from" CAR, 2006.

Regulation 4 also states the following:

"In order to enable him [sic "dutyholder"] to manage the risk from asbestos in non-domestic premises, the dutyholder shall ensure that a suitable and sufficient assessment is carried out as to whether asbestos is or is liable to be present in the premises"

This report satisfies this requirement, unless stated otherwise, by detailing the inspection findings reporting the presence of asbestos containing materials in those areas given in the survey inspection detail.

The Approved Code of Practice and Guidance – Publication "The Management of Asbestos in Premises" (L127) details the material assessment that must be carried out to determine the risk posed by asbestos containing materials in buildings. This material risk assessment has been carried out on those materials presumed or proven to contain asbestos. The resulting material assessment risk ratings can plan (in conjunction with the management recommendation made for these materials) then be used to form the basis of an asbestos management.

Vessels Included in Survey Scope

HMS Conqueror

Included Vessels

Every effort has been made to identify all asbestos materials so far as was reasonably practical to do so within the scope of the survey and the attached report. Methods used to carry out the survey were agreed with the client prior to any works being commenced.

Survey techniques used involves trained and experienced surveyors using the combined approach with regard to visual examination and necessary bulk sampling. It is always possible after a survey that asbestos based materials of one sort or another may remain in the property or area covered by that survey, this could be due to various reasons:

Asbestos materials existing within areas not specifically covered by this report are therefore outside the scope of the survey.
Materials may be hidden or obscured by other items or cover finishes i.e. paint, over boarding, disguising etc. where this is the case then its detection will be impaired.
Asbestos may well be hidden as part of the structure to a Vessel and not visible until the structure is dismantled at a later date.
Debris from previous asbestos removal projects may well be present in some areas; general asbestos debris does not form part of this survey however all good intentions are made for its discovery.
Where an area has been previously stripped of asbestos i.e. plant rooms, ducts etc. and new coverings added, it must be pointed out that asbestos removal techniques have improved steadily over the years since its introduction. Most notably would be the Control of Asbestos at Work Regulations (1987) laying down certain enforceable guidelines. Asbestos removal prior to this regulation would not be of today's standard and therefore debris may be present below new coverings.
This survey will detail all areas accessed and all samples taken, where an area is not covered by this survey it will be due to No Access for one reason or another i.e. working operatives, sensitive location or just simply no access. It may have been necessary for the limits of the surveyor's authority to be confirmed prior to the survey.
Access for the survey may be restricted for many reasons beyond our control such as height, inconvenience to others, immovable obstacles or confined space. Where electrical equipment is present and presumed in the way of the survey no access will be attempted until proof of its safe state is given. Our operatives have a duty of care under the Health and Safety at Work act (1974) for both themselves and others.
In the Vessel where asbestos has been located and it is clear that not all areas have been investigated, any material that is found to be suspicious and not detailed as part of the survey should be treated with caution and sampled accordingly.
Certain materials contain asbestos to varying degrees and some may be less densely contaminated at certain locations (Artex for example). Where this is the case the sample taken may not be representative of the whole product throughout.
Where a survey is carried out under the guidance of the owner of the property, or his representative, then the survey will be as per his instructions and guidance at that time.

Lucion Environmental Ltd cannot accept any liability for loss, injury, damage or penalty issues due to errors or omissions within this report. Lucion Environmental Ltd cannot be held responsible for any damage caused as part of this survey carried out on your behalf. Due to the nature and necessity of sampling for asbestos some damage is unavoidable and will be limited to just that necessary for the taking of the sample.

The table “areas excluded and not fully accessed during survey” gives details of those Vessels, locations and items not accessed at the time of the survey (where appropriate, and if all areas were fully accessed, no items are listed).

In addition to those items listed in table “area excluded or not fully accessed during survey”, Lucion does not routinely investigate certain items during the course of a type 3 asbestos survey and so no specific mention of their exclusion is made. Typically such items may include, but are not restricted to:

Live electrical systems and apparatus; live heater units; live lift machinery; live hot ovens and steam systems
Moving plant and equipment
Unsafe heights; fragile roof structures and glazed partitions or skylights
Open sewers or effluent drains; chemical and biological material handling systems; areas of insect or animal Infestation; confined spaces or areas of potentially hazardous environment
Ventilation ductwork internal acoustic dampers and jointing compounds

Where suspect asbestos containing materials e.g. ceiling finishes, board materials etc exist no attempt (unless otherwise stated) will be made to investigate behind these materials. Lucion Environmental Ltd has a duty under Regulation 16 of the Control of Asbestos Regulations (2006) to prevent or reduce the spread of asbestos; penetration of such materials without appropriate control measures may be in contravention of this duty.

The scope of this survey relates only to Vessel or area(s) inspected and does not include any form of investigation of the land on which the Vessel is situated.

Where the survey is of an intrusive nature (Type 3, localised Type 3, project specific intrusive investigation etc.) and the property is to be re-occupied or be subject to minor or localised refurbishment etc. following the investigation the level of intrusion may be restricted. As far as is reasonably practicable such restrictions will be indicated within the “areas excluded & not fully accessed during survey” section of this report. Scenarios leading to intrusion restriction may [by way of example] include (but are not limited to) security integrity of the Vessel envelope, significant damage to decorative finishes, risk to the structural integrity of the Vessel, occupation within adjacent areas. Investigations undertaken in such situations may, through circumstantial restrictions, be incomplete. Further investigation works may be required once unrestricted access can be offered.

Items or areas not covered by this survey that are scheduled to undergo works that may result in the release of asbestos fibres should be investigated prior to commencement of such activities.

Survey Methodology

The asbestos survey findings detailed in this report were gathered using documented in house inspection (TOP01.01) and sampling procedures (TOP01.02) that implement the requirements of the Health and Safety Executive Publications MDHS 100 (Methods for the Determination of Hazardous Substances – Surveying, Sampling and Assessment of Asbestos Containing Materials) and HSG 248 (Asbestos: The analysts' guide for sampling, analysis and clearance procedures). All asbestos surveys aim to locate as far as is reasonable practical, the presence and extent of any ACMs in the Vessel. This method complies with section 3 of Regulation 4 (CAR, 2006)

MDHS 100

Publication MDHS 100 sub-divides asbestos surveys into 3 principal types, termed: Type 1, 2 & 3. These survey types may be summarised as follows (all have been shown to allow visualisation of the scope of the present type 3 survey relative to other types and their suggested application/s).

Survey Type 1: Location and Assessment (Presumptive)

The purpose of the Type 1 survey is solely to locate the presence, extent and condition of suspect asbestos containing materials without sampling any of the materials encountered. As no samples are taken all materials which can reasonably be expected to contain asbestos must be presumed to do so. Materials, which are visually assessed as containing asbestos, will be strongly presumed to do so. This type of survey essentially defers the sampling of materials suspected to contain asbestos until a later date. In addition, the duty holder risks bearing management costs of materials that must be presumed to contain asbestos but may be found not to, following later sampling and analysis. In short, Type 1 surveys are not routinely recommended but can have application where sampling of materials may be unrealistic under the prevailing circumstances. It should be realised that the limited nature of this survey must be reflected in any management plan implemented when complying with Regulation 4 of CAR (2006).

Survey Type 2: Standard Sampling, Identification and Assessment

The underlying purpose and inspection methodology of the Type 2 survey is as that of the Type 1 survey. However, where possible, representative samples of materials suspected by the surveyor to contain asbestos are taken and analysed for the presence and type of asbestos fibre present. This survey type is suitable for integration into a plan for the management of asbestos containing materials under Regulation 4 of CAR (2006).

Survey Type 3: Full Access, Sampling and Identification

The Type 3 survey is fully intrusive (as far as is reasonably practicable) and is aimed at locating all asbestos containing materials within a survey area. Normally, unless otherwise specified, it involves fully invasive and possibly destructive investigation of all survey areas, in order to locate and assess all materials suspected as containing asbestos. Usually the survey records only the location and estimated extent of asbestos containing materials.
A priority rating is not normally assigned to asbestos containing materials encountered as type three surveys normally precede removal of these materials rather than their management *in situ* so negating the need to assess their risk. However for this contract the client has requested the initial risk assessment of the material is carried as part of the type 3 survey. A type 3 survey is normally recommended prior to demolition/ major refurbishment work commencing in the survey area.

Survey Methodology – Important Notes

Reasonable Skill and Care

Although all survey areas that have been examined are reported in accordance with MDHS 100 and documented in house procedures (for the specified survey type) and all reasonable skill and care has been exercised by the surveyor in doing so, it must be realised that no survey can reasonably guarantee beyond doubt that all asbestos containing materials have been located. Reasons for this limitation may include health and safety issues, reasons of practicality, non-access to live equipment and dangerous or contaminated environments or risk of unsafe levels of damage being inflicted on the survey area amongst others, or the location of the material being outside the investigative scope of the survey type undertaken.

Non-asbestos Materials – A Reasoned Argument

All items examined by the surveyor at the time of the survey are listed in the inspection detail of this report. This detail includes those items believed by the surveyor not to contain asbestos and an appropriate categorisation of their material composition is given. Employing this rationale the surveyor can use experience and judgement to form a reasoned argument that there is evidence to suggest that the material may not contain asbestos. Periodically "non-asbestos" Vessel materials may be sampled by way of a method control to further support the surveyor's argument. These materials do not bear any risk assessment detail.

Materials Presumed to Contain Asbestos

If the surveyor feels that a reasoned argument against a material containing asbestos cannot be formed, the item in question may be presumed to contain asbestos. This may include, but is not restricted to, areas where access cannot be gained. This scenario attracts the designation "P" in the sampling strategy column of the "Survey Inspection Detail, Sample Test Report and Risk Level Assessment Report" table within this report.

Materials Strongly Presumed to Contain Asbestos

In the case of a material or materials being encountered that the surveyor suspects, following visual assessment, as containing asbestos but cannot be sampled for reasons of practicality, that material is strongly presumed to contain asbestos. An assessment (where possible) of the material's extent and condition is made. *Nota bene*: as no definitive assessment of asbestos fibre type contained in the material may be made, this portion of the priority score is based on a strongly presumed worst-case scenario of fibre type commonly contained in the material concerned. This scenario attracts the designation "SP" in the sampling strategy column of the "Survey Inspection Detail, Sample Test Report and Risk Level Assessment Report" table within this report.

Sampling of Materials

If access to the material permits, a representative sample of the material is taken according to the "sampling strategy". An assessment (where necessary or possible) of the material's extent and condition is made. As no practical sampling strategy can be assured as being entirely representative of the circumstances encountered during surveying, care should be exercised when interpreting results. That is to say that if works are planned that may cause disturbance or require the removal of asbestos containing materials, implementation of a more intense sampling regime may be desirable.

Material Cross Referencing

In the event of a suspect material being encountered with a frequency that does not permit continual re-sampling on the grounds of practicality, the surveyor may cross reference this item with one that has already been sampled. To do this the surveyor will ensure that the material is identical in nature (through examining visual appearance e.g. colour) to that of the material to which it is referenced. *Nota bene*: as no definitive assessment of asbestos fibre type contained in the material may be made, this portion of the priority score is strongly presumed as being the same as that of the material from which it is cross referenced. This scenario attracts the designation "X" in the sampling strategy column of the survey detail.

Method of Sample analysis

The bulk asbestos fibre identification results detailed in this report were obtained using a documented in house testing procedure (TOP01.03) that implements the requirements of Health and Safety Executive Publication HSG 248 (Asbestos: The analysts' guide for sampling, analysis and clearance procedures). All samples collected during the course of this survey are tested in accordance with this method.

HSG 248

Publication HSG 248 describes a two stage approach to the detection and subsequent identification of asbestos fibre in bulk (i.e. suspect sample) materials. Initially the microscopist will examine the material under a low power stereo light microscope. The microscopist then performs extensive optical tests using polarised light microscopy in order to confirm or refute that the material contains an asbestos mineral.

This techniques allows for the detection of the six common forms of asbestos fibre as follows:

Asbestos Fibre Type	**Common Nomenclature**
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	N/A
Fibrous Anthophyllite	N/A
Fibrous Tremolite	N/A

Asbestos Nomenclature

The results of this test are given, where appropriate, in the inspection detail report for each sample taken and are summarised in the management recommendation report. The results of sample analysis presented in this report pertain to the samples analysed and not necessarily to the material from which the samples were taken and relate only to the time at which sampling took place and to the conditions prevailing during that time.

Sampling Strategy

Product Type	Sampling Strategy & Additional Information
Vinyl, composite floor coverings, surface coverings	One sample per room, or one sample per 40m² per product type or colour. Where large expanses of the same material have been used throughout an area, the frequency of sampling may be decreased at the discretion of the surveyor
Textured Coatings	One composite sample per room or one sample per 9m² dependent on similarity of coating type. Where large expanses of the same material have been used throughout an area. The frequency of sampling may be or increased or decreased at the discretion of the surveyor
Gaskets, ropes, woven product, seals, mastics, papers, felts	One sample per product type, or if appropriate, per area or location
Asbestos containing insulating board	One sample per location or per 25m² of continuous product run. The frequency of sampling may be or increased or decreased at the discretion of the surveyor dependent on such factors as consistency of product type or occurrence of different board types. The specific nature of this material has been determined on site using the competence and experience of the surveyor. Lucion Environmental accepts no liability for any decision based on this determination and as such it should only be regarded as an opinion. Where doubt exists as to the classification of a board material HSE Approved Code of Practice L143 "Work with materials containing asbestos" recommends carrying out a water absorption test. Lucion Environmental will perform this test only upon specific request
Cement Products	One sample per product type, or if appropriate, per area or location. The specific nature of this material has been determined on site using the competence and experience of the surveyor. Lucion Environmental accepts no liability for any decision based on this determination and as such it should only be regarded as an opinion. Where doubt exists as to the classification of a board material HSE Approved Code of Practice L143 "Work with materials containing asbestos" recommends carrying out a water absorption test. Lucion Environmental will perform this test only upon specific request
Debris	One sample per location, or more at the discretion of the surveyor. Where debris exists in a location quantification can be hindered by a number of factors including paint coverings, air movement, the passage of time etc. The surveyor reports only the material discernable within the confines of the survey sufficient to show that debris exists in a location. Further focussed investigation may be needed to determine the extent of debris for the purposes of decontamination
Insulative Materials	One sample per material product type (to include change in outward appearance) and at least one sample per 10 metres pipe run. In addition, one sample per different product applied to pipe bends
Sprayed Insulation	One sample per 20m² of material

Sampling Strategy

Results and Findings

The item examination and inspection findings, bulk analysis results, material assessment and initial risk level assessment are reported in the form of an asbestos inspection and testing detail register. The purpose and structure of this register are explained in the proceeding sections.

Initial Risk Level Assessment

The initial risk level assessments made within this report for those items presumed (strongly or otherwise), or positively proven by sampling and subsequent analysis, to contain asbestos have been made on the basis of the Material Assessment Algorithm detailed within the publications MDHS 100 and HSG 227.

This assessment aims to elucidate the potential for a particular material to release hazardous fibres and expose those within the specific area to asbestos dust. The following table gives the scoring strategy for the initial risk level assessment and indicates the scoring degree of those points that are considered, namely product type, condition, surface treatment and asbestos fibre type present.

	Score Category	Score
Product Type An assessment of the inherent risk a product may pose (Product debris is assessed on the product type from which it originates)	Asbestos reinforced composites - Plastics / resins / mastics / felts / vinyl tiling / semi rigid paints / decorative finishes / asbestos cement and other such similar bound materials / debris	1
	Materials of a medium asbestos content (weight %) including - Asbestos insulating board / millboard / low density insulation board / textiles / gaskets / ropes / papers / debris from asbestos containing composite material and cement	2
	Materials of a high asbestos content including - Thermal insulation / sprayed asbestos / loose asbestos / packing / filled padding / all other debris	3
	Undamaged – No visible signs of damage	0
	Minor damage - Light material surface abrasion / abrasion to edges	1

	Medium damage - Evidence of loose asbestos fibre protruding from material / poor condition of material is notable	2
	Major damage - Significant damage to materials often resulting in the short-term production of asbestos containing debris / delamination of sprays and thermal insulation / asbestos debris	3
Surface Treatment An assessment of the level of fibre retention the surface of a material may be capable of	Composite materials - Plastics / resins / mastics / felts / vinyl tiling / semi rigid paints / decorative finishes / unpainted asbestos cement	0
	Sealed and enclosed materials – Painted asbestos insulating board / enclosed asbestos lagging and sprayed asbestos (as originally installed) / unsealed asbestos cement products	1
	Unsealed and encapsulated materials – Unsealed asbestos insulating board / asbestos lagging, sprayed asbestos and woven material encapsulated (remedially)	2
	Unsealed friable materials – Unsealed asbestos lagging and sprayed asbestos	3
Asbestos Fibre Type An assessment of asbestos fibre types propensity to cause asbestos related diseases	Serpentine Asbestos - Chrysotile	1
	Amphibole Asbestos – Amosite Anthophyllite Tremolite Actinolite	2
	Amphibole Asbestos – Crocidolite	3

Scoring regime

Following the rating of a material using the above criteria, the resulting aggregated additive material score may be assessed in terms of accessibility to derive an assessment of initial risk level as follows:

Material / Accessibility Score				
	Very Low Risk [1-4]	Low Risk [5-6]	Medium Risk [7-9]	High Risk [10-12]
Inaccessible [1]	R3	R3	R3	R2
Periodically Accessed [2]	R3	R3	R2	R1
Frequently Accessed [3]	R3	R2	R1	R1
R: Risk assessment level				

Risk level regime

General Interpretation of Risk Assessment Level:

Risk Assessment Level	Interpretation #
R1	Recommended Control Action - immediate implementation
R2	Recommended Control Action – as soon as practicable (in interim period material should be regularly inspected and its management planned for)
R3	Recommended Control Action – not immediately necessary (material should be regularly inspected and its management planned for)
# The risk level assessment is determined on the basis of information collated during the course of the survey and sample testing. As a consequence of this, the risk assessment level	

Risk level interpretation

The risk level assessment is determined on the basis of information collated during the course of the survey. The risk assessment level needs to be reviewed periodically, normally in line with a frequency defined in an asbestos management plan) to verify its validity and prior to any refurbishment work within the Vessel/ site.

Recommendations

In addition to the risk assessment level assigned to strongly presumed, presumed and identified asbestos containing material, a management control action recommendation is also made. It must be realised that this/these management recommendations are made on the basis of prevailing material conditions and access at the time of the survey and as such are intended solely as a guide to assist in the effective control of the materials concerned. Where doubt may be raised about the action that should be taken regarding an asbestos containing material, measures should be implemented to a degree that reflect either those of a higher risk or a more in depth risk assessment should be carried out. This risk assessment may account for greater knowledge of the material's location (i.e. greater than that of the surveyor at the time of survey) or knowledge (current or future) of activities or works surrounding or concerning the material.
The current recommendations conventionally made by Lucion Environmental Ltd may include the following:

Recommendation	Description	Notes
Air Monitoring	Sampling of air for asbestos fibre concentration Necessary where a risk of fibre exposure is present and assessment of such exposure presence or absence is prudent	UKAS accredited analytical laboratory should perform reassurance air testing
Access Restriction	Restriction of access to area / location only to personnel wearing appropriate PPE/RPE	Suitability of RPE/PPE must be carefully assessed and procedure invoked to ensure these control measures are adhered to
Access Prohibition	Prohibition of access to area / location to all personnel	Area should be marked clearly as being prohibited to all personnel, possibly in conjunction with asbestos warning stickers
Environmental Clean-up	A cleaning process used to prevent the spread of asbestos containing contaminants	Services of a licensed asbestos removal contractor should be engaged and all works carried out under appropriate controlled conditions. Works should also be accompanied by an appropriate air test performed by a UKAS accredited laboratory.
Material Repair	Repair of the material in such a manner as to minimise the release of asbestos fibre	Repair of materials is recommended by the Health and Safety Executive as an alternative to removal, where reasonably safe to so.
Material Encapsulation	Encapsulation of the material in a manner that ensures the complete enclosure of any remaining asbestos fibres	Encapsulation of materials is a possible alternative to their removal, where reasonably safe to do so. Works should also be accompanied by appropriate air test performed by a UKAS accredited laboratory
Material Removal	Removal of the material in instances where it's remaining *in situ* would lead to a high residual risk level. Or removal may be necessary to permit work within the location. Removal of	Removal works should be carried out in accordance with the relevant ACOP (approved code of practice), L143

	materials may also be carried out on a preventive basis.	
Any recommendations made with in this report are made on the basis of findings collated at the time of survey. Recommendations should undergo careful client evaluation prior to a final management decision being made. Lucion Environmental Ltd does not accept any responsibility for any works carried out as a result of recommendations made within this report.		

Recommendation regime

At this point it is pertinent to return to the legislation behind this report and outline the next steps that may need to be carried out in managing asbestos.
Review all recommendations and risk level ratings given within this report (CAR 2006 Regulation 4, 10)
Prepare a plan aimed at managing asbestos containing materials and works that may affect them (CAR 2006 Regulation 4, 8)
Ensure a procedure is in place to prevent work being carried out without the asbestos register being consulted (CAR 2006 Regulation 4, 9)
Arrange a program of asbestos containing material re-inspection (CAR 2006 Regulation 4, 10)

If any remedial works need to be carried out, decide whether or not they need to be carried out by a licensed contractor. If you are unsure about this Lucion can offer advice as to what you should do.

Cited References and Further Reading

1. Control of Asbestos Regulations (2006). The Stationary Office. ISBN 07176 6206 3
2. Construction (Design and Management) Regulations (2007). The Stationary Office. ISBN 011 0438450
3. The Hazardous Waste Regulations (2005). The Stationary Office. ISBN 011 0726855
4. The Management of Asbestos in Non-Domestic Premises (2006). Approved Code of Practice & Guidance L127 HSE Books. ISBN 07176 2382 3
5. A Comprehensive Guide to Managing Asbestos in Premises (2002). HSE Books. ISBN 07176 2381 5
6. Introduction to Asbestos Essentials: Comprehensive Guidance on Working With Asbestos in the Building Maintenance and Allied Trades (2001). HSE Books. ISBN 07176 1901 X
7. Asbestos Essentials Task Manual: Task Guidance Sheets for the Building and Allied Trades (2001). HSE Books. ISBN 07176 1887 0
8. Asbestos and man-made mineral fibres in buildings: Practical Guidance (1999) Fourth Edition. DETR. ISBN 07277 2835 0
9. MDHS 100 (Methods for the Determination of Hazardous Substances- Surveying, sampling and assessment of asbestos-containing materials) (2001) HSE Books. ISBN 0 7176 2076 X
10. HSG 248 (Asbestos: The analysts' guide for sampling, analysis and clearance procedures) (2005) HSE Books. ISBN 0 7176 2875 2

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	Product Score	Material Condition	Surface Treatment	Fibre Identification	Material Score	Accessibility Score	Risk Level Assessment
HMS Conqueror	01/001 Conning Tower	gaskets to pipework flanges	gaskets	Cross Reference	21054747-150	Throughout Location	2	1	1	SP Chrysotile	5	2	R3
HMS Conqueror	01/001 Conning Tower	wall lining	insulation	Cross Reference	21054747-015					SP Non-Asbestos Fibre			
HMS Conqueror	1/001 dry provision store	floor covering	vinyl tile (green) & screeding to deck	Sample	21054747-029					Non-Asbestos Fibre			-
HMS Conqueror	1/001 dry provision store	putty sealant to floor	Asbestos-containing composite	Sample	21054747-030	Small Quantity Observed	1	2	0	Chrysotile (1)	4	2	R3
HMS Conqueror	1/002 8 berth cabin	floor covering	vinyl tile (brown) & screeding to deck	Sample	21054747-053					Non-Asbestos Fibre			-
HMS Conqueror	1/003 2 berth cabin	floor covering	vinyl tile (brown) & screeding to deck	Cross Reference	21054747-053					SP Non-Asbestos Fibre			
HMS Conqueror	1/004 wardroom	floor covering	vinyl tile (brown)	Cross Reference	21054747-053					SP Non-Asbestos Fibre			
HMS Conqueror	1/005 wardroom pantry	lining to duct within ceiling void	cork	Sample	21054747-072					Non-Asbestos Fibre			-
HMS Conqueror	1/006 Sonar Room	port side fuse indicator panel	gasket underneath	Sample	21054747-057					Non-Asbestos Fibre			-
HMS Conqueror	1/006 Sonar Room	insulation to duct behind stbd wall behind partition	Asbestos-containing insulation	Sample	21054747-058	4 sqm	3	3	3	Amosite (2)	11	2	R1
HMS Conqueror	1/006 Sonar Room	port side behind partition	woven blanket to pipework	Presume		2 sqm				P Chrysotile			-
HMS Conqueror	1/006 Sonar Room	sonar junction box	gasket	Sample	21054747-059					Non-Asbestos Fibre			-

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	Product Score	Material Condition	Surface Treatment	Fibre Identification	Material Score	Accessibility Score	Risk Level Assessment
HMS Conqueror	1/006 Sonar Room	floor covering	vinyl tile	Sample	21054747-060					Non-Asbestos Fibre			-
HMS Conqueror	1/006 Sonar Room	sub floor	screeding to deck	Sample	21054747-061					Non-Asbestos Fibre			-
HMS Conqueror	1/006 Sonar Room	covering to duct behind stbd wall partition	Asbestos-containing woven product	Sample	21054747-071	1 sqm	2	2	2	Chrysotile (1)	7	2	R2
HMS Conqueror	1/007 Co Cabin	floor covering	vinyl tile (brown)	Cross Reference	21054747-053					SP Non-Asbestos Fibre			
HMS Conqueror	1/007 Co Cabin	floor covering	vinyl tile & screeding	Sample	21054747-054					Non-Asbestos Fibre			-
HMS Conqueror	1/007 Co Cabin	floor behind redundant sink unit	insulation debris	Sample	21054747-055					Non-Asbestos Fibre			-
HMS Conqueror	1/007 Co Cabin	high level pipe flange in shower area	Asbestos-containing gasket	Sample	21054747-056	Throughout Location	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	1/008 Control room	pipework in void above computer suite	Asbestos-containing lagging	Sample	21054747-062	Not Quantifiable	3	2	1	Amosite (2)	8	2	R2
HMS Conqueror	1/008 Control room	pipe work bracket behind redundant computers, starboard side	Asbestos-containing woven product	Sample	21054747-063	Extensive	2	2	1	Chrysotile (1)	6	2	R3
HMS Conqueror	1/008 Control room	pipework	Asbestos-containing gasket	Sample	21054747-064	Throughout Location	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	1/008 Control room	pipework above depth gauge	Asbestos-containing gasket	Sample	21054747-065	Small Quantity Observed	2	3	2	Chrysotile (1)	8	2	R2
HMS Conqueror	1/008 Control room	large pipe run behind water tank	Asbestos-containing woven product	Sample	21054747-066	50 lm	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	1/008 Control room	large pipe work behind water tank	insulation	Sample	21054747-067					Non-Asbestos Fibre			-
HMS Conqueror	1/008 Control room	floor covering	brown lino	Sample	21054747-068					Non-Asbestos Fibre			-

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	Product Score	Material Condition	Surface Treatment	Fibre Identification	Material Score	Accessibility Score	Risk Level Assessment
HMS Conqueror	1/008 Control room	floor covering	vinyl tile (blue)	Sample	21054747-069					Non-Asbestos Fibre			-
HMS Conqueror	1/008 Control room	floor covering to steps adjacent to tunnel	vinyl tile (blue)	Sample	21054747-070					Non-Asbestos Fibre			-
HMS Conqueror	1/008 control room	putty sealant to previous periscope structure	Asbestos-containing mastic	Sample	21054747-073	2.5 Lm	1	2	2	Chrysotile (1)	7	2	R2
HMS Conqueror	1/008 control room	fuseguards to supply fan starters	composite	Cross Reference	21054747-050	Throughout Location	1	1	0	SP Chrysotile	3	2	R3
HMS Conqueror	1/008 Control room	pipework in void above computer suite	Asbestos-containing lagging	Sample	21054747-062	Not Quantifiable	2	2	1	Chrysotile (1)	6	2	R3
HMS Conqueror	1/009 RC tunnel	lining to pipework brackets	woven product	Cross Reference	21054747-063	Throughout Location	2	2	2	SP Chrysotile	7	2	R2
HMS Conqueror	1/009 RC tunnel	residues to black foam lagged pipes (port side)	woven product	Cross Reference	21054747-063	1 Lm visible	2	3	3	SP Chrysotile	9	2	R2
HMS Conqueror	1/009 RC tunnel	pipework	gasket	Cross Reference	21054747-065	Throughout Location	2	1	1	SP Chrysotile	5	2	R3
HMS Conqueror	1/009 RC tunnel	floor covering	vinyl tile (blue) & screeding to deck	Cross Reference	21054747-070					SP Non-Asbestos Fibre			
HMS Conqueror	1/010 manoeuvring room	floor covering	vinyl tile (blue) & screeding to deck	Cross Reference	21054747-070					SP Non-Asbestos Fibre			
HMS Conqueror	1/010 manoeuvring room	pipework	gasket	Cross Reference	21054747-065	Extensive	2	1	1	SP Chrysotile	5	2	R3
HMS Conqueror	1/010 manoeuvring room	lining to structure	cork	Sample	21054747-074					Non-Asbestos Fibre			-
HMS Conqueror	1/010 manoeuvring room	covering to lining to structure	paint	Sample	21054747-075					Non-Asbestos Fibre			-
HMS Conqueror	1/010 manoeuvring room	24 inch diameter low level pipe to port & starboard side (frame 72-88)	lagging	Sample	21054747-076					Non-Asbestos Fibre			-

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	Product Score	Material Condition	Surface Treatment	Fibre Identification	Material Score	Accessibility Score	Risk Level Assessment
HMS Conqueror	1/010 manoeuvring room	covering to 2 inch pipe run stbd side behind machinery	woven product	Cross Reference	21054747-066	Extent Undiscernable	2	2	2	SP Chrysotile	7	2	R2
HMS Conqueror	1/010 manoeuvring room	wrapping to cable inside electrics	woven product	Sample	21054747-077					Non-Asbestos Fibre			-
HMS Conqueror	1/010 manoeuvring room	gasket to air heater duct plates	Asbestos-containing gasket	Sample	21054747-078	4 no.	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	1/010 manoeuvring room	4 inch pipe run by HP store (frame 75)	lagging	Sample	21054747-079					Non-Asbestos Fibre			-
HMS Conqueror	1/011 HP store	within room	no access										-
HMS Conqueror	1/012 EMR	floor covering	vinyl tile (blue) & screeding to deck	Cross Reference	21054747-070					SP Non-Asbestos Fibre			
HMS Conqueror	1/012 EMR	24 inch pipe run low level to port side (frame 85-87)	lagging	Cross Reference	21054747-076					SP Non-Asbestos Fibre			
HMS Conqueror	1/012 EMR	pipework	gasket	Cross Reference	21054747-065	Throughout Location	2	1	1	SP Chrysotile	5	2	R3
HMS Conqueror	1/013 walkway	screed to underside of metal floor plates	Asbestos-containing composite	Sample	21054747-088	10 sqm	1	2	0	Chrysotile (1)	4	2	R3
HMS Conqueror	1/013 Walkway	stair nosing to top of ladder leading to MMS	composite	Sample	21054747-151					Non-Asbestos Fibre			-
HMS Conqueror	1/013 walkway - heater duct area (stbd side)	insulation to 20 inch pipe run extending in MMS	lagging	Cross Reference	21054747-080					SP Non-Asbestos Fibre			
HMS Conqueror	1/013 walkway - heater duct area (stbd side)	insulation to 4 inch pipe run above fuse box (frame 89)	lagging	Sample	21054747-087					Non-Asbestos Fibre			-
HMS Conqueror	1/013 walkway - heater duct area (stbd side)	debris to cables & fuse box	insulation	Cross Reference	21054747-087					SP Non-Asbestos Fibre			

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	Product Score	Material Condition	Surface Treatment	Fibre Identification	Material Score	Accessibility Score	Risk Level Assessment
HMS Conqueror	1/013 walkway - heater duct area (stbd side)	pipework	gasket	Cross Reference	21054747-065	Throughout Location	2	1	1	SP Chrysotile	5	2	R3
HMS Conqueror	1/013 walkway - lobby to heater duct area (stbd side)	insulation to floor penetration	Asbestos-containing insulation	Sample	21054747-085	1 no.	3	2	2	Chrysotile (1)	8	2	R2
HMS Conqueror	1/013 walkway - lobby to heater duct area (stbd side)	insulation to 4 inch pipe run below green valve (frame 88-90)	lagging	Sample	21054747-086					Non-Asbestos Fibre			-
HMS Conqueror	1/013 walkway - lobby to heater duct area (stbd side)	debris to pipe penetration below fire hose	insulation	Cross Reference	21054747-083					SP Non-Asbestos Fibre			
HMS Conqueror	1/013 walkway - lobby to heater duct area (stbd side)	insulation to 4 inch pipe above green valve (frame 88)	insulation	Cross Reference	21054747-082					SP Non-Asbestos Fibre			
HMS Conqueror	1/013 walkway - MMS access ladder area (port side)	insulation to 20 inch pipe run extending in MMS	lagging	Sample	21054747-080					Non-Asbestos Fibre			-
HMS Conqueror	1/013 walkway - MMS access ladder area (port side)	insulation to 4 inch feed pipe (frame 88-90)	lagging	Sample	21054747-081					Non-Asbestos Fibre			-
HMS Conqueror	1/013 walkway - MMS access ladder area (port side)	insulation to 6 pipe run above green valve (frames 88-90)	lagging	Sample	21054747-082					Non-Asbestos Fibre			-
HMS Conqueror	1/013 walkway - MMS access ladder area (port side)	insulation to 4 inch pipe run air treatment unit (frame 88)	lagging	Cross Reference	21054747-082					SP Non-Asbestos Fibre			

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	Product Score	Material Condition	Surface Treatment	Fibre Identification	Material Score	Accessibility Score	Risk Level Assessment
HMS Conqueror	1/013 walkway - MMS access ladder area (port side)	debris to ladders & surfaces	lagging	Sample	21054747-083					Non-Asbestos Fibre			-
HMS Conqueror	1/013 walkway - MMS access ladder area (port side)	fuseguards to electrical boxes	Asbestos-containing composite	Sample	21054747-084	Throughout Location	1	1	0	Chrysotile (1)	4	2	R3
HMS Conqueror	1/014 no.1 spare gear & naval stores	rubber coupling to redundant machinery to floor	composite	Sample	21054747-089					Non-Asbestos Fibre			-
HMS Conqueror	1/014 no.1 spare gear & naval stores	pipework	gasket	Cross Reference	21054747-065	Throughout Location	2	1	1	SP Chrysotile	5	2	R3
HMS Conqueror	1/015 no.2 spare gear & naval stores	gasket residue to redundant equipment to floor	Asbestos-containing gasket	Sample	21054747-090	1 no.	2	2	2	Chrysotile (1)	7	2	R2
HMS Conqueror	1/015 no.2 spare gear & naval stores	rubber coupling to machinery	composite	Cross Reference	21054747-089					SP Non-Asbestos Fibre			
HMS Conqueror	1/016 motor room	gasket to steering hydroplane (frame 117)	Asbestos-containing gasket	Sample	21054747-091	1 no.	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	1/016 motor room	pipework	Asbestos-containing gasket	Sample	21054747-092	Throughout Location	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	1/016 motor room	debris to degaussing cable tray	debris	Sample	21054747-093					Non-Asbestos Fibre			-
HMS Conqueror	1/016 motor room	gasket to ATU's	Asbestos-containing gasket	Sample	21054747-094	Throughout Location	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	1/016 motor room	gasket to plates seals to tanks	Asbestos-containing gasket	Sample	21054747-095	2 no.	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	1/016 motor room	fuseguards to ATU fuse boxes	composite	Cross Reference	21054747-084	Throughout Location	1	1	0	SP Chrysotile	4	2	R3
HMS Conqueror	1/016 motor room	fuseguards to propulsion circuit breaker (port side)	composite	Sample	21054747-098					Non-Asbestos Fibre			-
HMS Conqueror	1/016 motor room - lower level	debris to floor (aft port side - frame 112)	Asbestos-containing gasket	Sample	21054747-096	Small Quantity Observed	2	3	3	Chrysotile (1)	9	2	R2

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	Product Score	Material Condition	Surface Treatment	Fibre Identification	Material Score	Accessibility Score	Risk Level Assessment
HMS Conqueror	1/016 motor room - lower level	residue to bare flange joints	Asbestos-containing gasket	Sample	21054747-097	Throughout Location	2	2	2	Chrysotile (1)	7	2	R2
HMS Conqueror	1/016 motor room - lower level	pipework	gasket	Cross Reference	21054747-092	Throughout Location	2	1	1	SP Chrysotile	5	2	R3
HMS Conqueror	2/001 upper torpedo comparment	floor covering	vinyl tile (green) & screeding to deck	Sample	21054747-001					Non-Asbestos Fibre			-
HMS Conqueror	2/001 upper torpedo comparment	vent duct heaters x2	gasket	Sample	21054747-002					Non-Asbestos Fibre			-
HMS Conqueror	2/001 upper torpedo comparment	covering to cables within vent duct heaters x2	Asbestos-containing woven product	Sample	21054747-003	2 no. heaters	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	2/001 upper torpedo comparment	debris to floor below stbd lifting band stowage	Asbestos-containing gasket	Sample	21054747-004	Small Quantity Observed	2	3	3	Chrysotile (1)	9	2	R2
HMS Conqueror	2/001 upper torpedo comparment	pipework	Asbestos-containing gasket	Sample	21054747-005	Extensive	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	2/001 upper torpedo comparment	covering to 5mm cables within electrical consoles	woven product	Sample	21054747-006					Non-Asbestos Fibre			-
HMS Conqueror	2/001 upper torpedo comparment	debris within electrical console immediately port of entrance door	debris	Sample	21054747-007					Non-Asbestos Fibre			-
HMS Conqueror	2/002 ships office	floor covering	vinyl tile (grey)	Sample	21054747-012					Non-Asbestos Fibre			-
HMS Conqueror	2/002 ships office	gasket putty to flange joints to air handng vents	Asbestos-containing composite	Sample	21054747-013	2 no.	1	1	0	Chrysotile (1)	3	2	R3
HMS Conqueror	2/003 O2 generator compartment	pipework	gasket	Cross Reference	21054747-008	Extensive	2	1	1	SP Chrysotile	5	2	R3
HMS Conqueror	2/003 O2 generator compartment	floor covering	vinyl tile (blue) & screeding to deck	Sample	21054747-014					Non-Asbestos Fibre			-
HMS Conqueror	2/003 O2 generator compartment	insulation to air handling ducting	insulation	Sample	21054747-015					Non-Asbestos Fibre			-

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	Product Score	Material Condition	Surface Treatment	Fibre Identification	Material Score	Accessibility Score	Risk Level Assessment
HMS Conqueror	2/004 SR mess	floor covering	vinyl tile (green) & screeding to deck	Cross Reference	21054747-001					SP Non-Asbestos Fibre			
HMS Conqueror	2/004 SR mess	floor covering	vinyl flooring (blue) & screeding to deck	Sample	21054747-016					Non-Asbestos Fibre			-
HMS Conqueror	2/004 SR mess	sink gasket	gasket	Sample	21054747-017					Non-Asbestos Fibre			-
HMS Conqueror	2/004 SR mess	floor covering below filter B	vinyl tile - black	Sample	21054747-018					Non-Asbestos Fibre			-
HMS Conqueror	2/004 SR mess	lining to hull wall behind mmmf insulation	insulation	Sample	21054747-019					Non-Asbestos Fibre			-
HMS Conqueror	2/004 SR mess	insulation to flange joint below filter B	insulation	Cross Reference	21054747-015					SP Non-Asbestos Fibre			
HMS Conqueror	2/005 galley	lining to fuse box to oven	fire brick	Sample	21054747-020					Non-Asbestos Fibre			-
HMS Conqueror	2/005 galley	gasket to oven door	Asbestos-containing woven product	Sample	21054747-021	1 Lm	2	2	2	Chrysotile (1)	7	2	R2
HMS Conqueror	2/005 galley	unable to dismantle structure	limited access										-
HMS Conqueror	2/005 galley - garbage ejector space	pipework	gasket	Cross Reference	21054747-008	4 no.	2	1	1	SP Chrysotile	5	2	R3
HMS Conqueror	2/006 SR bunk space	floor covering	vinyl tile (green) & screeding to deck	Sample	21054747-022					Non-Asbestos Fibre			-
HMS Conqueror	2/007 JR mess	insulation to cable penetration (frame 54)	Asbestos-containing insulation	Sample	21054747-023	1 no.	3	1	2	Chrysotile (1)	7	2	R2
HMS Conqueror	2/007 JR mess	floor covering	vinyl tile (green) & screeding to deck	Cross Reference	21054747-022					SP Non-Asbestos Fibre			
HMS Conqueror	2/007 JR mess	floor covering	vinyl tile (brown) & screeding to deck	Sample	21054747-024					Non-Asbestos Fibre			-

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	Product Score	Material Condition	Surface Treatment	Fibre Identification	Material Score	Accessibility Score	Risk Level Assessment
HMS Conqueror	2/007 JR mess	pipework	Asbestos-containing gasket	Sample	21054747-027	Extensive	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	2/008 AC compartment	insulation within cable penetration above door way	insulation	Sample	21054747-025					Non-Asbestos Fibre			-
HMS Conqueror	2/008 AC compartment	lining to AC unit beneath cork	insulation	Sample	21054747-026					Non-Asbestos Fibre			-
HMS Conqueror	2/008 AC compartment	insulation within cable penetration to floor (frame 60)	insulation	Cross Reference	21054747-023	1 no.	3	2	2	SP Chrysotile	8	2	R2
HMS Conqueror	2/009 JR bunk space	floor covering	vinyl tile (green) & screeding to deck	Cross Reference	21054747-022					SP Non-Asbestos Fibre			
HMS Conqueror	2/010 main corridor	floor covering	vinyl tile (blue/brown) & screeding to deck	Sample	21054747-028					Non-Asbestos Fibre			-
HMS Conqueror	2/010 main corridor	floor covering in small alcove	vinyl tile (green) & screeding to deck	Cross Reference	21054747-022					SP Non-Asbestos Fibre			
HMS Conqueror	2/011 DG room	glue beneath orange/pink lagging to pipework	composite	Sample	21054747-099					Non-Asbestos Fibre			-
HMS Conqueror	2/011 DG room	gaskets to serck heat transfer plates to AC generator	Asbestos-containing gasket	Sample	21054747-100	4 no.	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	2/011 DG room	gaskets to air heater duct plates & pipework	Asbestos-containing gasket	Sample	21054747-101	5 no. visible	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	2/011 DG room	pipework	Asbestos-containing gasket	Sample	21054747-102	Throughout Location	2	2	1	Chrysotile (1)	6	2	R3
HMS Conqueror	2/011 DG room	gaskets to diesel generator no.2	Asbestos-containing gasket	Sample	21054747-103	Throughout Location	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	2/011 DG room	wrapping to white coloured 0.5inch pipe run behind diesel generator no.2 (frame 83)	Asbestos-containing woven product	Sample	21054747-104	3 Lm visible	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	2/011 DG room	wrapping to brown coloured 0.5inch pipe run behind diesel generator no.2 (frame	woven product	Strongly Presume		1 Lm visible	2	1	2	SP Chrysotile	6	2	R3

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	Product Score	Material Condition	Surface Treatment	Fibre Identification	Material Score	Accessibility Score	Risk Level Assessment
		83)											
HMS Conqueror	2/011 DG room	fuseguards to main electrical supply controls	Asbestos-containing composite	Sample	21054747-105	Throughout Location	1	1	0	Chrysotile (1)	4	2	R3
HMS Conqueror	2/011 DG room	wrapping to 4inch pipe extending radiation area (frame 73)	lagging	Cross Reference	21054747-079					SP Non-Asbestos Fibre			
HMS Conqueror	2/011 DG room	lining to pipework brackets in radiation area	woven product	Cross Reference	21054747-063	Throughout Location	2	2	2	SP Chrysotile	7	2	R2
HMS Conqueror	2/012 MMS	wrapping to 1 inch pipe run - port side frames 98-101	Asbestos-containing woven product	Sample	21054747-122	4Lm	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	2/012 MMS	gaskets to ATU joints and plating	Asbestos-containing gasket	Sample	21054747-123	Throughout Location	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	2/012 MMS	pipework gaskets throughout location	Asbestos-containing gasket	Sample	21054747-124	Throughout Location	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	2/012 MMS	pipe penetration insulation throughout location	Asbestos-containing insulation	Sample	21054747-125	Throughout Location	3	2	3	Amosite (2)	10	2	R1
HMS Conqueror	2/012 MMS	insulation to engine well port side opposite frame 95	lagging	Sample	21054747-126					Non-Asbestos Fibre			-
HMS Conqueror	2/012 MMS	gaskets to engine casing throughout	Asbestos-containing gasket	Sample	21054747-127	Throughout Location	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	2/012 MMS	residues to unlagged engine	lagging	Sample	21054747-128					Non-Asbestos Fibre			-
HMS Conqueror	2/012 MMS	insulation to pipework - port side frames 88-92	lagging	Sample	21054747-129					Non-Asbestos Fibre			-
HMS Conqueror	2/012 MMS	cylinder insulation port side (frames 88-92)	lagging	Sample	21054747-130					Non-Asbestos Fibre			-
HMS Conqueror	2/012 MMS	debris to surfaces throughout - sampled to bracket port side frame 92	debris	Sample	21054747-131					Non-Asbestos Fibre			-

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	Product Score	Material Condition	Surface Treatment	Fibre Identification	Material Score	Accessibility Score	Risk Level Assessment
HMS Conqueror	2/012 MMS	lagging to 20 inch pipe run by ladders to 2 deck	lagging	Sample	21054747-132					Non-Asbestos Fibre			-
HMS Conqueror	2/012 MMS	debris around engine bay	insulation debris	Sample	21054747-133					Non-Asbestos Fibre			-
HMS Conqueror	2/012 MMS	insulation to pipework by bulkhead 88	lagging	Cross Reference	21054747-129					SP Non-Asbestos Fibre			
HMS Conqueror	2/012 MMS	lagging to vertical 20 inch pipe runs by bulkhead 88	lagging	Cross Reference	21054747-132					SP Non-Asbestos Fibre			
HMS Conqueror	2/012 MMS	wrapping to pipework brackets (without silver foil)	Asbestos-containing woven product	Sample	21054747-134	Throughout Location	2	2	2	Chrysotile (1)	7	2	R2
HMS Conqueror	2/012 MMS	debris to walkway	lagging	Sample	21054747-135					Non-Asbestos Fibre			-
HMS Conqueror	2/012 MMS	debris to pipework	lagging	Sample	21054747-136					Non-Asbestos Fibre			-
HMS Conqueror	2/012 MMS	insulation to pipes from lagged engine	lagging	Sample	21054747-137					Non-Asbestos Fibre			-
HMS Conqueror	2/012 MMS	insulation to lagged engine	lagging	Sample	21054747-138					Non-Asbestos Fibre			-
HMS Conqueror	2/012 MMS	wrapping to lamp/torch handle to aft	woven product	Sample	21054747-139					Non-Asbestos Fibre			-
HMS Conqueror	2/012 MMS	insultion to pipe runs by stbd cylinder tank (frame 88-91)	lagging	Sample	21054747-140					Non-Asbestos Fibre			-
HMS Conqueror	2/012 MMS	debris to surfaces	lagging	Sample	21054747-141					Non-Asbestos Fibre			-
HMS Conqueror	2/012 MMS	insulation to stbd side cylinder tank (frames 88-92)	lagging	Cross Reference	21054747-130					SP Non-Asbestos Fibre			
HMS Conqueror	2/012 MMS	fuseguards within electrical boxes	composite	Cross Reference	21054747-105	Throughout Location	1	1	0	SP Chrysotile	4	2	R3
HMS Conqueror	2/012 MMS	pipe penetration insulation throughout location	Asbestos-containing insulation	Sample	21054747-125	Throughout Location	3	2	3	Chrysotile (1)	9	2	R2

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	Product Score	Material Condition	Surface Treatment	Fibre Identification	Material Score	Accessibility Score	Risk Level Assessment
HMS Conqueror	2/012 MMS - floor void near ladders to 1 deck	turbines lagging - 2no.	lagging	Sample	21054747-142					Non-Asbestos Fibre			-
HMS Conqueror	2/012 MMS - floor void near ladders to 1 deck	debris beneath engines	debris	Cross Reference	21054747-133					SP Non-Asbestos Fibre			
HMS Conqueror	3/001 lower torpedo comparment	floor covering	vinyl tile (green) & screeding to deck	Cross Reference	21054747-001					SP Non-Asbestos Fibre			
HMS Conqueror	3/001 lower torpedo comparment	pipework	Asbestos-containing gasket	Sample	21054747-008	Extensive	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	3/001 lower torpedo comparment	insulation to CO burner (port side)	insulation	Sample	21054747-009					Non-Asbestos Fibre			-
HMS Conqueror	3/001 lower torpedo comparment	debris to floor surrounding CO burner	debris	Sample	21054747-010					Non-Asbestos Fibre			-
HMS Conqueror	3/001 lower torpedo comparment	debris to void below torpedo chutes	Asbestos-containing gasket	Sample	21054747-011	Small Quantity Observed	2	3	3	Chrysotile (1)	9	2	R2
HMS Conqueror	3/002 electrolyser space	covering to desk next to control panel	vinyl tile (blue)	Sample	21054747-031					Non-Asbestos Fibre			-
HMS Conqueror	3/002 electrolyser space	covering to desk stbd side	vinyl tile (black)	Sample	21054747-032					Non-Asbestos Fibre			-
HMS Conqueror	3/002 electrolyser space	pipework	gasket	Cross Reference	21054747-008	Extensive	2	1	1	SP Chrysotile	5	2	R3
HMS Conqueror	3/003 sonar cab space	floor covering	vinyl flooring (black) & screeding to deck	Sample	21054747-033					Non-Asbestos Fibre			-
HMS Conqueror	3/004 HP lab	floor covering	vinyl flooring (black)	Cross Reference	21054747-033					SP Non-Asbestos Fibre			
HMS Conqueror	3/004 HP lab	floor covering in stairwell lobby	vinyl tile (green) & screeding to deck	Cross Reference	21054747-022					SP Non-Asbestos Fibre			
HMS Conqueror	3/005 JR bathroom	pipework	Asbestos-containing gasket	Sample	21054747-034	Extensive	2	1	1	Chrysotile (1)	5	2	R3

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	Product Score	Material Condition	Surface Treatment	Fibre Identification	Material Score	Accessibility Score	Risk Level Assessment
HMS Conqueror	3/005 JR bathroom	gasket to black wall heater fuse box	Asbestos-containing gasket	Sample	21054747-035	1 no.	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	3/006 laundry	pipework	gasket	Cross Reference	21054747-034	Extensive	2	1	1	SP Chrysotile	5	2	R3
HMS Conqueror	3/006 laundry	small gasket behind nuts to pump	gasket	Sample	21054747-036					Non-Asbestos Fibre			-
HMS Conqueror	3/007 SR bathroom	gasket to black wall heater fuse box	gasket	Cross Reference	21054747-035	1 no.	2	1	1	SP Chrysotile	5	2	R3
HMS Conqueror	3/008 SINS compartment	floor covering	vinyl flooring (black)	Cross Reference	21054747-033					SP Non-Asbestos Fibre			
HMS Conqueror	3/009 no.1 dry provisions store	floor covering	vinyl tile (grey) & screeding to deck	Sample	21054747-037					Non-Asbestos Fibre			-
HMS Conqueror	3/009 no.1 dry provisions store	pipework	Asbestos-containing gasket	Sample	21054747-038	Extensive	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	3/010 refridgeration machinery space	pipework	gasket	Cross Reference	21054747-038	Extensive	2	1	1	SP Chrysotile	5	2	R3
HMS Conqueror	3/011 cold & cool rooms	putty sealant to metal wall panels & penetrations	Asbestos-containing mastic	Sample	21054747-039	Extensive	1	1	0	Chrysotile (1)	3	2	R3
HMS Conqueror	3/012 lobby	floor covering	vinyl tile (blue/brown) & screeding to deck	Cross Reference	21054747-028					SP Non-Asbestos Fibre			
HMS Conqueror	3/012 lobby	pipework	gasket	Cross Reference	21054747-038	Extensive	2	1	1	SP Chrysotile	5	2	R3
HMS Conqueror	3/012 lobby	fuseguards to battery contactor boxes x2	Asbestos-containing composite	Sample	21054747-040	4 no.	1	1	0	Chrysotile (1)	3	2	R3
HMS Conqueror	3/013 radar office	floor covering	vinyl flooring (blue) & first layer of screed	Sample	21054747-041					Non-Asbestos Fibre			-
HMS Conqueror	3/013 radar office	subfloor	vinyl flooring (grey) & screeding to deck	Sample	21054747-042					Non-Asbestos Fibre			-

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	Product Score	Material Condition	Surface Treatment	Fibre Identification	Material Score	Accessibility Score	Risk Level Assessment
HMS Conqueror	3/013 radar office	covering to store cupboard	vinyl tile	Sample	21054747-043					Non-Asbestos Fibre			-
HMS Conqueror	3/014 WT office	floor covering	vinyl flooring (grey) & screeding to deck	Sample	21054747-044					Non-Asbestos Fibre			-
HMS Conqueror	3/015 amp space	floor covering	vinyl flooring (grey) & screeding to deck	Cross Reference	21054747-044					SP Non-Asbestos Fibre			
HMS Conqueror	3/015 amp space	pipework	Asbestos-containing gasket	Sample	21054747-045	Extensive	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	3/015 amp space	fuseguards to rectifier	composite	Cross Reference	21054747-040	Throughout Location	1	1	0	SP Chrysotile	3	2	R3
HMS Conqueror	3/016 lobby	sealant to periscope well heating	mastic	Sample	21054747-046					Non-Asbestos Fibre			-
HMS Conqueror	3/016 lobby	floor covering	vinyl tile (brown/blue) & screeding to deck	Sample	21054747-047					Non-Asbestos Fibre			-
HMS Conqueror	3/016 lobby	floor covering beneath cable trunking to aft	vinyl tile (black)	Sample	21054747-048					Non-Asbestos Fibre			-
HMS Conqueror	3/016 lobby	pipework	gasket	Cross Reference	21054747-045	Extensive	2	1	1	SP Chrysotile	5	2	R3
HMS Conqueror	3/016 lobby	insulation to cable penetration (frame 60)	insulation	Sample	21054747-049					Non-Asbestos Fibre			-
HMS Conqueror	3/016 lobby	floor covering to raised platform by ladder	vinyl tile (blue) & screeding to floor plates	Sample	21054747-052					Non-Asbestos Fibre			-
HMS Conqueror	3/017 CO2 scrubber space	pipework	gasket	Cross Reference	21054747-045	Extensive	2	1	1	SP Chrysotile	5	2	R3
HMS Conqueror	3/017 CO2 scrubber space	fuseguards to LP blower unit fuse boards	Asbestos-containing composite	Sample	21054747-050	Throughout Location	1	1	0	Chrysotile (1)	3	2	R3
HMS Conqueror	3/017 CO2 scrubber space	subfloor	screeding to deck	Sample	21054747-051					Non-Asbestos Fibre			-

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	Product Score	Material Condition	Surface Treatment	Fibre Identification	Material Score	Accessibility Score	Risk Level Assessment
HMS Conqueror	3/018 TG room	pink debris to surfaces throughout - (sampled port side frames 84-88)	debris	Sample	21054747-106					Non-Asbestos Fibre			-
HMS Conqueror	3/018 TG room	pink lagging to 4 inch pipes throughout (sampled port side frames 84-88)	lagging	Sample	21054747-107					Non-Asbestos Fibre			-
HMS Conqueror	3/018 TG room	white lagging 4 inch pipes throughout (sampled port side frames 84-88)	lagging	Sample	21054747-108					Non-Asbestos Fibre			-
HMS Conqueror	3/018 TG room	debris to instrument panel port side frame 88	debris	Sample	21054747-109					Non-Asbestos Fibre			-
HMS Conqueror	3/018 TG room	lagging to 4 inch pipe run flange joint casings throughout	lagging	Sample	21054747-110					Non-Asbestos Fibre			-
HMS Conqueror	3/018 TG room	pipework gaskets throughout location	Asbestos-containing gasket	Sample	21054747-111	Throughout Location	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	3/018 TG room	fuseguards to trim pump fuse box	Asbestos-containing composite	Sample	21054747-112	Throughout Location	1	1	0	Chrysotile (1)	3	2	R3
HMS Conqueror	3/018 TG room	air heater units - gaskets	gasket	Cross Reference	21054747-101	Throughout Location	2	1	1	SP Chrysotile	5	2	R3
HMS Conqueror	3/018 TG room	pipe lagging to 20 inch pipe from generators to machinery space	lagging (tri-coloured)	Sample	21054747-113					Non-Asbestos Fibre			-
HMS Conqueror	3/018 TG room	debris to air compression pipework - port side frames 72-75	debris	Sample	21054747-114					Non-Asbestos Fibre			-
HMS Conqueror	3/018 TG room	lagging to 1 inch pipes coming from generators - port side frame 74	lagging	Sample	21054747-115					Non-Asbestos Fibre			-
HMS Conqueror	3/018 TG room	insulation to main generators - 2no.	Asbestos-containing insulation	Sample	21054747-116					Non-Asbestos Fibre			-
HMS Conqueror	3/018 TG room	gaskets to 2no. main generators	Asbestos-containing gasket	Sample	21054747-117	Throughout Location	2	1	1	Chrysotile (1)	5	2	R3
HMS Conqueror	3/018 TG room	lining to pipework brackets throughout	Asbestos-containing woven	Sample	21054747-118	Throughout Location	2	1	2	Chrysotile (1)	6	2	R3

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	Product Score	Material Condition	Surface Treatment	Fibre Identification	Material Score	Accessibility Score	Risk Level Assessment
			product										
HMS Conqueror	3/018 TG room	gasket debris to floor void	Asbestos-containing gasket	Sample	21054747-119	Throughout Location	2	3	2	Chrysotile (1)	8	2	R2
HMS Conqueror	3/018 TG room	debris around main generators	debris	Sample	21054747-120					Non-Asbestos Fibre			-
HMS Conqueror	3/018 TG room	debris to walkway around generators	debris	Sample	21054747-121					Non-Asbestos Fibre			-
HMS Conqueror	4/001 MMS	pipe lagging adjacent starboard ladder	lagging	Sample	21054747-143					Non-Asbestos Fibre			-
HMS Conqueror	4/001 MMS	debris to walkway adjacent starboard ladder	debris - lagging	Sample	21054747-144					Non-Asbestos Fibre			-
HMS Conqueror	4/001 MMS	debris to floor & surfaces	lagging	Sample	21054747-145					Non-Asbestos Fibre			-
HMS Conqueror	4/001 MMS	debris to pipes, brackets & ledges	lagging	Sample	21054747-146					Non-Asbestos Fibre			-
HMS Conqueror	4/001 MMS	packing to penetration to above tanks to lowered area (frame 90)	lagging	Sample	21054747-147					Non-Asbestos Fibre			-
HMS Conqueror	4/001 MMS	debris to pipework around engine	lagging	Sample	21054747-148					Non-Asbestos Fibre			-
HMS Conqueror	4/001 MMS	pipework	Asbestos-containing gasket	Sample	21054747-149	Throughout Location	2	2	1	Chrysotile (1)	6	2	R3
HMS Conqueror	4/001 MMS	insulation to base of engines	lagging	Cross Reference	21054747-138					SP Non-Asbestos Fibre			
HMS Conqueror	4/001 MMS	insulation to pipework adj port stairwell	lagging	Cross Reference	21054747-143					SP Non-Asbestos Fibre			
HMS Conqueror	4/001 MMS	insulation to pipework to engines	lagging	Cross Reference	21054747-137					SP Non-Asbestos Fibre			
HMS Conqueror	4/002 Slop tank room	pipework gaskets throughout	Asbestos-containing gasket	Sample	21054747-150	Throughout Location	2	1	1	Chrysotile (1)	5	2	R3

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	Product Score	Material Condition	Surface Treatment	Fibre Identification	Material Score	Accessibility Score	Risk Level Assessment
HMS Conqueror	4/002 Slop tank room	fuseguards to electrical boxing	composite	Cross Reference	21054747-112	Throughout Location	1	1	0	SP Chrysotile	3	2	R3
HMS Conqueror	9/999 externals	casing – where access allowed	no asbestos observed										-
HMS Conqueror	Throughout HMS Conqueror	all electrical equipment	limited access										-
HMS Conqueror	Throughout HMS Conqueror	consealed spaces behind machinery/equipment	limited access										-
HMS Conqueror	Throughout HMS Conqueror	void spaces behind fixed furniture	limited access										-
HMS Conqueror	Throughout HMS Conqueror	void spaces behind fixed metal partitions	limited access										-
HMS Conqueror	Throughout HMS Conqueror	areas unsafe to access	limited access										-
HMS Conqueror	Throughout HMS Conqueror	all restricted radiation areas	no access										-

Survey Inspection Detail, Sample Test Report and Risk Level Assessment Report

Areas Excluded & Not Fully Accessed During Survey

Due to the structure and integral nature of the vessel, some inherent survey limitations were encountered. Whilst where possible, every effort was made to carry out a full access type 3 survey, certain areas within the vessel were not able to be fully inspected. This could be to do with reasons of health and safety, live service supply to electrics, or just simply reasons of confined space. Below is a list of the most common causes of access limitations:

- Electrical equipment where a live power supply was still in service
- Concealed spaces behind structural apparatus (where units/consoles/items of structure were welding to the deck and unable to move)
- Void spaces behind fixed furniture (this included some areas of partition walls and ceilings where the steel panelling had been riveted/bolted in place)
- Areas that were deemed as unsafe to access. This could include confined spaces, or areas of radioactivity where warning signs were clearly displayed
- Areas beyond the scope of works (tanks, inner hull linings where welding/cutting would be required to gain access, inside equipment/machinery)
- External areas between inner and outer hull, informed to be flood compartments when in use
- Areas specifically hi lighted by the client prior to works commencing (items of historical interest)

Vessel Description	Location	Item / Product Examined	Accessibility	Surveyor Additional Comments At Time Of Survey
HMS Conqueror	1/006 Sonar Room	Port side behind partition	Limited Access	confined space
HMS Conqueror	1/011 HP store	within room	No Access	reasons of health and safety - controlled radiation area
HMS Conqueror	2/005 galley	unable to dismantle structure	Limited Access	within galley
HMS Conqueror	2/011 DG room	wrapping to brown coloured 0.5inch pipe run behind diesel generator no.2 (frame 83)	Limited Access	unable to access
HMS Conqueror	2/012 MMS - floor void near ladders to 1 deck	debris beneath engines	Limited Access	confined space
HMS Conqueror	9/999 externals	casing – where access allowed	Limited Access	reasons of health and safety
HMS Conqueror	Throughout HMS Conqueror	all electrical equipment	Limited Access	live service supply
HMS Conqueror	Throughout HMS Conqueror	consealed spaces behind machinery/equipment	Limited Access	confined space
HMS Conqueror	Throughout HMS Conqueror	void spaces behind fixed furniture	Limited Access	confined space
HMS Conqueror	Throughout HMS Conqueror	void spaces behind fixed metal partitions	Limited Access	unable to remove
HMS Conqueror	Throughout HMS Conqueror	areas unsafe to access	Limited Access	reasons of health and safety
HMS Conqueror	Throughout HMS Conqueror	all restricted radiation areas	Limited Access	reasons of health and safety

Areas Excluded & Not Fully Accessed During Survey

Management Recommendation Detail

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R1	HMS Conqueror	1/006 Sonar Room	insulation to duct behind stbd wall behind partition	Asbestos-containing insulation	21054747-058	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R1	HMS Conqueror	2/012 MMS	pipe penetration insulation throughout location	Asbestos-containing insulation	21054747-125	remove	
R2	HMS Conqueror	1/006 Sonar Room	covering to duct behind stbd wall partition	Asbestos-containing woven product	21054747-071	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R2	HMS Conqueror	1/008 Control room	pipework in void above computer suite	Asbestos-containing lagging	21054747-062	remove	
R2	HMS Conqueror	1/008 Control room	pipework above depth gauge	Asbestos-containing gasket	21054747-065	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R2	HMS Conqueror	1/008 control room	putty sealant to previous periscope structure	Asbestos-containing mastic	21054747-073	remove	
R2	HMS Conqueror	1/009 RC tunnel	lining to pipework brackets	woven product	21054747-063	remove	
R2	HMS Conqueror	1/009 RC tunnel	residues to black foam lagged pipes (port side)	woven product	21054747-063	remove	
R2	HMS Conqueror	1/010 manoeuvring room	covering to 2 inch pipe run stbd side behind machinery	woven product	21054747-066	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R2	HMS Conqueror	1/013 walkway - lobby to heater duct area (stbd side)	insulation to floor penetration	Asbestos-containing insulation	21054747-085	remove	
R2	HMS Conqueror	1/015 no.2 spare gear & naval stores	gasket residue to redundant equipment to floor	Asbestos-containing gasket	21054747-090	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R2	HMS Conqueror	1/016 motor room - lower level	debris to floor (aft port side - frame 112)	Asbestos-containing gasket	21054747-096	remove	
R2	HMS Conqueror	1/016 motor room - lower level	residue to bare flange joints	Asbestos-containing gasket	21054747-097	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R2	HMS Conqueror	2/001 upper torpedo comparment	debris to floor below stbd lifting band stowage	Asbestos-containing gasket	21054747-004	remove	
R2	HMS Conqueror	2/005 galley	gasket to oven door	Asbestos-containing woven product	21054747-021	remove	

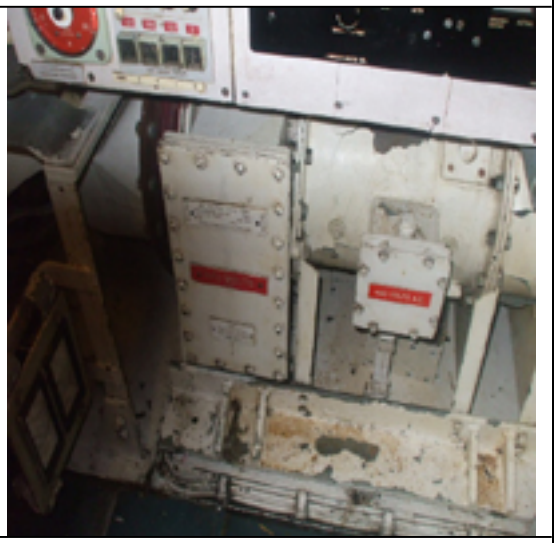
Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R2	HMS Conqueror	2/007 JR mess	insulation to cable penetration (frame 54)	Asbestos-containing insulation	21054747-023	remove	
R2	HMS Conqueror	2/008 AC compartment	insulation within cable penetration to floor (frame 60)	insulation	21054747-023	remove	
R2	HMS Conqueror	2/011 DG room	lining to pipework brackets in radiation area	woven product	21054747-063	remove	
R2	HMS Conqueror	2/012 MMS	wrapping to pipework brackets (without silver foil)	Asbestos-containing woven product	21054747-134	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R2	HMS Conqueror	3/001 lower torpedo comparment	debris to void below torpedo chutes	Asbestos-containing gasket	21054747-011	remove	
R2	HMS Conqueror	3/018 TG room	gasket debris to floor void	Asbestos-containing gasket	21054747-119	remove	
R3	HMS Conqueror	01/001 Conning Tower	gaskets to pipework flanges - throughout location	gaskets	21054747-150	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	1/001 dry provision store	putty sealant to floor	Asbestos-containing composite	21054747-030	remove	
R3	HMS Conqueror	1/007 Co Cabin	High level pipe flange in shower area	Asbestos-containing gasket	21054747-056	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	1/008 Control room	pipe work bracket behind redundant computers, starboard side	Asbestos-containing woven product	21054747-063	remove	
R3	HMS Conqueror	1/008 Control room	pipework	Asbestos-containing gasket	21054747-064	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	1/008 Control room	large pipe run behind water tank	Asbestos-containing woven product	21054747-066	remove	
R3	HMS Conqueror	1/008 control room	fuseguards to supply fan starters	composite	21054747-050	remove	
R3	HMS Conqueror	1/009 RC tunnel	pipework	gasket	21054747-065	remove	
R3	HMS Conqueror	1/010 manoeuvring room	pipework	gasket	21054747-065	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	1/010 manoeuvring room	gasket to air heater duct plates	Asbestos-containing gasket	21054747-078	remove	
R3	HMS Conqueror	1/012 EMR	pipework	gasket	21054747-065	remove	
R3	HMS Conqueror	1/013 walkway	screed to underside of metal floor plates	Asbestos-containing composite	21054747-088	remove	
R3	HMS Conqueror	1/013 walkway - heater duct	pipework	gasket	21054747-065	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
		area (stbd side)					
R3	HMS Conqueror	1/013 walkway - MMS access ladder area (port side)	fuseguards to electrical boxes	Asbestos-containing composite	21054747-084	remove	
R3	HMS Conqueror	1/014 no.1 spare gear & naval stores	pipework	gasket	21054747-065	remove	
R3	HMS Conqueror	1/016 motor room	gasket to steering hydroplane (frame 117)	Asbestos-containing gasket	21054747-091	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	1/016 motor room	pipework	Asbestos-containing gasket	21054747-092	remove	
R3	HMS Conqueror	1/016 motor room	gasket to ATU's	Asbestos-containing gasket	21054747-094	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	1/016 motor room	gasket to plates seals to tanks	Asbestos-containing gasket	21054747-095	remove	
R3	HMS Conqueror	1/016 motor room	fuseguards to ATU fuse boxes	composite	21054747-084	remove	
R3	HMS Conqueror	1/016 motor room - lower level	pipework	gasket	21054747-092	remove	
R3	HMS Conqueror	2/001 upper torpedo comparment	covering to cables within vent duct heaters x2	Asbestos-containing woven product	21054747-003	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	2/001 upper torpedo comparment	pipework	Asbestos-containing gasket	21054747-005	remove	
R3	HMS Conqueror	2/002 ships office	gasket putty to flange joints to air handng vents	Asbestos-containing composite	21054747-013	remove	
R3	HMS Conqueror	2/003 O2 generator compartment	pipework	gasket	21054747-008	remove	
R3	HMS Conqueror	2/005 galley - garbage ejector	pipework	gasket	21054747-008	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
		space					
R3	HMS Conqueror	2/007 JR mess	pipework	Asbestos-containing gasket	21054747-027	remove	
R3	HMS Conqueror	2/011 DG room	gaskets to serck heat transfer plates to AC generator	Asbestos-containing gasket	21054747-100	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	2/011 DG room	gaskets to air heater duct plates & pipework	Asbestos-containing gasket	21054747-101	remove	
R3	HMS Conqueror	2/011 DG room	pipework	Asbestos-containing gasket	21054747-102	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	2/011 DG room	gaskets to diesel generator no.2	Asbestos-containing gasket	21054747-103	remove	
R3	HMS Conqueror	2/011 DG room	wrapping to white coloured 0.5inch pipe run behind diesel generator no.2 (frame 83)	Asbestos-containing woven product	21054747-104	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	2/011 DG room	wrapping to brown coloured 0.5inch pipe run behind diesel generator no.2 (frame 83)	woven product		remove	
R3	HMS Conqueror	2/011 DG room	fuseguards to main electrical supply controls	Asbestos-containing composite	21054747-105	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	2/012 MMS	wrapping to 1 inch pipe run - port side frames 98-101	Asbestos-containing woven product	21054747-122	remove	
R3	HMS Conqueror	2/012 MMS	gaskets to ATU joints and plating	Asbestos-containing gasket	21054747-123	remove	

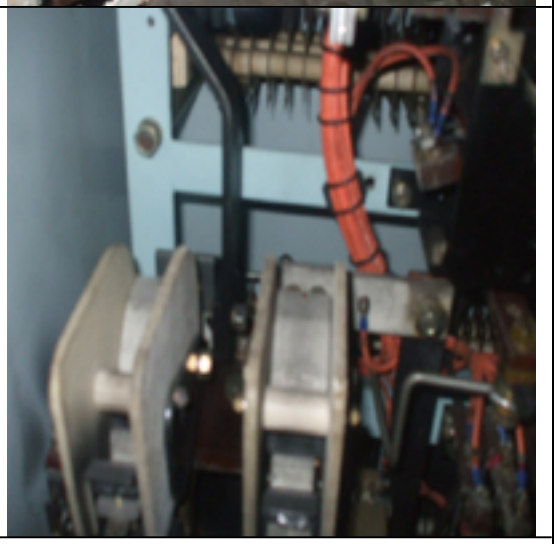
Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	2/012 MMS	pipework gaskets throughout location	Asbestos-containing gasket	21054747-124	remove	
R3	HMS Conqueror	2/012 MMS	gaskets to engine casing throughout	Asbestos-containing gasket	21054747-127	remove	
R3	HMS Conqueror	2/012 MMS	fuseguards within electrical boxes	composite	21054747-105	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	3/001 lower torpedo comparment	pipework	Asbestos-containing gasket	21054747-008	remove	
R3	HMS Conqueror	3/002 electrolyser space	pipework	gasket	21054747-008	remove	
R3	HMS Conqueror	3/005 JR bathroom	pipework	Asbestos-containing gasket	21054747-034	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	3/005 JR bathroom	gasket to black wall heater fuse box	Asbestos-containing gasket	21054747-035	remove	
R3	HMS Conqueror	3/006 laundry	pipework	gasket	21054747-034	remove	
R3	HMS Conqueror	3/009 no.1 dry provisions store	pipework	Asbestos-containing gasket	21054747-038	remove	
R3	HMS Conqueror	3/010 refridgeration machinery	pipework	gasket	21054747-038	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
		space					
R3	HMS Conqueror	3/011 cold & cool rooms	putty sealant to metal wall panels & penetrations	Asbestos-containing composite	21054747-039	remove	
R3	HMS Conqueror	3/012 lobby	pipework	gasket	21054747-038	remove	
R3	HMS Conqueror	3/012 lobby	flashguards to battery contactor boxes x2	Asbestos-containing composite	21054747-040	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	3/015 amp space	pipework	Asbestos-containing gasket	21054747-045	remove	
R3	HMS Conqueror	3/015 amp space	fuseguards to rectifier	composite	21054747-040	remove	
R3	HMS Conqueror	3/016 lobby	pipework	gasket	21054747-045	remove	
R3	HMS Conqueror	3/017 CO2 scrubber space	fuseguards to LP blower unit fuse boards	Asbestos-containing composite	21054747-050	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	3/018 TG room	pipework gaskets throughout location	Asbestos-containing gasket	21054747-111	remove	
R3	HMS Conqueror	3/018 TG room	fuseguards to trim pump fuse box	Asbestos-containing composite	21054747-112	remove	
R3	HMS Conqueror	3/018 TG room	air heater units - gaskets	gasket	21054747-101	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	3/018 TG room	gaskets to 2no. main generators	Asbestos-containing gasket	21054747-117	remove	
R3	HMS Conqueror	3/018 TG room	lining to pipework brackets throughout	Asbestos-containing woven product	21054747-118	remove	

Risk Level Assessment	Vessel	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
R3	HMS Conqueror	4/001 MMS	pipework	Asbestos-containing gasket	21054747-149	remove	
R3	HMS Conqueror	4/002 Slop tank room	pipework gaskets throughout	Asbestos-containing gasket	21054747-150	remove	
R3	HMS Conqueror	4/002 Slop tank room	composite flash guards to electrical boxing	composite	21054747-112	remove	

Management Recommendation Detail

Additional Advice and Information

Depending on the information and findings in this report, you may require some additional advice or resources. Lucion can assist you in the development of your asbestos management plan and advise on the best course of action. However, the ultimate aim of any management plan must be the prevention of exposure to personnel working on your premises. You should therefore make this register available for consultation and keep it regularly updated. Publications relating to the Control of Asbestos Regulations (2006) suggest annual reinspection.

If you intend adding these records to an existing system, e.g. permit to work scheme, we will be pleased to give you any necessary information in a digital format (including images and data records).

Lucion can also offer you our tailored online asbestos register package. This unique software will allow you to track all of your asbestos and securely archive all of the records that will inevitably accompany them, resulting in a robust audit trail for all your asbestos. Our online register can also ensure complete compliance with the duty to manage regulations. If you would like some more information on this or any of our other services, please do not hesitate to contact us.

FULL DEPTH SURVEY REPORT – POLYCHLORINATED BIPHENYLS

HMS Conqueror

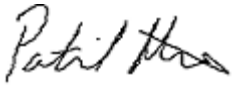
(Devonport Royal Dockyard,)
Lucion Report No.: 21054747
Lucion Report Issue Date: 03 March 2010

lucion environmental

Head Office
7 Halifax Court
Dunston
Gateshead
NE11 9JT

T: 0191 461 8999
E: enquiries@lucion.co.uk
www.lucion.co.uk

Report Summary

Works detailed within report commissioned by	Babcock Marine
Lucion Environmental Ltd report number	21054747
Survey type	Polychlorinated Biphenlys
Premises surveyed	HMS Conqueror, Devenport Royal Dockyard.
Surveyor	Mr Philip M. Rozier BSc. (Hons); Mr Adam Mead; Mr Daniel Scott;
Surveyor signature	
Survey Date	1/12/2010 8:27:00 AM
Bulk sample analysis location	Derwentside Environmental Testing Services
Analyst	Rob Brown, DETS
Analysis date	2010/02/05
Report approver	Dr Patrick A.J. Morton BSc. (Hons) Quality Manager
Approved signature	
Approval date	03 March 2010

Reporting Detail

Total Number of Survey Items Examined	15
Total Number of PCB Containing Materials	5

Survey Summary

Report Contents:

Report Contents

Introduction

This report aims to:

- Outline the sample testing and inspection methodology employed by Lucion Environmental Ltd and Derwentside Environmental Testing Services
- Detail survey findings
- Serve as a reference document to assist in making further steps towards the management of any PCB containing materials
- Form a PCB Register

Vessels Included in Survey Scope

Every effort has been made to identify all PCB materials so far as was reasonably practical to do so within the scope of the survey and the attached report. Methods used to carry out the survey were agreed with the client prior to any works being commenced.

Survey techniques used involves trained and experienced surveyors using the combined approach with regard to visual examination and necessary bulk sampling. It is always possible after a survey that PCB based materials of one sort or another may remain in the vessel or area covered by that survey, this could be due to various reasons:

PCB materials existing within areas not specifically covered by this report are therefore outside the scope of the survey.
Materials may be hidden or obscured by other items or cover finishes i.e paint, over boarding, disguising etc. where this is the case then its detection will be impaired.
PCB may well be hidden as part of the structure to a building and not visible until the structure is dismantled at a later date.
This survey will detail all areas accessed and all samples taken, where an area is not covered by this survey it will be due to No Access for one reason or another i.e working operatives, sensitive location or just simply no access. It may have been necessary for the limits of the surveyor's authority to be confirmed prior to the survey.
Access for the survey may be restricted for many reasons beyond our control such as height, inconvenience to others, immovable obstacles or confined space. Where electrical equipment is present and presumed in the way of the survey no access will be attempted until proof of its safe state is given. Our operatives have a duty of care under the Health and Safety at Work act (1974) for both themselves and others.
In the vessel where PCB has been located and it is clear that not all areas have been investigated, any material that is found to be suspicious and not detailed as part of the survey should be treated with caution and sampled accordingly.
Where a survey is carried out under the guidance of the owner of the vessel, or his representative, then the survey will be as per his instructions and guidance at that time.

Lucion Environmental Ltd cannot accept any liability for loss, injury, damage or penalty issues due to errors or omissions within this report. Lucion Environmental Ltd cannot be held responsible for any damage caused as part of this survey carried out on your behalf. Due to the nature and necessity of sampling for PCB some damage is unavoidable and will be limited to just that necessary for the taking of the sample.

Table “areas excluded and not fully accessed during survey” gives details of those vessels, locations and items not accessed at the time of the survey (where appropriate, and if all areas were fully accessed, no items are listed).

In addition to those items listed in table “area excluded or not fully accessed during survey”, Lucion does not routinely investigate certain items during the course of a PCB survey and so no specific mention of their exclusion is made. Typically such items may include, but are not restricted to:

Live electrical systems and apparatus; live heater units; live lift machinery; live hot ovens and steam systems
Moving plant and equipment
Unsafe heights
Open sewers or effluent drains; chemical and biological material handling systems; areas of insect or animal Infestation; confined spaces or areas of potentially hazardous environment
Due to unacceptable levels of damage to structures and decorative surfaces, access is not normally gained to:

Voids to wall Linings and partitions; Voids to cavities
Enclosed ceiling voids; Enclosed floor voids and spaces
Service ducts and boxing without accessible service hatches

Where investigation of an intrusive nature (within the scope of the survey being performed) is needed to discern the presence of a material and the vessel is occupied during the inspection the level of intrusion may be restricted. As far as is reasonably practicable such restrictions will be indicated within the “areas excluded & not fully accessed during survey” section of this report. Scenarios leading to intrusion restriction may [by way of example] include (but are not limited to) security integrity of the vessel, significant damage to decorative finishes, risk to the structural integrity of the vessel, occupation within adjacent areas. Investigations undertaken in such situations may, through circumstantial restrictions, be incomplete. Further investigation works may be required once unrestricted access can be offered.

Survey Methodology

The PCB survey findings detailed in this report were gathered using documented in house inspection (TOP01.01) and sampling procedures (TOP01.02)

Lucion specific methodology

Basic Level Survey: Location and Assessment (Presumptive)

The purpose of the Basic Level Survey is solely to locate the presence and extent of suspect PCB Containing materials without sampling any of the materials encountered. As no samples are taken all materials which can reasonably be expected to contain PCB must be presumed to do so. Materials, which are visually assessed as PCB containing, will be strongly presumed to do so. This type of survey essentially defers the sampling of materials suspected to contain PCB until a later date. In addition, the duty holder risks bearing management costs of materials that must be presumed to contain PCB but may be found not to, following later sampling and analysis. In short, Basic Level surveys are not routinely recommended but can have application where sampling of materials may be unrealistic under the prevailing circumstances. If a new build vessel, or an operational ship, live cables and electric components can not be sampled due to the live nature of the units. It should be realised that the limited nature of this survey must be reflected in any management plan implemented.

Nominal Level Survey: Standard Sampling and Identification

The underlying purpose and inspection methodology of the Nominal Level Survey is as that of the Basic Level survey. However, where possible, representative samples of materials suspected by the surveyor to contain PCB are taken and analysed for the presence and type of PCB. This survey type is suitable for integration into a plan for the management of PCB where isolation to power systems is available.

Full Depth Level Survey: Full Access, Sampling and Identification

The Full Depth survey is fully intrusive (as far as is reasonably practicable) and is aimed at locating all PCB containing materials within a survey area. Normally, unless otherwise specified, it involves fully invasive and possibly destructive investigation of all survey areas, in order to locate and assess all materials suspected as containing PCB. The survey records only the location and estimated extent of PCB containing materials. This type of survey is normally recommended prior to decommissioning/recycling/ major refurbishment work commencing in the survey area.

Survey Methodology – Important Notes

Reasonable Skill and Care

Although all survey areas that have been examined are reported in accordance with Lucion Environmental Ltd's documented in house procedures (for the specified survey type) and all reasonable skill and care has been exercised by the surveyor in doing so, it must be realised that no survey can reasonably guarantee beyond doubt that all PCB containing materials have been located. Reasons for this limitation may include health and safety issues, reasons of practicality, non-access to live equipment and dangerous or contaminated environments or risk of unsafe levels of damage being inflicted on the survey area amongst others, or the location of the material being outside the investigative scope of the survey type undertaken.

Sampling of Materials

If access to the material permits, a representative sample of the material is taken according to the "sampling strategy". As no practical sampling strategy can be assured as being entirely representative of the circumstances encountered during surveying, care should be exercised when interpreting results. That is to say that if works are planned that may cause disturbance or require the removal of PCB containing materials, implementation of a more intense sampling regime may be desirable.

Material Cross Referencing

In the event of a suspect material being encountered with a frequency that does not permit continual re-sampling on the grounds of practicality, the surveyor may cross reference this item with one that has already been sampled. To do this the surveyor will ensure that the material is identical in nature (through examining visual appearance e.g. colour) to that of the material to which it is referenced.

Method of Sample analysis

Polychlorinated biphenyls (PCBs) Congeners in Miscellaneous Samples (Euro 7)

METHOD STATEMENT.

A Sonication extraction technique using Hexane/Acetone in conjunction with Congener specific GC/MS analysis is used to determine PCBs in the 'as received' samples. The extract is injected into a GC/MS system, where it is separated by GC via a temperature programmed column & identified by the Mass Spectrometer (MS) detector. Identification of the PCB Congeners is achieved by comparing the resulting Mass Spectra with the electron impact spectra of certified standards. Quantisation is carried out by comparing the response of the Primary ion relative to an internal standard using a 5 point calibration curve.

Polychlorinated biphenyls (PCBs) Congeners in Miscellaneous Samples (WHO 12)

METHOD STATEMENT.

A shaker extraction technique using Hexane/Acetone in conjunction with Congener specific GC/MS- SIM analysis is used to determine PCBs (WHO 12) in 'as received' materials. The extract is injected into a GC/MS system, where it is separated by GC via a temperature programmed column & identified by the Mass Spectrometer (MS) detector. Selected ion monitoring (SIM) is utilised to achieve lower detection limits.

Polychlorinated biphenyls (PCBs) in Liquids.

METHOD STATEMENT.

PCBs are extracted from water samples using a separatory funnel liquid extraction technique based on EPA Method 3510. The Hexane solvent extract is concentrated & injected into a GC/MS system where it is separated by GC via a temperature programmed column & identified by the Mass Spectrometer (MS) detector. Identification of the PCB Congeners is achieved by comparing the resulting Mass Spectra with the electron impact spectra of certified standards. Quantisation is carried out by comparing the response of the Primary ion relative to an internal standard using a 5 point calibration curve.

Results and Findings

The item examination and inspection findings, bulk analysis results, material assessment are reported in the form of a PCB inspection and testing detail register. Lucion Enviromental Ltd test to the WHO 12 system and a quantity of each of these congeners is given in the table. If reported as <0.1, the PCB content is less than the limit of detection.

Cited References and Further Reading

1. Marine Environment Protection Committee - MEPC 58/3/2 dated 2 July 2008 – Revised *IMO Guidelines on Ship Recycling* Construction (Design and Management) Regulations (2007). The Stationary Office. ISBN 011 0438450
2. Joint Services Publication 418 – MoD Environmental Manual
3. Basel Convention – PCB, PCT, & PBB Technical Guidelines
4. ECC Council Regulation No. 259/

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	PCB Type	Quantity of PCB Congener	Unit of Quantity
HMS Conqueror	2/001 Upper Torpedo Compartment	DB60 power cable to fuse box below telephone systems	Cable insulation	Sample	1	100+ meters	PCB 81 PCB 77 PCB 105 PCB 114 PCB 118 PCB 123 PCB 126 PCB 156 PCB 157 PCB 167 PCB 169 PCB 189 Total PCB	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg
HMS Conqueror	2/001 Upper Torpedo Compartment	DB12 power cable to fuse box below telephone systems	Cable insulation	Sample	2	100+ meters	PCB 81 PCB 77 PCB 105 PCB 114 PCB 118 PCB 123 PCB 126 PCB 156 PCB 157 PCB 167 PCB 169 PCB 189 Total PCB	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg
HMS Conqueror	3/001 Lower Torpedo Compartment	Overhead power feed cables 10mm	Cable insulation	Sample	3	100+ meters	PCB 81 PCB 77 PCB 105 PCB 114 PCB 118 PCB 123 PCB 126 PCB 156 PCB 157 PCB 167 PCB 169 PCB 189	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 0.5 <0.1 <0.1 <0.1 <0.1	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	PCB Type	Quantity of PCB Congener	Unit of Quantity
							Total PCB	0.5	mg/kg
HMS Conqueror	2/010 Corridor	Mains input power cable to Miscellanious Junction box number 20	Cable insulation	Sample	4	100+ meters	PCB 81 PCB 77 PCB 105 PCB 114 PCB 118 PCB 123 PCB 126 PCB 156 PCB 157 PCB 167 PCB 169 PCB 189 Total PCB	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg
HMS Conqueror	Radar Office	Wall mounted and overhead power cables to FWD wall	Cable insulation	Sample	5	100+ meters	PCB 81 PCB 77 PCB 105 PCB 114 PCB 118 PCB 123 PCB 126 PCB 156 PCB 157 PCB 167 PCB 169 PCB 189 Total PCB	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg
HMS Conqueror	Radar Office	Wall mounted and overhead power cables to FWD wall	Cable insulation	Sample	6	100+ meters	PCB 81 PCB 77 PCB 105 PCB 114 PCB 118 PCB 123 PCB 126 PCB 156 PCB 157 PCB 167 PCB 169 PCB 189 Total PCB	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	PCB Type	Quantity of PCB Congener	Unit of Quantity
HMS Conqueror	3/014 AMP Space	Mains Power to Port wall	Cable insulation	Sample	7	100+ meters	PCB 81 PCB 77 PCB 105 PCB 114 PCB 118 PCB 123 PCB 126 PCB 156 PCB 157 PCB 167 PCB 169 PCB 189 Total PCB	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg
HMS Conqueror	3/014 AMP Space	Mains Power to AFT wall adjacent to comms box	Cable insulation	Sample	8	100+ meters	PCB 81 PCB 77 PCB 105 PCB 114 PCB 118 PCB 123 PCB 126 PCB 156 PCB 157 PCB 167 PCB 169 PCB 189 Total PCB	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg
HMS Conqueror	LP Blower Compartmentt	Mains power feed to ceiling mount behind Starboard boiler	Cable insulation	Sample	9	100+ meters	PCB 81 PCB 77 PCB 105 PCB 114 PCB 118 PCB 123 PCB 126 PCB 156 PCB 157 PCB 167 PCB 169 PCB 189 Total PCB	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg
HMS Conqueror	1/008 Control Room	Mains power feed adjacent to Periscope mounting	Cable insulation	Sample	10	100+ meters	PCB 81 PCB 77 PCB 105 PCB 114	<0.1 <0.1 <0.1 <0.1	mg/kg mg/kg mg/kg mg/kg

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	PCB Type	Quantity of PCB Congener	Unit of Quantity
							PCB 118 PCB 123 PCB 126 PCB 156 PCB 157 PCB 167 PCB 169 PCB 189 Total PCB	<0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg
HMS Conqueror	2/011 Diesel Generator Room	AFT Deckhead triple core mains power cable	Cable insulation	Sample	11	100+ meters	PCB 81 PCB 77 PCB 105 PCB 114 PCB 118 PCB 123 PCB 126 PCB 156 PCB 157 PCB 167 PCB 169 PCB 189 Total PCB	<0.1 <0.1 <0.1 <0.1 0.8 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 0.8	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg
HMS Conqueror	2/011 Diesel Generator Room	AFT Deckhead triple core mains power cable - painted	Cable insulation	Sample	12	100+ meters	PCB 81 PCB 77 PCB 105 PCB 114 PCB 118 PCB 123 PCB 126 PCB 156 PCB 157 PCB 167 PCB 169 PCB 189 Total PCB	<0.1 0.28 0.91 <0.1 1.64 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 2.83	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg
HMS Conqueror	2/011 Diesel Generator Room	AFT Deckhead triple core mains power cable - painted	Cable insulation	Sample	13	100+ meters	PCB 81 PCB 77 PCB 105 PCB 114 PCB 118 PCB 123 PCB 126 PCB 156	<0.1 <0.1 0.63 <0.1 1.76 <0.1 <0.1 <0.1	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg

Vessel	Location	Item / Product Examined	Material Description	Sampling Strategy	Sample No.	Extent	PCB Type	Quantity of PCB Congener	Unit of Quantity
							PCB 157 PCB 167 PCB 169 PCB 189 Total PCB	<0.1 <0.1 <0.1 <0.1 2.39	mg/kg mg/kg mg/kg mg/kg mg/kg
HMS Conqueror	2/011 Diesel Generator Room	Mains 440v input power to transformer unit	Cable insulation	Sample	14	100+ meters	PCB 81 PCB 77 PCB 105 PCB 114 PCB 118 PCB 123 PCB 126 PCB 156 PCB 157 PCB 167 PCB 169 PCB 189 Total PCB	<0.1 <0.1 0.69 <0.1 0.52 1.12 mg/kg <0.1 <0.1 <0.1 <0.1 <0.1 2.33	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg
HMS Conqueror	1/012 EMR Room	Degausing Cable	Cable insulation	Sample	15	100+ meters	PCB 81 PCB 77 PCB 105 PCB 114 PCB 118 PCB 123 PCB 126 PCB 156 PCB 157 PCB 167 PCB 169 PCB 189 Total PCB	<0.1 <0.1 mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg <0.1	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg

Survey Inspection Detail and Sample Test Report

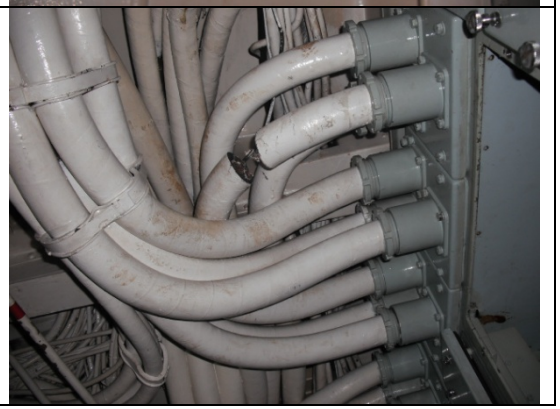
Areas Excluded & Not Fully Accessed During Survey

Vessel Description	Location	Item / Product Examined	Accessibility	Surveyor Additional Comments At Time Of Survey
HMS Conqueror	Throughout vessel	Temporary ships lighting circuits	Limited Access	Live Service Supply

Areas Excluded & Not Fully Accessed During Survey

Management Recommendation Detail

Vessel Name	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
HMS Conqueror	3/001 Lower Torpedo Compartment	Overhead power feed cables 10mm	PCB Containing cable	3	Dispose of accordingly during recycling	
HMS Conqueror	2/011 Diesel Generator Room	AFT Deckhead triple core mains power cable	PCB Containing cable	11	Dispose of accordingly during recycling	

Vessel Name	Location	Item / Product Examined	Material Description	Sample No.	Initial Control Recommendation	Photograph
HMS Conqueror	2/011 Diesel Generator Room	AFT Deckhead triple core mains power cable - painted	PCB Containing cable	12	Dispose of accordingly during recycling	
HMS Conqueror	2/011 Diesel Generator Room	AFT Deckhead triple core mains power cable - painted	PCB Containing cable	13	Dispose of accordingly during recycling	
HMS Conqueror	2/011 Diesel Generator Room	Mains 440v input power to transformer unit	PCB Containing cable	14	Dispose of accordingly during recycling	

Additional Advice and Information

Depending on the information and findings in this report, you may require some additional advice or resources. Lucion can assist you in the development of your recycling programme and advise on the best course of action. If this document is to be used in conjunction with the Green Passport development for the vessel, appropriate steps should be made available to make sure the PCB containing materials are disposed of in according to local environment agency regulations. You should therefore make this register available for consultation and keep it regularly updated.

If you intend adding these records to an existing system, e.g. Green Passport template, we will be pleased to give you any necessary information in a digital format (including images and data records).

SURVEY REPORT – NON SAMPLED HAZARDOUS MATERIALS

HMS Conqueror

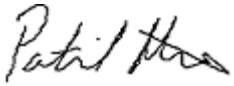
(Devonport Royal Dockyard,)
Lucion Report No.: 21054747
Lucion Report Issue Date: 03 March 2010

lucion environmental

Head Office
7 Halifax Court
Dunston
Gateshead
NE11 9JT

T: 0191 461 8999
E: enquiries@lucion.co.uk
www.lucion.co.uk

Report Summary

Works detailed within report commissioned by	Babcock Marine
Lucion Environmental Ltd report number	21054747
Survey type	Non Sampled hazardous materials from Table B, C and D from IMO Guidelines
Premises surveyed	HMS Conqueror, Devenport Royal Dockyard.
Surveyor	Mr Philip M. Rozier BSc. (Hons);;
Surveyor signature	
Survey Date	1/12/2010 8:27:00 AM
Bulk sample analysis location	N/A
Analyst	N/A
Analysis date	N/A
Report approver	Dr Patrick A.J. Morton BSc. (Hons) Quality Manager
Approved signature	
Approval date	03 March 2010

Total Number of reportable hazardous materials	86

Report Contents:

Report Contents

Introduction

This report aims to:

- Detail survey findings
- Serve as a reference document to assist in making further steps towards the management of any hazards indentified on board
- Assist in compiling a hazard Register to be used within a Green Passport

Vessels Included in Survey Scope

Every effort has been made to identify all hazardous materials so far as was reasonably practical to do so within the scope of the survey and the attached report. Methods used to carry out the survey were agreed with the client prior to any works being commenced.

Survey techniques used involves trained and experienced surveyors using the combined approach with regard to visual examination and necessary bulk sampling. It is always possible after a survey that hazardous materials of one sort or another may remain in the vessel or area covered by that survey, this could be due to various reasons:

Hazardous materials existing within areas not specifically covered by this report are therefore outside the scope of the survey.
Materials may be hidden or obscured by other items or cover finishes i.e paint, over boarding, disguising etc. where this is the case then its detection will be impaired.
Hazardous materials may well be hidden as part of the structure to a vessel and not visible until the structure is dismantled at a later date.
This survey will detail all areas accessed and all samples taken, where an area is not covered by this survey it will be due to No Access for one reason or another i.e working operatives, sensitive location or just simply no access. It may have been necessary for the limits of the surveyor's authority to be confirmed prior to the survey.
Access for the survey may be restricted for many reasons beyond our control such as height, inconvenience to others, immovable obstacles or confined space. Where electrical equipment is present and presumed in the way of the survey no access will be attempted until proof of its safe state is given. Our operatives have a duty of care under the Health and Safety at Work act (1974) for both themselves and others.
In the vessel where hazardous materials have been located and it is clear that not all areas have been investigated, any material that is found to be suspicious and not detailed as part of the survey should be treated with caution and sampled accordingly.
Where a survey is carried out under the guidance of the owner of the vessel, or his representative, then the survey will be as per his instructions and guidance at that time.

Lucion Environmental Ltd cannot accept any liability for loss, injury, damage or penalty issues due to errors or omissions within this report. Lucion Environmental Ltd cannot be held responsible for any damage caused as part of this survey carried out on your behalf. Due to the nature and necessity of sampling for hazardous materials some damage is unavoidable and will be limited to just that necessary for the taking of the sample.

Table “areas excluded and not fully accessed during survey” gives details of those vessels, locations and items not accessed at the time of the survey (where appropriate, and if all areas were fully accessed, no items are listed).

In addition to those items listed in table “area excluded or not fully accessed during survey”, Lucion does not routinely investigate certain items during the course of a hazardous materials survey and so no specific mention of their exclusion is made. Typically such items may include, but are not restricted to:

Live electrical systems and apparatus; live heater units; live lift machinery; live hot ovens and steam systems
Moving plant and equipment
Unsafe heights
Open sewers or effluent drains; chemical and biological material handling systems; areas of insect or animal Infestation; confined spaces or areas of potentially hazardous environment
Due to unacceptable levels of damage to structures and decorative surfaces, access is not normally gained to:

Voids to wall Linings and partitions; Voids to cavities
Enclosed ceiling voids; Enclosed floor voids and spaces
Service ducts and boxing without accessible service hatches

Where investigation of an intrusive nature (within the scope of the survey being performed) is needed to discern the presence of a material and the vessel is occupied during the inspection the level of intrusion may be restricted. As far as is reasonably practicable such restrictions will be indicated within the “areas excluded & not fully accessed during survey” section of this report. Scenarios leading to intrusion restriction may [by way of example] include (but are not limited to) security integrity of the vessel, significant damage to decorative finishes, risk to the structural integrity of the vessel, occupation within adjacent areas. Investigations undertaken in such situations may, through circumstantial restrictions, be incomplete. Further investigation works may be required once unrestricted access can be offered.

Survey Methodology

The hazardous material findings detailed in this report were gathered using documented in house inspection (TOP01.01) and sampling procedures (TOP01.02). However, it was beyond the scopes of works for this particular contract to sample these suspected hazards. It had been previously agreed with the client, that a presumptive approach to the hazardous materials would be excepted, unless surveying for asbestos or PCB containing cables (see separate survey documents)

Lucion specific methodology

Basic Level Survey: Location and Assessment (Presumptive)

The purpose of the Basic Level Survey is solely to locate the presence and extent of suspect hazardous materials without sampling any of the materials encountered. As no samples are taken all materials which can reasonably be expected to contain hazards outlined in the IMO Guidelines must be presumed to do so. Materials, which are visually assessed as hazardous containing, will be strongly presumed to do so. This type of survey essentially defers the sampling of materials suspected to contain hazards until a later date. In addition, the duty holder risks bearing management costs of materials that must be presumed to contain hazards but may be found not to, following later sampling and analysis. If a new build vessel, or an operational ship, live cables and electric components can not be sampled due to the live nature of the units. It should be realised that the limited nature of this survey must be reflected in any management plan implemented.

Nominal Level Survey: Standard Sampling and Identification

The underlying purpose and inspection methodology of the Nominal Level Survey is as that of the Basic Level survey. However, where possible, representative samples of materials suspected by the surveyor to contain hazards are taken and analysed for the presence and type of hazard. This survey type is suitable for integration into a plan for the management of hazardous materials.

Full Depth Level Survey: Full Access, Sampling and Identification

The Full Depth survey is fully intrusive (as far as is reasonably practicable) and is aimed at locating all hazardous materials within a survey area. Normally, unless otherwise specified, it involves fully invasive and possibly destructive investigation of all survey areas, in order to locate and assess all materials suspected as containing hazards. The survey records only the location and estimated extent of the hazardous materials. This type of survey is normally recommended prior to decommissioning/recycling/ major refurbishment work commencing in the survey area.

Survey Methodology – Important Notes

Project Specifics

It has been confirmed between Lucion and the client, that in this project, a basic level survey is sufficient to provide accurate information for the purpose of a Green Passport. Segregation, separation and sampling of liquids/fluids has been deemed as unnecessary. It is expected and been discussed, that any liquids remaining on board are expected to be residual, and of a visually identifiable nature. If specific material components are required to be indentified, then sampling will be needed as addition to this work package.

Reasonable Skill and Care

Although all survey areas that have been examined are reported in accordance with Lucion Environmental Ltd's documented in house procedures (for the specified survey type) and all reasonable skill and care has been exercised by the surveyor in doing so, it must be realised that no survey can reasonably guarantee beyond doubt that all hazardous materials have been located. Reasons for this limitation may include health and safety issues, reasons of practicality, non-access to live equipment and dangerous or contaminated environments or risk of unsafe levels of damage being inflicted on the survey area amongst others, or the location of the material being outside the investigative scope of the survey type undertaken.

Sampling of Materials

If access to the material permits, a representative sample of the material is taken according to the "sampling strategy". As no practical sampling strategy can be assured as being entirely representative of the circumstances encountered during surveying, care should be exercised when interpreting results. That is to say that if works are planned that may cause disturbance or require the removal of hazardous materials, implementation of a more intense sampling regime may be desirable.

Material Cross Referencing

In the event of a suspect material being encountered with a frequency that does not permit continual re-sampling on the grounds of practicality, the surveyor may cross reference this item with one that has already been sampled. To do this the surveyor will ensure that the material is identical in nature (through examining visual appearance e.g. colour) to that of the material to which it is referenced.

Method of Sample analysis

Chlorofluorocarbons Analysis in Miscellaneous Samples & Liquids

METHOD STATEMENT.

A Static Headspace GC/MS technique (based on EPA Method 8260) is used to determine Chlorofluorocarbons or CFCs in liquid and 'as received' samples. The sample is placed into an automated headspace system, where it is heated and agitated. The volatiles are injected into the GC/MS via a heated transfer line. The sample is then separated by GC via a temperature programmed column & identified by the Mass Spectrometer (MS) detector. Identification of the target CFCs is achieved by comparing the resulting Mass Spectra with the electron impact spectra of certified standards. Quantisation is carried out by comparing the response of the Primary ion relative to an internal standard using a 5 point calibration curve.

Organotin Compounds in Miscellaneous Samples.

METHOD STATEMENT.

Organotin Compounds are extracted from the 'as received' sample with Methanol/ Acetic Acid and derivitised with Sodium tetraethyl solution. The Solvent extract is injected into a GC/MS system where it is separated by GC via a temperature programmed column & identified by the Mass Spectrometer (MS) detector. Quantisation is carried out by comparing the response of the Primary ion relative to an internal standard using a 5 point calibration curve. Selected ion monitoring (SIM) is utilised to achieve lower detection limits.

Organotin Compounds in Liquids.

METHOD STATEMENT.

Organotin Compounds including Tributyltin (TBT) are extracted from liquid samples using a shaker extraction and derivitised with Sodium tetraethyl solution. The Hexane solvent extract injected into a GC/MS system where it is separated by GC via a temperature programmed column & identified by the Mass Spectrometer (MS) detector. Quantisation is carried out by comparing the response of the Primary ion relative to an internal standard using a 5 point calibration curve. Selected ion monitoring (SIM) is utilised to achieve lower detection limits.

Results and Findings

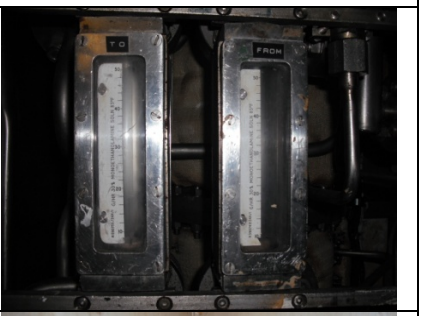
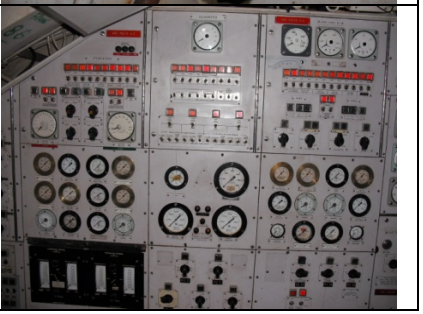
The item examination and inspection findings, bulk analysis results, material assessment are reported in the form of a hazardous materials inspection and testing detail register. All analytical results produced by Lucion Environmental Ltd, or their nominated sub contractors, will comply with all reportable qualities specified within our Technical Operating Procedures, approved by the EPA (Environmental Protection Agency).

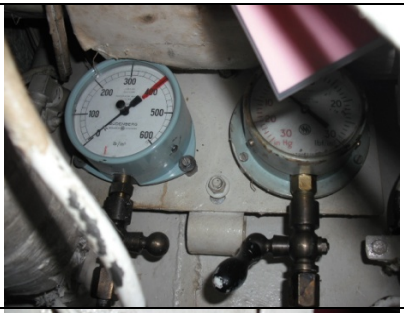
Cited References and Further Reading

1. Marine Environment Protection Committee - MEPC 58/3/2 dated 2 July 2008 – Revised *IMO Guidelines on Ship Recycling* Construction (Design and Management) Regulations (2007). The Stationary Office. ISBN 011 0438450
2. Joint Services Publication 418 – MoD Environmental Manual
3. Basel Convention – PCB, PCT, & PBB Technical Guidelines
4. ECC Council Regulation No. 259/

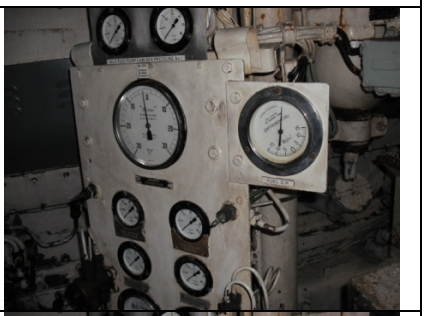
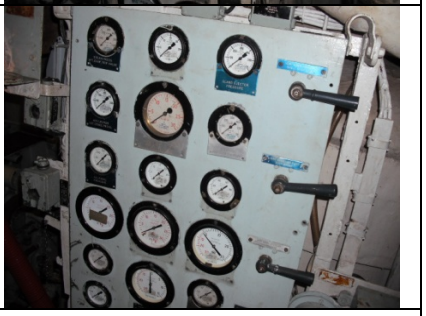
Survey Inspection Detail and Sample Test Report

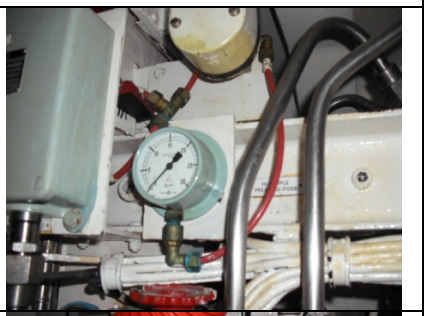
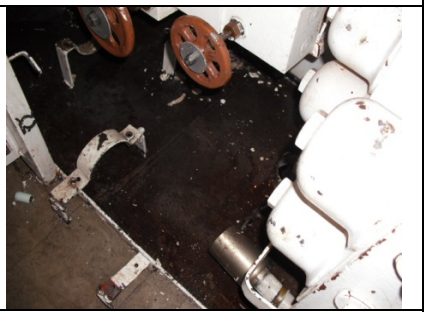
Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	3/012 Lobby (outside refrigeration space)	Thermometers	Mercury Table B B-4	Visual	Small quantity		
HMS Conqueror	LP Blower Room	Thermometers	Mercury Table B B-4	Visual	Small quantity		
HMS Conqueror	LP Blower Room	Pressure Gauges	Beryllium Copper	Visual	Several units		

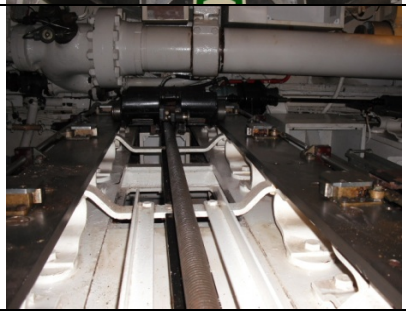
Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	LP Blower Room	'To' and 'From' Gauges	Mono-ethanolamine	Visual	2+ Units		
HMS Conqueror	1/008 Control Room	Pressure gauges	Beryllium Copper	Visual	Several units		
HMS Conqueror	1/010 Manoeuvring Room, indicator panel	Pressure gauges	Beryllium Copper, Phosphor Bronze	Visual	10+ Units		

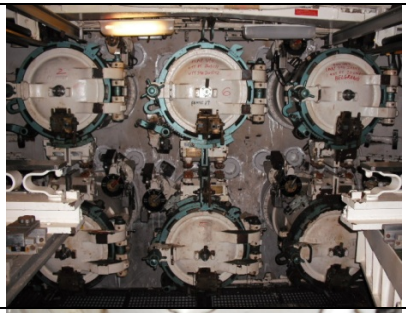
Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	1/010 Manoeuvring Room, to tank above DG access ladder	Pressure gauges	Beryllium Copper, Phosphor Bronze	Visual	2 Units		
HMS Conqueror	1/010 Manoeuvring Room, port side radiation controlled area	Pressure gauges	Beryllium Copper, Phosphor Bronze	Visual	2 Units		
HMS Conqueror	1/016 Motor Room	Pressure gauges to Pyro Locker	Beryllium Copper, Phosphor Bronze	Visual	4+ Units		

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	3/003 Sonar Cab Space	Pressure gauges	Beryllium Copper, Phosphor Bronze	Visual	4+ Units		
HMS Conqueror	3/017 Turbine Generator Room	Pressure gauges	Beryllium Copper, Phosphor Bronze	Visual	6+ Units		
HMS Conqueror	2/011 Diesel Generator Room	Hydrazine store tank	Hydrazine (radioactive)	Visual	Residual	Left over active service, presumed emptied	

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	2/011 Diesel Generator Room	Pressure gauges to Diesel Generator pressure indicator panel	Beryllium Copper, Phosphor Bronze	Visual	6+ Units		
HMS Conqueror	2/011 Diesel Generator Room	Pressure gauges to Hydraulic control units	Beryllium Copper, Phosphor Bronze	Visual	2+ Units		
HMS Conqueror	2/012 Main Machinery Space	Pressure gauges to main indicator panel, Port and Starboard side indicator panel and fuel injectors	Beryllium Copper, Phosphor Bronze	Visual	Several Units		
HMS Conqueror	4/011 Main Machinery Space	CFC gas (hydrofluorocarbons) within Freon Condenser A2	Hydro fluorocarbons within condenser	Visual	Unknown	Left over from active service, presumed drained	N/A

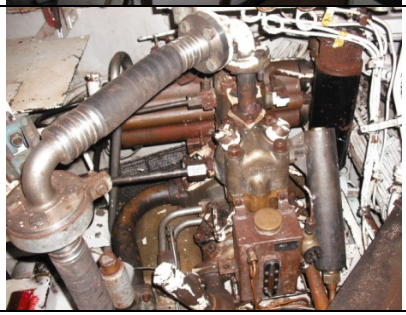
Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	3/002 Electrolyser Room	Pressure gauges to main indicator panel	Beryllium Copper and Phosphor Bronze held within indicator gauges	Visual	Several Units		
HMS Conqueror	4/002 Slop Tank Room	Pressure gauges to main indicator panel	Beryllium Copper and Phosphor Bronze held within indicator gauges	Visual	Several Units		
HMS Conqueror	Throughout vessel	Gauges and components to electrical switch gear	Cadmium to sensor equipment and electronic equipment	Visual	Small quantities expected within material structure		N/A
HMS Conqueror	2/001 Upper Torpedo Room	Lubrication oils to racking systems.	Lub oil C-3	Visual	Residual	Left over from active service	N/A
HMS Conqueror	2/001 Upper Torpedo Room, adjacent to hydraulic cylinder	Surface oil to floor.	Lub oil C-3	Visual	Residual	Left over from active service	

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	2/001 Upper Torpedo Room	Lubrication oil to winch systems and associated machinery.	Lub C-3	Visual	Residual	Left over from active service	
HMS Conqueror	2/001 Upper Torpedo Room	Grease to entrance hatch	Lub oil C-3, Hydraulic oil C-4	Visual	Residual	Left over from active service	
HMS Conqueror	3/001 Lower Torpedo Room	Lubrication oils to racking systems. Item	Lub oil C-3	Visual	Residual	Left over from active service	

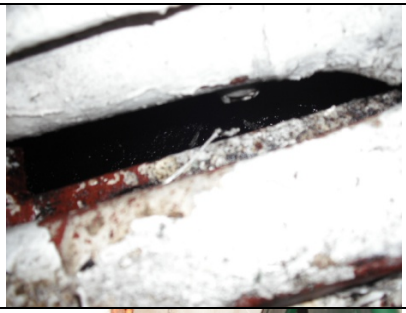
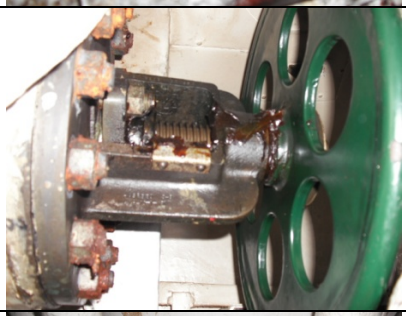
Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	3/001 Lower Torpedo Room	Lubrication greases to torpedo tube hatches	Lub oil C-3	Visual	Residual	Left over from active service	
HMS Conqueror	2/002 Ships Office	Lubrication oil to Torpedo Exhaust Valves	Lub oil C-3	Visual	Residual	Left over from active service	
HMS Conqueror	2/003 Oxygen Generator Room	Lubrication oil to Torpedo Exhaust Valves	Lub oil C-3	Visual	Residual	Left over from active service	

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	2/003 Oxygen Generator Room	Lubrication oil to Oxygen Generators	Lub oil C-3	Visual	Residual	Left over from active service	
HMS Conqueror	2/005 Galley	Lubrication oil to GASH Ejector	Lub oil C-3	Visual	Residual	Left over from active service	
HMS Conqueror	3/006 Laundry Room	Detergent	C-49	Visual	<1kg	Left over from active service	

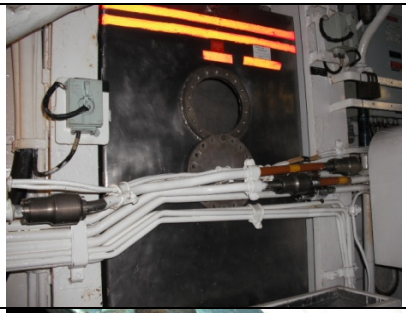
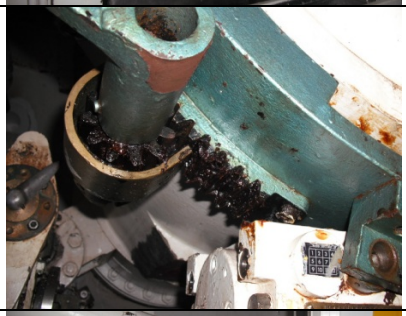
Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	3/012 Lobby	Lubrication oil to rotary systems	Lub oil C-3	Visual	Residual	Left over from active service	
HMS Conqueror	1/008 Control room. Port side deck behind wall panels	Surface oils	Lub oil C-3	Visual	Residual	Left over from active service	
HMS Conqueror	1/008 Control room, overhead moving plant	Surface oils	Lub oil C-3, Hydraulic oil C-4	Visual	Residual	Left over from active service	

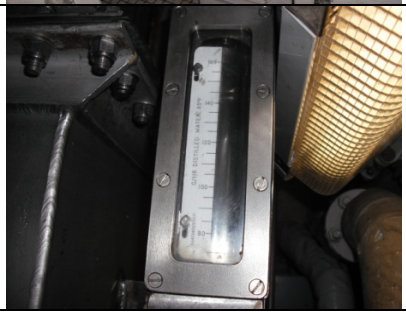
Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	1/008 Control Room	Oils and lubs to hoses and valves	Lub oil C-3	Visual	Residual	Left over from active service	
HMS Conqueror	1/008 Control Room	Water associated within Septic Tank	C-34	Visual	Residual	Left over from active service, presumed drained and presumed untreated.	
HMS Conqueror	1/016 Motor Room	Lubrication grease to machinery parts and surfaces	Lub oil C-3	Visual	Residual	Left over from active service	

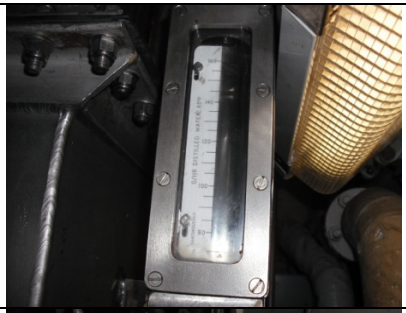
Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	1/016 Motor Room	Surface oils, below prop shaft motor	Lub oil C-3	Visual	1 litre estimate	Left over from active service	
HMS Conqueror	2/013 Motor Room	Surface fluids to port side and starboard side motors	C-4, C-3	Visual	5 litres estimate	Left over from active service	
HMS Conqueror	3/017 Turbine Generator Room	Surface fluids to bilge wells, presumed	C-4, C-3	Visual	50 litres estimate	Left over from active service. Spill is 3inches deep at base of bilge	

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	2/011 Diesel Generator Room	Surface fluid oil under Diesel Generators	C-4, C-3	Visual	10+ Litres estimate	Left over from active service	
HMS Conqueror	2/011 Diesel Generator Room	Surface grease to moving parts of plant	C-4, C-3	Visual	Residual per area	Left over from active service	
HMS Conqueror	2/011 Diesel Generator Room	Surface hydraulic fluid under hydraulic tank 2	C-4, C-3	Visual	3 litres estimate	Left over from active surface, potential leak from hydraulic tank 2	

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	2/011 Diesel Generator Room	Surface oils under hydraulic control unit	C-4, C-3	Visual	3 litres estimate	Left over from active service	
HMS Conqueror	2/001 Upper Torpedo Room	Oils within hoses.	C-4, C-3	Visual	Residual	Left over from active service	
HMS Conqueror	2/001 Upper Torpedo Room, Port and Starboard side	Oils to tank in indicator	C-4, C-3	Visual	Residual	Left over from active service	

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	2/001 Upper Torpedo Room	Possible water contaminants (not in Appendix)		Visual	Residual	Left over from active service, presumed drained	
HMS Conqueror	3/001 Lower Torpedo Room	Lubrications oils	C-3	Visual	Residual	Left over from active service	
HMS Conqueror	3/005 Bathroom	Fluids within cistern tanks, presumed water based		Visual	Residual	Left over from active service, presumed drained	

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	3/010 Refrigeration Space	Liquids within liquid receivers	C-15	Visual	Residual	Left over from active service, presumed drained	
HMS Conqueror	3/012 Lobby	Lubrication oil	C-4, C-3	Visual	0.6m3	Tank is approximate 1m3. Indicator gauge reads 2/3 full	
HMS Conqueror	LP Blower Room	Water associated		Visual	Residual	Left over from active service, presumed drained	

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	LP Blower Room	Distilled water		Visual	Residual	Left over from active service, presumed drained	
HMS Conqueror	1/010 Manoeuvring Room	Water based foam		Visual	Residual	Left over from active service, presumed drained	
HMS Conqueror	1/013 Walkway, starboard side	Water based foam		Visual	Residual	Left over from active service, presumed drained	

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	1/016 Motor Room	Liquids	C-4, C-3	Visual	Residual	Left over from active service, observed drained	
HMS Conqueror	2/013 Motor Room	Extractor fluid	C-4, C-3	Visual	Residual	Left over from active service	
HMS Conqueror	2/013 Motor Room	Fluid feed tanks, presumed hydraulic and fuel.	C-4, C-3	Visual	Residual	Left over from active service, presumed drained	

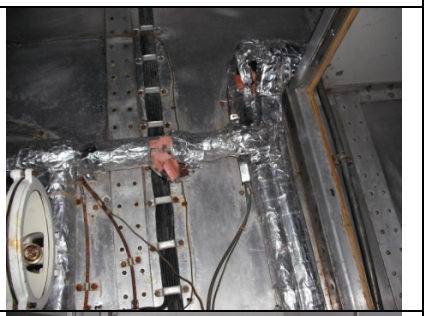
Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	3/003 Sonar cab space	Coolant additives	C-7	Visual	5 litres	Left over from active surface, approx 10litre tank, indicator gauge reads half full	
HMS Conqueror	3/017 Turbine Generator Room	Lubricating fluids and oils within Turbine units, x 2.	C-4, C-3	Visual	Residual	Left over from active service	
HMS Conqueror	2/011 Diesel Generator room	Fuel remnants to fuel filters		Visual	Residual	Left over from active service, presumed drained	

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	2/011 Diesel Generator room	Hydraulic fluid	C-4	Visual	Indicator reads 2/3 full, tank size not quantifiable	Left over from active service, presumed drained	
HMS Conqueror	2/011 Diesel Generator room	Fluid tanks behind diesel generators, unknown origin		Visual	Residual	Left over from active service, presumed drained	
HMS Conqueror	2/011 Diesel Generator room	Hydraulic fluid	C-4, C-3	Visual	Residual per tank 3 no.	Left over from active service, presumed drained	

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	4/011 Main Machinery Space	Lubricating oil	C-4, C-3	Visual	Residual	Left over from active service, presumed drained	
HMS Conqueror	3/002 Electrolyser Room	Demineraliser (unknown type)		Visual	Unknown	Left over from active service, presumed emptied	
HMS Conqueror	3/002 Electrolyser Room	Various Chemicals, unknown origin		Visual	Residual	Left over from active service, presumed drained	

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	4/002 Slop Tank Room	Fluids to Port side tank		Visual	Residual	Left over from active service	
HMS Conqueror	4/002 Slop Tank Room	Water components		Visual	Residual	Left over from active service, presumed drained	
HMS Conqueror	4/002 Slop Tank Room	Hydraulic fluid	C-4, C-3	Visual	Residual to tanks (2 no.)	Left over from active service, presumed drained	
HMS Conqueror	Throughout vessel	Anti Seize compounds	C-5	Visual	Small quantity per unit	Left over from active service, the majority of moving components are now redundant and have been drained	N/A

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	Where moving machinery and motors and found	Anti freeze compounds	C-8	Visual	Presumed small quantity and plant/machinery is in active and presumed drained	Left over from active service	N/A
HMS Conqueror	Diesel Generator Room	Battery Electrolyte	C-16	Visual	2 litres estimate	Left over from active service	N/A
HMS Conqueror	Throughout vessel	Water treatment test re-agents	C-9	Visual	Residual per unit	Left over from active service, presumed drained	N/A
HMS Conqueror	2/003 Oxygen Generator Room	Oxygen Generator	Oxygen C-21	Visual	Residual	Left over from active service	
HMS Conqueror	2/010 Corridor	Fire Extinguisher	Carbon Dioxide C-47	Visual	Residual	Left over from active service, presumed drained	

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	3/011 Cold Room	Refrigerator	Refrigeration Gases Suspected R12	Visual	Residual	Left over from active service, presumed drained	
HMS Conqueror	1/005 Pantry	Tabletop Refrigerator	Refrigeration Gases (Unknown type). Likely to be ammonia or R134	Visual	Residual	Left over from active service, presumed drained	
HMS Conqueror	1/013 Walkway	Hydrogen reduction valves/pipes	Hydrogen	Visual	Residual	Tanks been removed, associated feed pipes and valves still in situ	

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	2/013 Motor Room	Base 3 Air reservoir	Air components	Visual	Residual	Left over from active service, presumed drained	
HMS Conqueror	2/011 Diesel Generator room	Gas tanks adjacent to radiation exclusion zone	Gas within gas containers, unknown origin	Visual	Residual`	Left over from active service, presumed emptied	
HMS Conqueror	2/011 Diesel Generator room	Base 3 Air reservoir	Air components	Visual	Residual	Left over from active service, presumed drained	

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	2/011 Diesel Generator Room	Hydrogen tank adjacent Diesel Generator 1.	Hydrogen	Visual	Residual	Left over from active service, presumed emptied	
HMS Conqueror	2/011 Diesel Generator Room	Within FWD Port side fire extinguisher	Carbon Dioxide C-47	Visual	Residual	Left over from active service, presumed drained	
HMS Conqueror	3/002 Electrolyser Room	Within air filtration units Port Side	Air components	Visual	Residual	Left over from active service, presumed emptied	

Vessel	Location	Item / Product Examined	Hazard Description and number from Appendix 1 of the Guidelines	Sampling Strategy	Extent	Remarks/Comments	Photograph
HMS Conqueror	3/002 Electrolyser Room	Within electrolyser unit	Oxygen and hydrogen C-21	Visual	Residual	Left over from active service, presumed drained	
HMS Conqueror	3/011 Cold Room	Within Number 1 and 2 system condensers.	R12 Refrigerant gas A-2	Visual	Presumed emptied, plaque evidence to say up to 6kg in both condensers	Left over from active service	

Survey Inspection Detail and Sample Test Report

Areas Excluded & Not Fully Accessed During Survey

Vessel Description	Location	Item / Product Examined	Accessibility	Surveyor Additional Comments At Time Of Survey
HMS Conqueror	Throughout vessel	Areas behind fixed plant/machinery and electrics. All tanks and agreed out of scope compartments		

Areas Excluded & Not Fully Accessed During Survey

Additional Advice and Information

Depending on the information and findings in this report, you may require some additional advice or resources. Lucion can assist you in the development of your recycling programme and advise on the best course of action. If this document is to be used in conjunction with the Green Passport development for the vessel, appropriate steps should be made available to make sure the PCB containing materials are disposed of in according to local environment agency regulations. You should therefore make this register available for consultation and keep it regularly updated.

If you intend adding these records to an existing system, e.g. Green Passport template, we will be pleased to give you any necessary information in a digital format (including images and data records).

WEILBURGER Coatings
Arundel Road
Uxbridge
Middlesex
UB8 2SD

Telephone No: 01895 251234
Facsimile: 01895 256789

Safety Information Sheet

A92 PAINT,FINISHING FOR GENERAL SERVICE AIR DRYING,SPRAYING TO SPECIFICATION DEF STAN 80-54

Sheet Code: S/A92 **Issue No: 1**

1. Identification of the Substance or Preparation and the Company/Undertaking

Product Name:	A92 PAINT,FINISHING FOR GENERAL SERVICE AIR DRYING,SPRAYING TO SPECIFICATION DEF STAN 80-54
Intended Use:	An air drying paint for a variety of primed substrates. Application by brushing or spraying.
Supplier:	Weilburger Coatings (UK) Ltd, Arundel Road, Uxbridge, Middlesex UB8 2SD.
E-mail:	health.safety@trimite.com
Emergency Telephone No.:	01895 251234

2. Hazards Identification

Flammable. Dangerous for the Environment.
Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

3. Composition/Information on Ingredients

Synthetic resins and organic/inorganic pigments in organic solvents.

Substances presenting a health or environmental hazard within the meaning of the CHIP Regulations or which are assigned occupational Exposure Limit Values.

Substance name	EINECS No.	CAS Number	Classification	Risk Phrases	Concentration
Naphtha (petroleum) hydrodesulfurized heavy (white spirit)		64742-82-1		65-66-51/53	25-50
1-Methoxypropyl-2-acetate		108-65-6	Xi	36	1-10

For full text of R-phrases, see Section 16

4. First Aid Measures

General	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Inhalation	Remove to fresh air, keep patient warm and at rest. If breathing is irregular or has stopped, administer artificial respiration. Give nothing by mouth. If unconscious place in recovery position and seek medical advice.
Eye Contact	Remove contact lenses. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart and seek medical advice.
Skin Contact	Remove contaminated clothing. Wash skin thoroughly with soap and water or use a proprietary skin cleaner. Do NOT use solvents or thinners.
Ingestion	If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

5. Fire Fighting Measures

Recommended Extinguishing media: Carbon dioxide, Dry Powder, Fine water spray, Alcohol Resistant Foam.
Not to be used: Water jet.

Fire will produce dense black smoke containing hazardous products of combustion (see Section 10). Exposure to decomposition products may be a hazard to health. Appropriate self-contained breathing apparatus may be required. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

6. Accidental Release Measures

Exclude sources of ignition and ventilate the area. Exclude non-essential personnel. Avoid breathing vapours. Refer to protective measures listed in Sections 7 and 8. Contain and collect spillages with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in a suitable container for disposal in accordance with the waste regulations (see Section 13). Do not allow to enter drains or watercourses. Clean preferably with a detergent; avoid use of solvents. If the product enters drains or sewers, immediately contact the local water company; in the case of contamination of streams, rivers or lakes, the relevant environment agency.

7. Handling and Storage

Vapours are heavier than air and may spread along floors. They may form explosive mixtures with air. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the Workplace Exposure Limit Values (see Section 8). In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. Avoid skin and eye contact. Avoid the inhalation of vapour and mist. For Workplace Exposure Controls measures, see Section 8. Keep the container tightly closed. Exclude sources of heat, sparks and open flame. Non-sparking tools should be used. Smoking, eating and drinking should be prohibited in areas of storage and use. The accumulation of contaminated rags and dry overspray, particularly in spray booth filters, may result in spontaneous combustion. Good housekeeping standards, regular safe removal of waste materials and regular maintenance of spray booth filters will minimise the risks of this and other fire hazards.

The storage and use of this product must be in accordance with the assessment required under the Dangerous Substances and Explosive Atmospheres Regulations. Up to 50 litres of such flammable liquids may be kept in the work room, provided they are kept in a fireproof cupboard or bin. Larger quantities must be kept in a separate storeroom, conforming to the structural requirements of the regulations. Further guidance is contained in the HSE guidance note Storage of Flammable Liquids in Containers. Observe label precautions. Store between 10°C and 15°C in a dry, well ventilated place away from sources of heat, ignition and direct sunlight. Containers which are opened should be properly resealed and kept upright to prevent leakage. Store separately from oxidizing agents and strongly alkaline or acidic materials. The principles contained in the HSE`s guidance note Storage of Packaged Dangerous Substances should be observed when storing this product.

8. Exposure Controls/Personal Protection

Exposure Controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of solvent vapour and/or particulates below the relevant Workplace Exposure Limit Values, suitable respiratory protection must be worn (see “Workplace Exposure Controls” below).

Exposure Limit Values

Substance Name	Workplace Exposure Limits 8hr mg/m3	15min	Notes
1-Methoxypropyl-2-acetate	274	548	Sk
Naphtha (petroleum) hydrodesulfurized heavy (white spirit)	600		

Notes: SUP - categorised from suppliers' literature. Sk - Risk of absorption through skin. Sen - Respiratory sensitiser Bmgv - Biological monitoring may be appropriate (see Biological Monitoring Guidance Value in EH40 Table 2).

Occupational Exposure Controls

All personal protective equipment, including respiratory protective equipment, used to control exposure to hazardous substances must be selected to meet the requirements of the COSHH Regulations.

Respiratory Protection	Air-fed respiratory protective equipment should be worn when this product is sprayed if the exposure of the sprayer or other people nearby cannot be controlled to below the Workplace Exposure Limit Values and engineering controls and methods cannot reasonably be improved. Dry sanding, flame cutting and/or welding of the dry paint film will give rise to dust and/or hazardous fumes. Wet sanding/flatting should be used wherever possible. If exposure cannot be avoided by the provision of local exhaust ventilation, suitable respiratory protective equipment should be used.
Hand Protection	When skin exposure may occur, advice should be sought from glove suppliers on appropriate types and usage times for this product. The instructions and information provided by the glove supplier on use, storage, maintenance and replacement must be followed. Barrier creams may help to protect exposed areas of skin, but are not substitutes for full physical protection. They should not be applied once exposure has occurred.
Eye Protection	Eye protection designed to protect against liquid splashes should be worn.
Skin Protection	Cotton or cotton/synthetic overalls are normally suitable. Contaminated clothing should be removed and the skin washed with soap and water or a proprietary skin cleaner. Regular skin inspection of users of this product is recommended.

Environmental Exposure Control

See Section 12 for detailed information.

9. Physical and Chemical Properties

Physical State:	Viscous liquid with characteristic solvent odour.	Vapour Density:	Heavier than Air
Flashpoint:	Between 32°C and 61°C	Lower Explosion Limit:	0.7%
Viscosity:	4 - 5 poise Rotothinner	Solubility in Water:	Immiscible
SG:	0.90 - 1.20	Boiling Range:	150 - 160°C
VOC Content:	420 grams per litre	pH Value:	

The values given here should be regarded as typical and are given as guidance for Health and Safety purposes. They do not represent a specification for the product(s) covered by this Safety Information Sheet.

10. Stability and Reactivity

Stable under the recommended storage and handling conditions (see Section 7). In a fire, hazardous decomposition products such as smoke, carbon monoxide, carbon dioxide and oxides of nitrogen may be produced. Keep away from oxidizing agents and strongly alkaline and strongly acidic materials to prevent the possibility of exothermic reaction.

11. Toxicological Information

There is no data available on the product itself. The product has been assessed following the conventional method in CHIP and is classified for toxicological hazards accordingly. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes. See Sections 2 and 15 for details of the resulting hazard classification. Exposure to organic solvent vapours in excess of the stated workplace exposure limit may result in adverse health effects such as irritation of the mucous membrane and the respiratory system and adverse effects on kidney, liver and central nervous systems. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the product may cause removal of natural fats from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. Splashes in the eyes may cause irritation and reversible local damage.

12. Ecological Information

There is no data available on the product itself. The product has been assessed following the conventional method in CHIP and is classified for ecological hazards accordingly. See Sections 2 and 15 for details.

Naphtha (petroleum) hydrodesulfurized heavy (white spirit)
Acute Toxicity: LC50 96 hours fish 1-10mg/l

The product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters. It may have adverse effects on sewage treatment plants. LAPPC requirements of regulations made under the Pollution Prevention and Control Act and/or the Environmental Protection Act may apply to the use of this product.

13. Disposal Considerations

Waste materials should be regarded as controlled wastes and should be disposed of in accordance with the relevant regulations. Do not allow waste to enter drains. The Control of Pollution Act 1974, The Hazardous Waste Regulations, the Environmental Protection Act 1990 and/or any local regulations will apply.

14. Transport Information

Road/Rail	Designation	PAINT						
	UN Number	1263	Packing Group	III	Transport Category	3	Class	3
Sea	Designation	PAINT						
	UN Number	1263	Packing Group	III	Transport Category	3	Class	3
	Marine Pollutant	Yes						
Air	Designation	PAINT						
	UN Number	1263	Packing Group	III	Transport Category	3	Class	3

15. Regulatory Information

The product is classified and labelled for supply in accordance with the Chemicals (Hazard Information & Packaging for Supply) Regulations 2002 (S.I. 2002 No. 1689) as follows:

Classification: Flammable
Dangerous for the Environment

Contains

Risk Phrases	51/53	Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment
Safety Phrases	7	Keep container tightly closed
	36/37/39	Wear suitable protective clothing, gloves and eye/face protection
	46	If swallowed, seek medical advice immediately and show this container or label
	61	Avoid release to the environment
'P' Phrases	Do not breathe vapour or spray. In case of insufficient ventilation, wear suitable respiratory equipment	

The information contained in this sheet does not constitute the user's own assessment of the workplace risks as required by other health and safety legislation. The provisions of the Health & Safety at Work etc. Act and the Control of Substances Hazardous to Health Regulations apply to the use of this product.

16. Other Information

Text of any Risk Phrases listed in Section 2

36	Irritating to eyes
51/53	Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment
65	Harmful: May cause lung damage if swallowed
66	Repeated exposure may cause skin dryness or cracking

Date of Origination: 05/02/2008
Date of Last Revision: 05/02/2008

The risk phrase texts listed above are included to ensure compliance with the CHIP Regulations. They apply only to the pure chemical compounds listed in Section 8 and NOT to the product as supplied. For guidance on the risk phrases applicable to the product, see Section 15 and product label. The V.O.C. content quoted may be considered a typical figure as some variation will be evident between colours. Contact our Commercial Administration Department for accurate values. Refer to Workplace Exposure Limits Guidance Note EH40/- and The spraying of flammable liquids HS(G)178 (both available from HSE).

The information contained in this safety data sheet is provided in accordance with the requirements of the CHIP Regulations. The product should not be used for purposes other than those shown in Section 1 without first referring to the supplier and obtaining written handling instructions. As the specific conditions of use of the product are outside the supplier’s control, the user is responsible for ensuring that the requirements of relevant legislation are complied with.

The information contained in this safety data sheet is based on the present state of knowledge and on current national legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

Further information and relevant advice can be found in:-

Control of Substances Hazardous to Health Regulations 2002 (SI2002:2677)
COSHH Essentials: Easy Steps to Control Chemicals HS(G)193
The Dangerous Substances and Explosive Atmospheres Regulations 2002 (SI2002:2776)
A Guide to Working with Solvents INDG272
Chemical Warehousing: The Storage of Packaged Dangerous Substances HS(G)71
Environmental Protection (Duty of Care) Regulations 1992 (SI1992:2839)
Manual Handling Operations Regulations 1992 (SI1992:2793)
The Selection, Use and Maintenance of Respiratory Protective Equipment HS(G)53

WEILBURGER Coatings
Arundel Road
Uxbridge
Middlesex
UB8 2SD

Telephone No: 01895 251234
Facsimile: 01895 256789

Safety Information Sheet

S59 PAINT FINISHING FOR INSTRUMENTS STOVING SPRAYING TO SPECIFICATION DEF STAN 80-152

Sheet Code: S/S59 **Issue No: 3**

1. Identification of the Substance or Preparation and the Company/Undertaking

Product Name:	S59 PAINT FINISHING FOR INSTRUMENTS STOVING SPRAYING TO SPECIFICATION DEF STAN 80-152
Intended Use:	A paint for use in MOD contracts. Application by a variety of spraying techniques.
Supplier:	Weilburger Coatings (UK) Ltd, Arundel Road, Uxbridge, Middlesex UB8 2SD.
E-mail:	health.safety@trimite.com
Emergency Telephone No.:	01895 251234

2. Hazards Identification

Harmful. Irritant. Flammable.
Harmful by inhalation and in contact with skin. Irritating to eyes and skin.

3. Composition/Information on Ingredients

Synthetic resins and organic/inorganic pigments in organic solvents.

Substances presenting a health or environmental hazard within the meaning of the CHIP Regulations or which are assigned occupational Exposure Limit Values.

Substance name	EINECS No.	CAS Number	Classification	Risk Phrases	Concentration
Xylene, all isomers	215-535-7	1330-20-7	Xn, Xi	20/21-38	25-50
1-Methoxypropyl-2-acetate		108-65-6	Xi	36	1-10
n-Butyl acetate	204-658-1	123-86-4		10-66-67	1-10
2-Methylpropan -1-ol	201-148-0	78-83-1	Xi	10-37/38-41-67	1-10
1-Methoxypropan-2-ol	203-539-1	107-98-2		10	1-10
Formaldehyde	200-001-8	50-00-0	Carc. Cat. 3, T,	23/24/25-34-40-43	<0.3

For full text of R-phrases, see Section 16

4. First Aid Measures

General	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Inhalation	Remove to fresh air, keep patient warm and at rest. If breathing is irregular or has stopped, administer artificial respiration. Give nothing by mouth. If unconscious place in recovery position and seek medical advice.
Eye Contact	Remove contact lenses. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart and seek medical advice.
Skin Contact	Remove contaminated clothing. Wash skin thoroughly with soap and water or use a proprietary skin cleaner. Do NOT use solvents or thinners.
Ingestion	If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

5. Fire Fighting Measures

Recommended Extinguishing media: Carbon dioxide, Dry Powder, Fine water spray, Alcohol Resistant Foam.
Not to be used: Water jet.
Fire will produce dense black smoke containing hazardous products of combustion (see Section 10). Exposure to decomposition products may be a hazard to health. Appropriate self-contained breathing apparatus may be required. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

6. Accidental Release Measures

Exclude sources of ignition and ventilate the area. Exclude non-essential personnel. Avoid breathing vapours. Refer to protective measures listed in Sections 7 and 8. Contain and collect spillages with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in a suitable container for disposal in accordance with the waste regulations (see Section 13). Do not allow to enter drains or watercourses. Clean preferably with a detergent; avoid use of solvents. If the product enters drains or sewers, immediately contact the local water company; in the case of contamination of streams, rivers or lakes, the relevant environment agency.

7. Handling and Storage

Vapours are heavier than air and may spread along floors. They may form explosive mixtures with air. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the Workplace Exposure Limit Values (see Section 8). In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. Avoid skin and eye contact. Avoid the inhalation of vapour and mist. For Workplace Exposure Controls measures, see Section 8. Keep the container tightly closed. Exclude sources of heat, sparks and open flame. Non-sparking tools should be used. Smoking, eating and drinking should be prohibited in areas of storage and use. The accumulation of contaminated rags and dry overspray, particularly in spray booth filters, may result in spontaneous combustion. Good housekeeping standards, regular safe removal of waste materials and regular maintenance of spray booth filters will minimise the risks of this and other fire hazards.

The storage and use of this product must be in accordance with the assessment required under the Dangerous Substances and Explosive Atmospheres Regulations. Up to 50 litres of such flammable liquids may be kept in the work room, provided they are kept in a fireproof cupboard or bin. Larger quantities must be kept in a separate storeroom, conforming to the structural requirements of the regulations. Further guidance is contained in the HSE guidance note Storage of Flammable Liquids in Containers. Observe label precautions. Store between 10°C and 15°C in a dry, well ventilated place away from sources of heat, ignition and direct sunlight. Containers which are opened should be properly resealed and kept upright to prevent leakage. Store separately from oxidizing agents and strongly alkaline or acidic materials. The principles contained in the HSE`s guidance note Storage of Packaged Dangerous Substances should be observed when storing this product.

8. Exposure Controls/Personal Protection

Exposure Controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of solvent vapour and/or particulates below the relevant Workplace Exposure Limit Values, suitable respiratory protection must be worn (see “Workplace Exposure Controls” below).

Exposure Limit Values

Substance Name	Workplace Exposure Limits		Notes
	8hr mg/m3	15min	
Xylene, all isomers	220	441	Sk Bmgv
1-Methoxypropan-2-ol	375	560	Sk
2-Methylpropan -1-ol	154	231	
Formaldehyde	2.5	2.5	
n-Butyl acetate	724	966	
1-Methoxypropyl-2-acetate	274	548	Sk

Notes: SUP - categorised from suppliers' literature. Sk - Risk of absorption through skin. Sen - Respiratory sensitiser Bmgv - Biological monitoring may be appropriate (see Biological Monitoring Guidance Value in EH40 Table 2).

Occupational Exposure Controls

All personal protective equipment, including respiratory protective equipment, used to control exposure to hazardous substances must be selected to meet the requirements of the COSHH Regulations.

Respiratory Protection	Air-fed respiratory protective equipment should be worn when this product is sprayed if the exposure of the sprayer or other people nearby cannot be controlled to below the Workplace Exposure Limit Values and engineering controls and methods cannot reasonably be improved. Dry sanding, flame cutting and/or welding of the dry paint film will give rise to dust and/or hazardous fumes. Wet sanding/flatting should be used wherever possible. If exposure cannot be avoided by the provision of local exhaust ventilation, suitable respiratory protective equipment should be used.
Hand Protection	When skin exposure may occur, advice should be sought from glove suppliers on appropriate types and usage times for this product. The instructions and information provided by the glove supplier on use, storage, maintenance and replacement must be followed. Barrier creams may help to protect exposed areas of skin, but are not substitutes for full physical protection. They should not be applied once exposure has occurred.
Eye Protection	Eye protection designed to protect against liquid splashes should be worn.
Skin Protection	Cotton or cotton/synthetic overalls are normally suitable. Contaminated clothing should be removed and the skin washed with soap and water or a proprietary skin cleaner. Regular skin inspection of users of this product is recommended.

Environmental Exposure Control

See Section 12 for detailed information.

9. Physical and Chemical Properties

Physical State:	Viscous liquid with characteristic solvent odour.	Vapour Density:	Heavier than Air
Flashpoint:	Between 21°C and 32°C	Lower Explosion Limit:	0.7%
Viscosity:	45 - 55 secs BS Cup B4	Solubility in Water:	Immiscible
SG:	1.180 ± 0.03	Boiling Range:	130 - 140°C
VOC Content:	633 grams per litre	pH Value:	

The values given here should be regarded as typical and are given as guidance for Health and Safety purposes. They do not represent a specification for the product(s) covered by this Safety Information Sheet.

10. Stability and Reactivity

Stable under the recommended storage and handling conditions (see Section 7). In a fire, hazardous decomposition products such as smoke, carbon monoxide, carbon dioxide and oxides of nitrogen may be produced. Keep away from oxidizing agents and strongly alkaline and strongly acidic materials to prevent the possibility of exothermic reaction.

11. Toxicological Information

There is no data available on the product itself. The product has been assessed following the conventional method in CHIP and is classified for toxicological hazards accordingly. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes. See Sections 2 and 15 for details of the resulting hazard classification. Exposure to organic solvent vapours in excess of the stated workplace exposure limit may result in adverse health effects such as irritation of the mucous membrane and the respiratory system and adverse effects on kidney, liver and central nervous systems. Symptoms and signs include

headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the product may cause removal of natural fats from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. Splashes in the eyes may cause irritation and reversible local damage. Free formaldehyde is not normally present in significant quantities in this product as supplied. However, it can be liberated during cure and appropriate ventilation should be provided.

12. Ecological Information

There is no data available on the product itself. The product has been assessed following the conventional method in CHIP and is not classified as dangerous for the environment.

The product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters. It may have adverse effects on sewage treatment plants. LAPPC requirements of regulations made under the Pollution Prevention and Control Act and/or the Environmental Protection Act may apply to the use of this product.

13. Disposal Considerations

Waste materials should be regarded as controlled wastes and should be disposed of in accordance with the relevant regulations. Do not allow waste to enter drains. The Control of Pollution Act 1974, The Hazardous Waste Regulations, the Environmental Protection Act 1990 and/or any local regulations will apply.

14. Transport Information

Road/Rail	Designation	PAINT						
	UN Number	1263	Packing Group	III	Transport Category	3	Class	3
Sea	Designation	PAINT						
	UN Number	1263	Packing Group	III	Transport Category	3	Class	3
	Marine Pollutant	No						
Air	Designation	PAINT						
	UN Number	1263	Packing Group	III	Transport Category	3	Class	3

15. Regulatory Information

The product is classified and labelled for supply in accordance with the Chemicals (Hazard Information & Packaging for Supply) Regulations 2002 (S.I. 2002 No. 1689) as follows:

Classification	Harmful Flammable	
Contains	Xylene, all isomers	
Risk Phrases	20/21	Harmful by inhalation and in contact with skin
	36/38	Irritating to eyes and skin
Safety Phrases	7	Keep container tightly closed
	36/37/39	Wear suitable protective clothing, gloves and eye/face protection
	46	If swallowed, seek medical advice immediately and show this container or label
'P' Phrases	Do not breathe vapour or spray. In case of insufficient ventilation, wear suitable respiratory equipment Contains formaldehyde. May produce an allergic reaction	

The information contained in this sheet does not constitute the user's own assessment of the workplace risks as required by other health and safety legislation. The provisions of the Health & Safety at Work etc. Act and the Control of Substances Hazardous to Health Regulations apply to the use of this product.

16. Other Information

Text of any Risk Phrases listed in Section 2

10	Flammable
34	Causes burns
36	Irritating to eyes
38	Irritating to skin
40	Limited evidence of a carcinogenic effect
41	Risk of serious damage to eyes
43	May cause sensitisation by skin contact
20/21	Harmful by inhalation and in contact with skin
23/24/25	Toxic by inhalation, in contact with skin and if swallowed
37/38	Irritating to respiratory system and skin
40	Possible risks of irreversible effects
66	Repeated exposure may cause skin dryness or cracking
67	Vapours may cause drowsiness and dizziness

Date of Origination: 26/04/2006
Date of Last Revision: 26/04/2006

The risk phrase texts listed above are included to ensure compliance with the CHIP Regulations. They apply only to the pure chemical compounds listed in Section 8 and NOT to the product as supplied. For guidance on the risk phrases applicable to the product, see Section 15 and product label. The V.O.C. content quoted may be considered a typical figure as some variation will be evident between colours. Contact our Commercial Administration Department for accurate values. Refer to Workplace Exposure Limits Guidance Note EH40/- and The spraying of flammable liquids HS(G)178 (both available from HSE).

The information contained in this safety data sheet is provided in accordance with the requirements of the CHIP Regulations. The product should not be used for purposes other than those shown in Section 1 without first referring to the supplier and obtaining written handling instructions. As the specific conditions of use of the product are outside the supplier's control, the user is responsible for ensuring that the requirements of relevant legislation are complied with.

The information contained in this safety data sheet is based on the present state of knowledge and on current national legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

Further information and relevant advice can be found in:-

Control of Substances Hazardous to Health Regulations 2002 (SI2002:2677)
COSHH Essentials: Easy Steps to Control Chemicals HS(G)193
The Dangerous Substances and Explosive Atmospheres Regulations 2002 (SI2002:2776)
A Guide to Working with Solvents INDG272
Chemical Warehousing: The Storage of Packaged Dangerous Substances HS(G)71
Environmental Protection (Duty of Care) Regulations 1992 (SI1992:2839)
Manual Handling Operations Regulations 1992 (SI1992:2793)
The Selection, Use and Maintenance of Respiratory Protective Equipment HS(G)53

WEILBURGER Coatings
Arundel Road
Uxbridge
Middlesex
UB8 2SD

Telephone No: 01895 251234
Facsimile: 01895 256789

Safety Information Sheet

SP59 PAINT, PRIMING FOR INSTRUMENTS, STOVING, SPRAYING TO SPECIFICATION DEF STAN 80-152

Sheet Code: S/SP59 **Issue No: 2**

1. Identification of the Substance or Preparation and the Company/Undertaking

Product Name:	SP59 PAINT, PRIMING FOR INSTRUMENTS, STOVING, SPRAYING TO SPECIFICATION DEF STAN 80-152
Intended Use:	A paint for use in MOD contracts. Application by a variety of spraying techniques.
Supplier:	Weilburger Coatings (UK) Ltd, Arundel Road, Uxbridge, Middlesex UB8 2SD.
E-mail:	health.safety@trimite.com
Emergency Telephone No.:	01895 251234

2. Hazards Identification

Harmful. Irritant. Flammable. Carcinogen Category 1.
May cause cancer. Harmful by inhalation and in contact with skin. Irritating to eyes and skin. Harmful to aquatic organisms, may cause long term adverse effects in the aquatic environment.

3. Composition/Information on Ingredients

Synthetic resins and organic/inorganic pigments in organic solvents. This product contains Zinc Chromate pigments.

Substances presenting a health or environmental hazard within the meaning of the CHIP Regulations or which are assigned occupational Exposure Limit Values.

Substance name	EINECS No.	CAS Number	Classification	Risk Phrases	Concentration
Xylene, all isomers	215-535-7	1330-20-7	Xn, Xi	20/21-38	25-50
4-Hydroxy-4-methylpentan-2-one (diacetone alcohol)	204-626-7	123-42-2	Xi	36	10-25
1-Methoxypropyl-2-acetate		108-65-6	Xi	36	1-10
2-Methylpropan -1-ol	201-148-0	78-83-1	Xi	10-37/38-41-67	1-10
Formaldehyde	200-001-8	50-00-0	Carc. Cat. 3, T,	23/24/25-34-40-43	<0.15
Zinc chromates including Zinc potassium chromate		11103-86-9 13530-65-9	Carc. Cat. 1, Xn, N	45-22-43-50/53	<0.8

For full text of R-phrases, see Section 16

4. First Aid Measures

General	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Inhalation	Remove to fresh air, keep patient warm and at rest. If breathing is irregular or has stopped, administer artificial respiration. Give nothing by mouth. If unconscious place in recovery position and seek medical advice.
Eye Contact	Remove contact lenses. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart and seek medical advice.
Skin Contact	Remove contaminated clothing. Wash skin thoroughly with soap and water or use a proprietary skin cleaner. Do NOT use solvents or thinners.
Ingestion	If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

5. Fire Fighting Measures

Recommended Extinguishing media: Carbon dioxide, Dry Powder, Fine water spray, Alcohol Resistant Foam.
Not to be used: Water jet.

Fire will produce dense black smoke containing hazardous products of combustion (see Section 10). Exposure to decomposition products may be a hazard to health. Appropriate self-contained breathing apparatus may be required. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

6. Accidental Release Measures

Exclude sources of ignition and ventilate the area. Exclude non-essential personnel. Avoid breathing vapours. Refer to protective measures listed in Sections 7 and 8. Contain and collect spillages with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in a suitable container for disposal in accordance with the waste regulations (see Section 13). Do not allow to enter drains or watercourses. Clean preferably with a detergent; avoid use of solvents. If the product enters drains or sewers, immediately contact the local water company; in the case of contamination of streams, rivers or lakes, the relevant environment agency.

7. Handling and Storage

Vapours are heavier than air and may spread along floors. They may form explosive mixtures with air. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the Workplace Exposure Limit Values (see Section 8). In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. Avoid skin and eye contact. Avoid the inhalation of vapour and mist. For Workplace Exposure Controls measures, see Section 8. Keep the container tightly closed. Exclude sources of heat, sparks and open flame. Non-sparking tools should be used. Smoking, eating and drinking should be prohibited in areas of storage and use. The accumulation of contaminated rags and dry overspray, particularly in spray booth filters, may result in spontaneous combustion. Good housekeeping standards, regular safe removal of waste materials and regular maintenance of spray booth filters will minimise the risks of this and other fire hazards.

The storage and use of this product must be in accordance with the assessment required under the Dangerous Substances and Explosive Atmospheres Regulations. Up to 50 litres of such flammable liquids may be kept in the work room, provided they are kept in a fireproof cupboard or bin. Larger quantities must be kept in a separate storeroom, conforming to the structural requirements of the regulations. Further guidance is contained in the HSE guidance note Storage of Flammable Liquids in Containers. Observe label precautions. Store between 10°C and 15°C in a dry, well ventilated place away from sources of heat, ignition and direct sunlight. Containers which are opened should be properly resealed and kept upright to prevent leakage. Store separately from oxidizing agents and strongly alkaline or acidic materials. The principles contained in the HSE`s guidance note Storage of Packaged Dangerous Substances should be observed when storing this product.

8. Exposure Controls/Personal Protection

Exposure Controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of solvent vapour and/or particulates below the relevant Workplace Exposure Limit Values, suitable respiratory protection must be worn (see “Workplace Exposure Controls” below).

Exposure Limit Values

Substance Name	Workplace Exposure Limits		Notes
	8hr mg/m3	15min	
Xylene, all isomers	220	441	Sk Bmgv
Zinc chromates including Zinc potassium chromate	0.05		
4-Hydroxy-4-methylpentan-2-one (diacetone	241	362	
2-Methylpropan -1-ol	154	231	
Formaldehyde	2.5	2.5	
1-Methoxypropyl-2-acetate	274	548	Sk

Notes: SUP - categorised from suppliers' literature. Sk - Risk of absorption through skin. Sen - Respiratory sensitiser Bmgv - Biological monitoring may be appropriate (see Biological Monitoring Guidance Value in EH40 Table 2).

Occupational Exposure Controls

All personal protective equipment, including respiratory protective equipment, used to control exposure to hazardous substances must be selected to meet the requirements of the COSHH Regulations.

Respiratory Protection	Air-fed respiratory protective equipment should be worn when this product is sprayed if the exposure of the sprayer or other people nearby cannot be controlled to below the Workplace Exposure Limit Values and engineering controls and methods cannot reasonably be improved. Dry sanding, flame cutting and/or welding of the dry paint film will give rise to dust and/or hazardous fumes. Wet sanding/flatting should be used wherever possible. If exposure cannot be avoided by the provision of local exhaust ventilation, suitable respiratory protective equipment should be used.
Hand Protection	When skin exposure may occur, advice should be sought from glove suppliers on appropriate types and usage times for this product. The instructions and information provided by the glove supplier on use, storage, maintenance and replacement must be followed. Barrier creams may help to protect exposed areas of skin, but are not substitutes for full physical protection. They should not be applied once exposure has occurred.
Eye Protection	Eye protection designed to protect against liquid splashes should be worn.
Skin Protection	Cotton or cotton/synthetic overalls are normally suitable. Contaminated clothing should be removed and the skin washed with soap and water or a proprietary skin cleaner. Regular skin inspection of users of this product is recommended.

Environmental Exposure Control

See Section 12 for detailed information.

9. Physical and Chemical Properties

Physical State:	Viscous liquid with characteristic solvent odour.	Vapour Density:	Heavier than Air
Flashpoint:	Between 21°C and 32°C	Lower Explosion Limit:	0.7%
Viscosity:	45 - 55 secs BS Cup B4	Solubility in Water:	Immiscible
SG:	1.227 ± 0.03	Boiling Range:	120 - 140°C
VOC Content:	615 grams per litre	pH Value:	

The values given here should be regarded as typical and are given as guidance for Health and Safety purposes. They do not represent a specification for the product(s) covered by this Safety Information Sheet.

10. Stability and Reactivity

Stable under the recommended storage and handling conditions (see Section 7). In a fire, hazardous decomposition products such as smoke, carbon monoxide, carbon dioxide and oxides of nitrogen may be produced. Keep away from oxidizing agents and strongly alkaline and strongly acidic materials to prevent the possibility of exothermic reaction.

11. Toxicological Information

There is no data available on the product itself. The product has been assessed following the conventional method in CHIP and is classified for toxicological hazards accordingly. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes. See Sections 2 and 15 for details of the resulting hazard classification. Exposure to organic solvent vapours in excess of the stated workplace exposure limit may result in adverse health effects such as irritation of the mucous membrane and the respiratory system and adverse effects on kidney, liver and central nervous systems. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the product may cause removal of natural fats from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. Splashes in the eyes may cause irritation and reversible local damage. Zinc chromate pigment is a recognised human carcinogen and there is evidence that exposure can result in lung cancer. There is no evidence of a similar risk arising from the use of coatings containing this pigment. Free formaldehyde is not normally present in significant quantities in this product as supplied. However, it can be liberated during cure and appropriate ventilation should be provided.

12. Ecological Information

There is no data available on the product itself. The product has been assessed following the conventional method in CHIP and is classified for ecological hazards accordingly. See Sections 2 and 15 for details.

Zinc chromates including Zinc potassium chromate

The product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters. It may have adverse effects on sewage treatment plants. LAPPC requirements of regulations made under the Pollution Prevention and Control Act and/or the Environmental Protection Act may apply to the use of this product.

13. Disposal Considerations

Waste materials should be regarded as controlled wastes and should be disposed of in accordance with the relevant regulations. Do not allow waste to enter drains. The Control of Pollution Act 1974, The Hazardous Waste Regulations, the Environmental Protection Act 1990 and/or any local regulations will apply.

14. Transport Information

Road/Rail	Designation	PAINT						
	UN Number	1263	Packing Group	III	Transport Category	3	Class	3
Sea	Designation	PAINT						
	UN Number	1263	Packing Group	III	Transport Category	3	Class	3
	Marine Pollutant	No						
Air	Designation	PAINT						
	UN Number	1263	Packing Group	III	Transport Category	3	Class	3

15. Regulatory Information

The product is classified and labelled for supply in accordance with the Chemicals (Hazard Information & Packaging for Supply) Regulations 2002 (S.I. 2002 No. 1689) as follows:

Classification	Toxic	
	Flammable	
Contains	Xylene, all isomers	
	Zinc chromates including Zinc potassium chromate	
Risk Phrases	45	May cause cancer
	20/21	Harmful by inhalation and in contact with skin
	36/38	Irritating to eyes and skin
	52/53	Harmful to aquatic organisms, may cause long term adverse effects in the aquatic environment
Safety Phrases	7	Keep container tightly closed
	36/37/39	Wear suitable protective clothing, gloves and eye/face protection
	46	If swallowed, seek medical advice immediately and show this container or label
	53	Avoid exposure - obtain special instructions before use
	61	Avoid release to the environment
'P' Phrases	Do not breathe vapour or spray. In case of insufficient ventilation, wear suitable respiratory equipment	
	Contains formaldehyde. May produce an allergic reaction	
	Restricted to professional users	

The information contained in this sheet does not constitute the user's own assessment of the workplace risks as required by other health and safety legislation. The provisions of the Health & Safety at Work etc. Act and the Control of Substances Hazardous to Health Regulations apply to the use of this product.

16. Other Information

Text of any Risk Phrases listed in Section 2

10	Flammable
22	Harmful if swallowed
34	Causes burns
36	Irritating to eyes
38	Irritating to skin
40	Limited evidence of a carcinogenic effect
41	Risk of serious damage to eyes
43	May cause sensitisation by skin contact
45	May cause cancer
20/21	Harmful by inhalation and in contact with skin

23/24/25	Toxic by inhalation, in contact with skin and if swallowed
37/38	Irritating to respiratory system and skin
50/53	Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment
40	Possible risks of irreversible effects
67	Vapours may cause drowsiness and dizziness

Date of Origination: 19/05/2006
Date of Last Revision: 19/05/2006

The risk phrase texts listed above are included to ensure compliance with the CHIP Regulations. They apply only to the pure chemical compounds listed in Section 8 and NOT to the product as supplied. For guidance on the risk phrases applicable to the product, see Section 15 and product label. Refer to Workplace Exposure Limits Guidance Note EH40/- and The spraying of flammable liquids HS(G)178 (both available from HSE).

The information contained in this safety data sheet is provided in accordance with the requirements of the CHIP Regulations. The product should not be used for purposes other than those shown in Section 1 without first referring to the supplier and obtaining written handling instructions. As the specific conditions of use of the product are outside the supplier's control, the user is responsible for ensuring that the requirements of relevant legislation are complied with.

The information contained in this safety data sheet is based on the present state of knowledge and on current national legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

Further information and relevant advice can be found in:-

Control of Substances Hazardous to Health Regulations 2002 (SI2002:2677)
COSHH Essentials: Easy Steps to Control Chemicals HS(G)193
The Dangerous Substances and Explosive Atmospheres Regulations 2002 (SI2002:2776)
A Guide to Working with Solvents INDG272
Chemical Warehousing: The Storage of Packaged Dangerous Substances HS(G)71
Environmental Protection (Duty of Care) Regulations 1992 (SI1992:2839)
Manual Handling Operations Regulations 1992 (SI1992:2793)
The Selection, Use and Maintenance of Respiratory Protective Equipment HS(G)53

Safety Data Sheet

EGA792

INTERGARD 849 WHITE PART A

Version No. 13 **Date Last Revised** 21/07/08

1. Identification of the preparation and company

Preparation/Product Name	INTERGARD 849 WHITE PART A
Product Code	EGA792
Reg Number	
Intended use	
	For professional use only.
Application Method	
Company Name	International Paint Stoneygate Lane Felling Gateshead Tyne and Wear NE10 OJY UK
Telephone No.	+44 (0)191 469 6111
Fax No.	+44 (0)191 438 3711
24 hour Emergency Telephone No.	+44 (0)191 469 6111
Official Advisory Body Telephone No.	+44 (0)870 600 6266 For Advice to Doctors & Hospitals only
Email	sds@internationalpaint.com

2. Hazard identification of the product

Flammable.
Irritating to eyes and skin.
May cause sensitisation by skin contact.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Further information is given in section 11.

Safety Data Sheet

EGA792

INTERGARD 849 WHITE PART A

Version No. 13 **Date Last Revised** 21/07/08

3. Composition/information on ingredients

If the product contains substances that present a health hazard within the meaning of the Dangerous Substances Directive 67/548/EC, or have occupational exposure limits detailed in EH40, these substances are listed below.

Ingredient	EINECS	Concentration	Symbol(s)	Risk phrases (*)
1,2,4-trimethylbenzene	202-436-9	2.5 - < 10	Xn,N	R10,R20,R36/37/38,R51-53
1-methoxypropan-2-ol	203-539-1	10 - < 25		R10
Epoxy resin (av. mol. wt. 700 - 1000)	Polymer	25 - < 50	Xi	R36/38,R43
Solvent naphtha (petroleum), light aromatic	265-199-0	2.5 - < 10	Xn,N	R51-53, R65

* The full texts of the phrases are shown in section 16.

4. First aid measures

General

In all cases of doubt, or when symptoms persist, seek medical attention.

Never give anything by mouth to an unconscious person.

Inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eye Contact

Irrigate copiously with clean fresh water for at least 10 minutes, holding the eyelids apart and seek medical attention.

Skin Contact

Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognised skin cleanser. Do NOT use solvents or thinners.

Ingestion

If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

5. Fire-fighting measures

Recommended extinguishing media; alcohol resistant foam, CO^2. powder, water spray.

Do not use; water jet.

Note; Fire will produce dense black smoke. Decomposition products may be hazardous to health. Avoid exposure and use breathing apparatus as appropriate.

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water courses.

6. Accidental release measures

Remove sources of ignition, do not turn lights or unprotected electrical equipment on or off. In case of a major spill or spillage in a confined space evacuate the area and check that solvent vapour levels are below the Lower Explosive Limit before re-entering.

Ventilate the area and avoid breathing vapours. Take the personal protective measures listed in section 8.

Contain and absorb spillage with non-combustible materials e.g. sand, earth, vermiculite. Place in closed containers outside buildings and dispose of according to the Waste Regulations. (See section 13).

Clean, preferably with a detergent. Do not use solvents.

Do not allow spills to enter drains or watercourses.

If drains, sewers, streams or lakes are contaminated, inform the local water company immediately. In the case of contamination of rivers, streams or lakes the Environmental Protection Agency should also be informed.

Safety Data Sheet

EGA792

INTERGARD 849 WHITE PART A

Version No. 13 **Date Last Revised** 21/07/08

7. Handling and storage

Handling

This coating contains solvents. Solvent vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Areas of storage, preparation and application should be ventilated to prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the occupational exposure limits.

In Storage

Handle containers carefully to prevent damage and spillage.

Naked flames and smoking should not be permitted in storage areas. It is recommended that fork lift trucks and electrical equipment are protected to the appropriate standard.

In Use

Avoid skin and eye contact. Avoid inhalation of vapours and spray mists. Observe label precautions. Use personal protection as shown in section 8.

Smoking, eating and drinking should be prohibited in all preparation and application areas.

Never use pressure to empty a container; containers are not pressure vessels.

All sources of ignition (hot surfaces, sparks, open flames etc) should be excluded from areas of preparation and application. All electrical equipment (including torches) should be protected (Ex) to the appropriate standard.

The product may charge electrostatically. Always use earthing leads when pouring solvents and transferring product. Operators should wear clothing which does not generate static (at least 60% natural fibre) and antistatic footwear; floors should be of conducting type.

Storage

Store in a well ventilated, dry place away from sources of heat and direct sunlight.

Store on concrete or other impervious floor, preferably with bunding to contain any spillage. Do not stack more than 3 pallets high.

Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in the original container or one of the same material.

Prevent unauthorised access.

8. Exposure controls and personal protection

Engineering Measures

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapour below occupational exposure limits suitable respiratory protection must be worn.

Exposure Limits

The following workplace exposure limits have been established by the Health and Safety Executive as published in EH40.

Material	Short term (15 min. ave)		Long term (8hr TWA)		Comments
	ppm	mg/m³	ppm	mg/m³	
1,2,4-trimethylbenzene			25	125	
1-methoxypropan-2-ol	150	560	100	375	+

For Key to entries in 'Comments' column see Section 16

Personal Protection

Respiratory Protection

If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators. When spraying this product use a respiratory mask with charcoal and dust filters (as filter combination A2-P2). In confined spaces use compressed air or fresh air respiratory equipment.

Eye Protection

Wear safety eyewear, e.g. safety spectacles, goggles or visors to protect against the splash of liquids. Eyewear should comply with British Standard 2092.

Hand Protection

Nitrile rubber gloves should be worn during mixing and application.

Skin Protection

Overalls which cover the body, arms and legs should be worn. Skin should not be exposed. Barrier creams may help to protect areas which are difficult to cover such as the face and neck. They should however not be applied once exposure has occurred. Petroleum jelly based types such as Vaseline should not be used. All parts of the body should be washed after contact.

Safety Data Sheet

EGA792

INTERGARD 849 WHITE PART A

Version No. 13 **Date Last Revised** 21/07/08

9. Physical and chemical properties

Physical State	Liquid
Flash Point (deg C)	35
Viscosity (cSt)	195
Specific Gravity	1.487
Vapour Density	Heavier than air.
Lower Explosive Limit	0.8
Solubility in Water	Immiscible
R.A.Q. to ventilate to 10% of the LEL (m^3/l)	115

10. Stability and reactivity

Stable under recommended storage and handling conditions (see section 7). When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

Keep away from oxidising agents, strongly alkaline and strongly acid materials in order to avoid possible exothermic reactions.

11. Toxicological information

There are no data available on the preparation itself. The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and classified for toxicological hazards accordingly. See Sections 2 and 15 for details.

Safety Data Sheet

EGA792

INTERGARD 849 WHITE PART A

Version No. 13 **Date Last Revised** 21/07/08

12. Ecological information

There are no data available on the product itself.

The product should not be allowed to enter drains or water courses.
The product contains the following substances classified as dangerous for the environment.
Not Defined

13. Disposal considerations

Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.

Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

The European Waste Catalogue Classification of this product, when disposed of as waste is 08 01 11 Waste paint and varnish containing organic solvents or other dangerous substances. If mixed with other wastes this code may no longer apply and the appropriate code should be assigned. For further information contact your local waste authority.

14. Transport information

Transport only in accordance with the following regulations:

ADR/RID	UN1263 Paint, 3, III		
IMDG	Class	3	Subsidiary Class
	Proper Shipping Name	PAINT	
	UN No	1263	
	Ems	F-E,S-E	
	Packaging Group	III	
	Marine Pollutant	Yes	
ICAO/IATA	Shipping Name	PAINT	
	Class	3	Subsidiary Class
	UN No	1263	
	Packaging Group	III	

15. Regulatory information

In accordance with EC Directive 88/379/EEC and the Chemicals (Hazard Information and Packaging for Supply) Regulations SI /3247/1994 this product is labelled as follows:

Symbol(s)

Irritant

Contains;

Epoxy resin (av. mol. wt. 700 - 1000)

R. Phrases;

Flammable.

Irritating to eyes and skin.

May cause sensitisation by skin contact.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S. Phrases;

Do not breathe vapour/spray.

Avoid contact with skin.

Wear suitable gloves.

Use only in well-ventilated areas.

P. Phrases;

Safety Data Sheet

EGA792

INTERGARD 849 WHITE PART A

Version No. 13 **Date Last Revised** 21/07/08

16. Other information

The information in this Health & Safety Data Sheet is required pursuant to Directive 91/155/EEC and the Chemicals (Hazard Information & Packaging for Supply) Regulations 1994.

Key to 'Comments' column in Section 8.
(+) There is a risk of absorption through unbroken skin.
(C) Capable of causing cancer and/or heritable genetic damage
(R) Suppliers recommended limit
(S) Capable of causing occupational asthma

The full text of the R phrases appearing in section 3 is:

R10 Flammable.

R20 Harmful by inhalation.

R36/37/38 Irritating to eyes, respiratory system and skin.

R36/38 Irritating to eyes and skin.

R43 May cause sensitisation by skin contact.

R51-53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R65 Harmful: May cause lung damage if swallowed.

Safety Data Sheet

EGA793

INTERGARD 849 PART B

Version No. 14 **Date Last Revised** 06/08/08

1. Identification of the preparation and company

Preparation/Product Name	INTERGARD 849 PART B
Product Code	EGA793
Reg Number	
Intended use	See Technical Data Sheet. For professional use only.
Application Method	See Technical Data Sheet.
Company Name	International Paint Stoneygate Lane Felling Gateshead Tyne and Wear NE10 OJY UK
Telephone No.	+44 (0)191 469 6111
Fax No.	+44 (0)191 438 3711
24 hour Emergency Telephone No.	+44 (0)191 469 6111
Official Advisory Body Telephone No.	+44 (0)870 600 6266 For Advice to Doctors & Hospitals only
Email	sds@internationalpaint.com

2. Hazard identification of the product

Flammable.
Harmful by inhalation and in contact with skin.
Risk of serious damage to eyes.
Irritating to respiratory system and skin.

Further information is given in section 11.

Safety Data Sheet

EGA793

INTERGARD 849 PART B

Version No. 14 **Date Last Revised** 06/08/08

3. Composition/information on ingredients

If the product contains substances that present a health hazard within the meaning of the Dangerous Substances Directive 67/548/EC, or have occupational exposure limits detailed in EH40, these substances are listed below.

Ingredient	EINECS	Concentration	Symbol(s)	Risk phrases (*)
1-methoxypropan-2-ol	203-539-1	2.5 - < 10		R10
Butan-1-ol	200-751-6	10 - < 25	Xn	R10,R22,R37/38,R41,R67
Ethylbenzene	202-849-4	2.5 - < 10	F,Xn	R11, R20
Ethylenediamine	203-468-6	0 - < 1	C	R10, R21/22, R34, R42/43
Xylene	215-535-7	10 - < 25	Xn	R10,R20/21,R38

* The full texts of the phrases are shown in section 16.

4. First aid measures

General

In all cases of doubt, or when symptoms persist, seek medical attention.

Never give anything by mouth to an unconscious person.

Inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eye Contact

Irrigate copiously with clean fresh water for at least 10 minutes, holding the eyelids apart and seek medical attention.

Skin Contact

Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognised skin cleanser. Do NOT use solvents or thinners.

Ingestion

If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

5. Fire-fighting measures

Recommended extinguishing media; alcohol resistant foam, CO^2. powder, water spray.

Do not use; water jet.

Note; Fire will produce dense black smoke. Decomposition products may be hazardous to health. Avoid exposure and use breathing apparatus as appropriate.

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water courses.

6. Accidental release measures

Remove sources of ignition, do not turn lights or unprotected electrical equipment on or off. In case of a major spill or spillage in a confined space evacuate the area and check that solvent vapour levels are below the Lower Explosive Limit before re-entering.

Ventilate the area and avoid breathing vapours. Take the personal protective measures listed in section 8.

Contain and absorb spillage with non-combustible materials e.g. sand, earth, vermiculite. Place in closed containers outside buildings and dispose of according to the Waste Regulations. (See section 13).

Clean, preferably with a detergent. Do not use solvents.

Do not allow spills to enter drains or watercourses.

If drains, sewers, streams or lakes are contaminated, inform the local water company immediately. In the case of contamination of rivers, streams or lakes the Environmental Protection Agency should also be informed.

Safety Data Sheet

EGA793

INTERGARD 849 PART B

Version No. 14 **Date Last Revised** 06/08/08

7. Handling and storage

Handling

This coating contains solvents. Solvent vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Areas of storage, preparation and application should be ventilated to prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the occupational exposure limits.

In Storage

Handle containers carefully to prevent damage and spillage.

Naked flames and smoking should not be permitted in storage areas. It is recommended that fork lift trucks and electrical equipment are protected to the appropriate standard.

In Use

Avoid skin and eye contact. Avoid inhalation of vapours and spray mists. Observe label precautions. Use personal protection as shown in section 8.

Smoking, eating and drinking should be prohibited in all preparation and application areas.

Never use pressure to empty a container; containers are not pressure vessels.

All sources of ignition (hot surfaces, sparks, open flames etc) should be excluded from areas of preparation and application. All electrical equipment (including torches) should be protected (Ex) to the appropriate standard.

The product may charge electrostatically. Always use earthing leads when pouring solvents and transferring product. Operators should wear clothing which does not generate static (at least 60% natural fibre) and antistatic footwear; floors should be of conducting type.

Activities such as sanding, burning off etc. of paint films may generate dust and/or fumes hazardous to the skin and lungs. Work in well ventilated areas. Use local exhaust ventilation and personal skin and respiratory protective equipment as appropriate.

Storage

Store in a well ventilated, dry place away from sources of heat and direct sunlight.

Store on concrete or other impervious floor, preferably with bunding to contain any spillage. Do not stack more than 3 pallets high.

Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in the original container or one of the same material.

Prevent unauthorised access.

The requirements of the Highly Flammable Liquids and Liquified Petroleum Gases Regulations apply if the flashpoint is between 21°C and 32°C.

8. Exposure controls and personal protection

Engineering Measures

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapour below occupational exposure limits suitable respiratory protection must be worn.

Exposure Limits

The following workplace exposure limits have been established by the Health and Safety Executive as published in EH40.

Material	Short term (15 min. ave)		Long term (8hr TWA)		Comments
	ppm	mg/m³	ppm	mg/m³	
1-methoxypropan-2-ol	150	560	100	375	+
Butan-1-ol	50	154	-	-	+
Ethylbenzene	125	552	100	441	+
Xylene	100	441	50	220	+

For Key to entries in 'Comments' column see Section 16

Personal Protection

Respiratory Protection

If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators. When spraying this product use a respiratory mask with charcoal and dust filters (as filter combination A2-P2). In confined spaces use compressed air or fresh air respiratory equipment.

Eye Protection

Wear safety eyewear, e.g. safety spectacles, goggles or visors to protect against the splash of liquids. Eyewear should comply with British Standard 2092.

Hand Protection

Nitrile rubber gloves should be worn during mixing and application.

Skin Protection

Overalls which cover the body, arms and legs should be worn. Skin should not be exposed. Barrier creams may help to protect areas which are difficult to cover such as the face and neck. They should however not be applied once exposure has occurred. Petroleum jelly based types such as Vaseline should not be used. All parts of the body should be washed after contact.

Safety Data Sheet

EGA793

INTERGARD 849 PART B

Version No. 14 **Date Last Revised** 06/08/08

9. Physical and chemical properties

Physical State	Liquid
Flash Point (deg C)	26
Viscosity (cSt)	735
Specific Gravity	0.985
Vapour Density	Heavier than air.
Lower Explosive Limit	1.1
Solubility in Water	Immiscible
R.A.Q. to ventilate to 10% of the LEL (m^3/l)	130

10. Stability and reactivity

Stable under recommended storage and handling conditions (see section 7). When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

Keep away from oxidising agents, strongly alkaline and strongly acid materials in order to avoid possible exothermic reactions.

11. Toxicological information

There are no data available on the preparation itself. The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and classified for toxicological hazards accordingly. See Sections 2 and 15 for details.

Exposure to solvent vapour concentrations from the component solvents in excess of the stated occupational exposure limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage.

12. Ecological information

There are no data available on the product itself.

The product should not be allowed to enter drains or water courses.

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and is not classified as dangerous for the environment

13. Disposal considerations

Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.

Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

The European Waste Catalogue Classification of this product, when disposed of as waste is 08 01 11 Waste paint and varnish containing organic solvents or other dangerous substances. If mixed with other wastes this code may no longer apply and the appropriate code should be assigned. For further information contact your local waste authority.

14. Transport information

Transport only in accordance with the following regulations:

ADR/RID UN1263 Paint, 3, III

IMDG	Class	3	Subsidiary Class
	Proper Shipping Name	PAINT	
	UN No	1263	
	Ems	F-E,S-E	
	Packaging Group	III	
	Marine Pollutant	No	

ICAO/IATA	Shipping Name	PAINT	
	Class	3	Subsidiary Class
	UN No	1263	
	Packaging Group	III	

15. Regulatory information

In accordance with EC Directive 88/379/EEC and the Chemicals (Hazard Information and Packaging for Supply) Regulations SI /3247/1994 this product is labelled as follows:

Symbol(s)

Harmful

Contains;

Xylene

R. Phrases;

Flammable.

Harmful by inhalation and in contact with skin.

Risk of serious damage to eyes.

Irritating to respiratory system and skin.

S. Phrases;

Do not breathe vapour/spray.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Wear suitable protective clothing, gloves and eye/face protection.

Use only in well-ventilated areas.

P. Phrases;

Contains 1,2-diaminoethane. May produce an allergic reaction.

Safety Data Sheet

EGA793

INTERGARD 849 PART B

Version No. 14 **Date Last Revised** 06/08/08

16. Other information

The information in this Health & Safety Data Sheet is required pursuant to Directive 91/155/EEC and the Chemicals (Hazard Information & Packaging for Supply) Regulations 1994.

Key to 'Comments' column in Section 8.
(+) There is a risk of absorption through unbroken skin.
(C) Capable of causing cancer and/or heritable genetic damage
(R) Suppliers recommended limit
(S) Capable of causing occupational asthma

The full text of the R phrases appearing in section 3 is:

R10 Flammable.

R11 Highly flammable.

R20 Harmful by inhalation.

R20/21 Harmful by inhalation and in contact with skin.

R21/22 Harmful in contact with skin and if swallowed.

R22 Harmful if swallowed.

R34 Causes burns.

R37/38 Irritating to respiratory system and skin.

R38 Irritating to skin.

R41 Risk of serious damage to eyes.

R42/43 May cause sensitisation by inhalation and skin contact.

R67 Vapours may cause drowsiness and dizziness

Leighs L489

PRODUCT HEALTH AND SAFETY DATA

1. IDENTIFICATION OF PREPARATION AND OF COMPANY

Full name Leighs L489 Zinc Phosphate Primer

Manufacturer

Leighs Paints, Tower Works,
Kestor Street,
Bolton,
United Kingdom
BL2 2AL

Telephone: +44 (0)1204 521771
Fax: +44 (0)1204 382115
Email: she@leighspaints.co.uk
Website: www.leighspaints.co.uk

Description An anticorrosive primer for spray, brush or roller application to steel surfaces. Based on an alkyd resin system with zinc phosphate and other inorganic pigments and containing white spirit solvent.

2. HAZARDS IDENTIFICATION

	R10	Flammable.
N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

The following ingredients have recognised health effects or exposure limits, and are present in concentrations above the limits laid down in the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 and amendments (CHIP 3.1).

Substance	Weight in Paint	Classification	Risk Phrases*	EINECS Number
White spirit	25-50%	N Xn	R53 R51 R65	265-185-4
trizinc bis(orthophosphate)	10-25%	N	R53 R50	231-944-3
2-Butoxyethanol	<2.5%	Xi Xn	R36/38 R20/21/22	203-905-0
1,2,4-trimethylbenzene	<1%	N Xi Xn	R53 R51 R36/37/38 R20	202-436-9

*For full details of R-phrases, see Section 16.

4. FIRST-AID MEASURES

In all cases of doubt, or where symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

Inhalation Remove to fresh air, keep patient warm and at rest. If breathing has stopped, administer artificial respiration. Give nothing by mouth. If unconscious, place in the recovery position and seek medical advice.

Eye contact Contact lenses should be removed. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart and seek medical advice.

Skin contact Remove contaminated clothing. Wash skin thoroughly with soap and water, or use a proprietary skin cleanser. Do NOT use solvents or thinners.

Ingestion If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Use alcohol resistant foam, carbon dioxide, dry powder or water spray/mist. Do NOT use water jet.

Recommendations

Fire will produce dense black smoke containing hazardous products of combustion (see Section 10). Exposure to decomposition products may be a hazard to health. Appropriate self-contained breathing apparatus may be required. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire-fighting to enter drains or water courses.

6. ACCIDENTAL RELEASE MEASURES

Exclude sources of ignition and ventilate the area. Exclude non-essential personnel. Avoid breathing vapours. Refer to protective measures listed in sections 7 and 8. Contain and collect spillages with non-combustible absorbent materials e.g. sand, earth, vermiculite, diatomaceous earth and place in a suitable container for disposal in accordance with the waste regulations (see Section 13). Do not allow to enter drains or water courses. Clean preferably with a detergent; avoid the use of solvents. If the product enters drains or sewers, the local water company should be contacted immediately; in the case of contamination of streams, rivers or lakes, the relevant environment agency.

7. HANDLING AND STORAGE

Handling

Vapours are heavier than air and may spread along floors. They may form explosive mixtures with air. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid concentrations higher than the workplace exposure limits.

Additionally the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard.

Keep the container tightly closed. Exclude sources of heat, sparks and open flame. Non-sparking tools should be used.

Required air quantity to ventilate to 10% of the LEL.	115 m^3/ltr

The above figure is given as a guide only. Ventilation and extraction must be arranged so that all parts of the workplace are properly ventilated i.e. there are no recesses or pockets where high vapour concentrations are allowed to build up.

If there is any doubt about the adequacy of the ventilation/extraction of solvent vapour, regular monitoring of confined workplaces should be carried out.

Avoid skin and eye contact. Avoid inhalation of vapour and spray mist. Smoking, eating and drinking should be prohibited in areas of storage and use.

For personal protection, see Section 8.

Never use pressure to empty; the container is not a pressure vessel.

Always keep in containers made of the same material as the supply container.

The accumulation of contaminated rags and dry overspray, particularly in spray booth filters, may result in spontaneous combustion.

Good housekeeping standards, regular safe removal of waste materials and regular maintenance of spray booth filters will minimise the risks of spontaneous combustion and other fire hazards.

The Manual Handling Regulations may apply to the handling of containers/packages of this product. The following guide weight indicators are given to enable users to carry out assessments.

Package	**Weight**
20 litre pail	28.0 – 30.0 kg
5 litre can	7.0 – 7.5 kg

Storage

The storage and use of this product is subject to the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR). The requirements are given in the HSE Approved Code of Practice and Guidance, Storage of Dangerous Substances: DSEAR.

Observe the label precautions. Store between 5°C and 25°C in a dry, well ventilated place away from sources of heat, ignition and direct sunlight. No smoking. Prevent unauthorised access. Containers which are open should be properly re-sealed and kept upright to prevent leakage.

The principles contained in the HSE guidance note Storage of Packaged Dangerous Substances should be observed when storing this product. Store separately from oxidising agents and strongly alkaline and strongly acidic materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and/or solvent vapours below the relevant workplace exposure limits, suitable respiratory protective equipment should be worn (see 'Personal Protection' below).

Exposure Limits

Workplace Exposure Limits have been established by the Health and Safety Commission or recommended by the supplier for certain of the ingredients. WELs are taken from the current version of EH40 except those marked 'Sup', which are assigned by the supplier of the substance.

	Workplace Exposure Limits		
Substance	**8 hr TWA[1]**	**15 min STEL[2]**	**Notes**
1,2,4-trimethylbenzene	25ppm		
2-Butoxyethanol	25ppm	50ppm	Sk[3]
White spirit	600mg/m³(OEL_{sol})		

[1]	Long term exposure limit - 8 hour time weighted average.
[2]	Short term exposure limit - 15 minute reference period.
[3]	There is a risk of absorption through unbroken skin.
OEL_{sol}	Occupation exposure limit of the hydrocarbon solvent mixture (set by supplier).

Further guidance on WELs and the assessment of workplace exposure to harmful materials, including mixed exposures, is given in HSE Guidance Note EH40.

Personal Protection

All personal protective equipment, including respiratory protective equipment, used to control exposure to hazardous substances must be selected to meet requirements of the COSHH Regulations.

Respiratory Protection The exposure of the sprayer or other people nearby must be controlled to below the Workplace Exposure Limits. If this is not possible, and engineering controls and methods

cannot reasonably be improved, suitable certified respirators must be worn. If application is to take place in a confined space air-fed respiratory protective equipment should be worn.

Dry-sanding, flame cutting and/or welding of the dry paint film will give rise to dust and/or hazardous fumes. Wet sanding should be used wherever possible. If exposure cannot be avoided by the provision of local exhaust ventilation, suitable respiratory protective equipment should be used.

Hand Protection When skin exposure may occur, advice should be sought from glove suppliers on appropriate types.

The instructions and information provided by the glove supplier on use, storage, maintenance and replacement must be followed.

Barrier creams may help to protect exposed areas of skin but are not substitutes for full physical protection. They should not be applied once exposure has occurred.

Eye Protection Eye protection designed to protect against liquid splashes should be worn.

Skin Protection Cotton or cotton/synthetic overalls or coveralls are normally suitable. Grossly contaminated clothing should be removed and the skin washed with soap and water or a proprietary skin cleanser.

Regular skin inspection of users of this product is recommended. Always wash your hands before eating, smoking or using the toilet.

Environmental Exposure Controls

See Section 12 for detailed information.

9. PHYSICAL PROPERTIES

Physical State	Viscous liquid
Odour	Characteristic odour
Colour	Various
Density	1.3 g/cm^3
Viscosity	3.8 – 5.2 poise BS3900:Part A7 at 25°C
Flash Point	38°C
Volatile Organic Content	300 g/kg
Explosion Limit - lower	0.6%
Water Solubility	Immiscible
Boiling Point	150°C

10. STABILITY AND REACTIVITY

Stable under the recommended storage and handling conditions (see Section 7).

In a fire, hazardous decomposition products such as smoke, carbon monoxide, carbon dioxide and oxides of nitrogen may be produced.

Keep away from oxidising agents and strongly alkaline and strongly acidic materials to prevent the possibility of exothermic reaction.

11. TOXICOLOGICAL INFORMATION

There is no data available on the product itself.

Exposure to organic solvent vapours may result in adverse health effects such as irritation of the mucous membrane and the respiratory system and adverse effects on the renal and central nervous systems. Symptoms include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases loss of consciousness.

Solvents may cause some of the above effects by absorption through the skin.

Repeated or prolonged contact with the product may lead to removal of natural fats from the skin resulting in non-allergic contact dermatitis and absorption through the skin. Splashes in the eye may cause irritation and reversible local damage.

Ingestion may result in the following effects: sore throat, abdominal pain, drowsiness, nausea, vomiting and diarrhoea. Other effects may be as described for exposure to vapours.

Contains methyl ethyl ketoxime. May produce an allergic reaction.

12. ECOLOGICAL INFORMATION

There is no data available on the product itself.

The product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters.

The product has been assessed following the conventional method in CHIP and is classified as for ecological hazards accordingly. See Sections 3 and 15 for details.

The following information is available on the individual substances that are hazardous to the environment.

Substance	Property	Details
White spirit	Mobility	Surface tension: <25.0 mN/m at 40°C.Film formed on water may affect oxygen transfer.
	Persistence and Biodegradability	Readily biodegradable.
trizinc bis(orthophosphate)	No data available	
1,2,4-trimethylbenzene	No data available	

13. DISPOSAL CONSIDERATIONS

Do not allow to enter drains or water courses, or dispose of where ground or surface waters may be affected.

The classification of this product, when disposed of as waste is 08 01 11*. If this product is mixed with other wastes, this code may no longer apply. If mixed with other wastes, the appropriate code should be assigned. For further information contact your local waste authority.

Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.

Using information provided in this data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers.

14. TRANSPORT INFORMATION

Transport within the user's premises

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport Classification

UN Number	1263	Shipping Name	PAINT		
Trem Card	30GF1-III	Technical Name	-		
Pri. Haz. Class	3	Sub. Haz. Class		Packing Group	III
Marine EmS	F-E,S-E	Marine Pollutant	Yes		

This information does not apply to carriage by air. Please contact the Export Department of Leighs Paints if transport by air is required.

15. REGULATORY INFORMATION

The product has been classified and labelled for supply in accordance with the CHIP 3 regulations as follows:-

Dangerous for the environment

Contains methyl ethyl ketoxime. May produce an allergic reaction.
Flammable.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Do not breathe vapour/spray.
In case of insufficient ventilation, wear suitable respiratory equipment.
Use appropriate containment to avoid environmental contamination.
This material and/or its container must be disposed of as hazardous waste.
Avoid release to the environment. Refer to special instructions/safety data sheet.

The information contained in this data sheet does not constitute the user's own assessment of workplace risks as required by other health and safety legislation.

The provisions of the Health and Safety at Work etc. Act and the Control of Substances Hazardous to Health Regulations apply to the use of this product at work.

16. OTHER INFORMATION

Full details of R-phrases are as follows:-

R20	Harmful by inhalation.
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
R36/37/38	Irritating to eyes, respiratory system and skin.
R36/38	Irritating to eyes and skin.
R50	Very toxic to aquatic organisms.
R51	Toxic to aquatic organisms.
R53	May cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.

The information in this data sheet is provided in accordance with the requirements of the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002.

The product should not be used for purposes other than those shown in Section 1 without first referring to the supplier and obtaining written handling instructions. As the specific conditions of use are outside the supplier's control, the user is responsible for ensuring the requirements of relevant legislation are complied with.

The information contained in this data sheet is based on the present state of knowledge and current national legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

Further information and relevant advice can be found in:

The Chemical (Hazard Information and Packaging for Supply) Regulations 2002 (SI 2002:1689) and amendments.

Control of Pollution Act 1974.

Health and Safety at Work etc. Act 1974

Control of Pollution (Amendment) Act 1989.

Environmental Protection Act 1990

Dangerous Substances and Explosive Atmospheres Regulations 2002 (SI 2002:2776).

Control of Substances Hazardous to Health Regulations 2002 (SI 2002:2677) and amendments.

Environmental Protection (Prescribed Processes and Substances) Regulations 1991 (SI 1991:472) and amendments.

Manual Handling Operations Regulations 1992 (SI 1992:2793)

Environmental Protection (Duty of Care) Regulations 1992 (SI 1992:2839)

The Approved Code of Practice: Provision and Use of Work Equipment Regulations 1998, L22.

Personal Protective Equipment at Work Regulations 1992 (SI 1992:2966)

Spraying of Highly Flammable Liquids, HSG178

Workplace Exposure Limits, EH40 (revised annually)

Surveillance of People Exposed to Health Risks at Work (ISBN 0 11 8855743).

The storage of flammable liquids in containers, HSG51

Chemical warehousing: the storage of packaged dangerous substances, HSG71

The Approved Classification and Labelling Guide (Fifth Edition), L131.

The Approved Supply List, L142.

The Approved Code of Practice: The Compilation of Safety Data Sheets (Third Edition), L130.

Hazardous Waste (England and Wales) Regulations 2005 (SI 2005:894).

The interpretation and use of flashpoint information, CS24

COSHH Essentials: easy steps to control chemicals, HSG193. Details of available Control Guidance Sheets, which may be relevant to the particular conditions of use, can also be found in HSG193.

Assessing and managing risks at work from skin exposure to chemical agents, 2001, HSG205.

Cost and effectiveness of chemical protective gloves for the workplace, 2001, HSG206.

Choice of skin care products for the workplace, 2001, HSG207.

The safe use and handling of flammable liquids, 2002, HSG140.

The selection, use and maintenance of respiratory protective equipment, 1998, HSG53.

Working safely with solvents, 1998, INDG273

The Carriage of Dangerous Goods by Road Regulations 1996 (SI 1996:2095).

General Ventilation in Workplace - Guidance for Employers, 2002, HSG202.

Pollution Prevention and Control Act 1999

Technical Guidance WM2. Hazardous Waste.

Solvent Emission, England and Wales, Regulations 2004 (SI 2004:107).

Process Guidance Note 6/23 (04)

Secretary of State's Guidance for Coating of Metal and Plastic Processes.

Pollution Prevention and Control Act 1999.

Environment Act 1995.

List of Wastes (England) Regulations 2005 (SI 2005:895) and amendment SI 2005:1673.

Management of Health and Safety at Work Regulations 1999 (SI 1999:3242)

Selecting RPE INDG264