



Ministry
of Defence

Defence Equipment and Support
Secretariat
#2043 Maple 0a
Ministry of Defence
Abbey Wood
Bristol BS34 8JH



Email: DES SEC-PolSec LE-JSC-WPNS@mod.uk

██████████
Email: ██████████

Our Reference:
FOI2022/10123
Date:
14 September 2022

Dear ██████████,

Thank you for your email of 30 August 2022, requesting the following information:

im investigating on asbestos in aircraft carrier ships disposals.

How much asbestos have been found in scrapping of ex HMS Ark Royal? disposed by LEYAL Ship company, in Aliaga/Turkey 2013.

if allowed could you please also share the hazardous material report (the one ypu are supposed to send to leyal)

and brekdown of waste, with final dismantle report please?

if allowed, i would like to ask the hazardous materiel document while sale? before dismantled

I am treating your correspondence as a request for information under the Freedom of Information Act 2000 (FOIA).

A search for the information has now been completed within the Ministry of Defence (MOD), and I can confirm that information in scope of your request is held.

This is attached as follows:

- Annex A: Former HMS Ark Royal Inventory of Hazardous Materials
- Annex B: Breakdown of waste

Some of the information you have requested has previously been published; Section 21(1) of the FOI Act provides that information is exempt if it is reasonably available by other means. The final report on the recycling of the former HMS Ark Royal can be accessed at the Government publications website via the following link:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/360793/20140926-Ex-HMS_Ark_Royal.pdf

Defence Equipment & Support

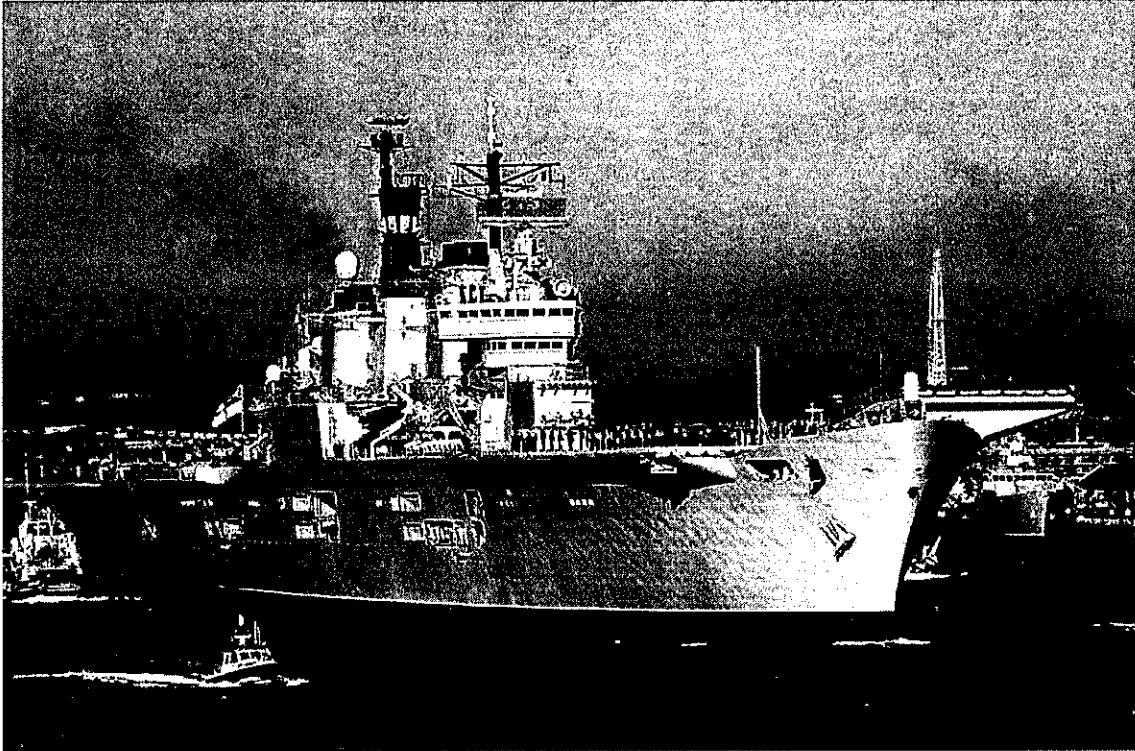
If you have any queries regarding the content of this letter, please contact this office in the first instance. If you wish to complain about the handling of your request, or the content of this response, you can request an independent internal review by contacting the Information Rights Compliance team, Ground Floor, MOD Main Building, Whitehall, SW1A 2HB (e-mail CIO-FOI-IR@mod.gov.uk). Please note that any request for an internal review should be made within 40 working days of the date of this response.

If you remain dissatisfied following an internal review, you may raise your complaint directly to the Information Commissioner under the provisions of Section 50 of the Freedom of Information Act. Please note that the Information Commissioner will not normally investigate your case until the MOD internal review process has been completed. The Information Commissioner can be contacted at: Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, Cheshire, SK9 5AF. Further details of the role and powers of the Information Commissioner can be found on the Commissioner's website at <https://ico.org.uk/>.

Yours sincerely,

DE&S Policy Secretariat

FORMER HMS ARK ROYAL



Picture for illustration only

INVENTORY OF HAZARDOUS MATERIALS

Name of Vessel	Ship Type	Pennant No	Gross Tonnage	Net Tonnage	Current Tonnage	Light Weight
ARK ROYAL	Carrier Vertical Strike (CVS)	RO5	28766	8629		16000

Ministry of Defence Design Authority and Platform Duty Holder Mr Kevin Barry CEng FIMechE Ship Support Alliance - DDAmph Strategic Class Authority Team Leader Defence Equipment and Support Birch 2c, #3229 MOD Abbey Wood Bristol BS34 8JH

Date or period of Inventory	Original 26 Nov 2010, Final 15 Apr 2013
Name of Inventory Engineers	Babcock Safety Engineering Group (reference "L")
Name of Final Inventory Coordinator	R M Lane, Officer In Charge MoD Disposal & Reserve Ships Organisation
Signature Officer In Charge, MoD Disposal & Reserve Ships Organisation	
Date of Inventory Transfer from MoD	
Received by	
Representing	
Signed :	

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Main ship particulars are summarised below:

Ships Identification Number (IMO Number)	8949575
Hull Number	03
Ships Name / Type of Ship	HMS ARK ROYAL / Carrier Vertical Strike
Operating Authority / Base Port	Naval Command / Portsmouth
Ship Owner – HM Government; represented by:	Ship Support Alliance - DDAmph Strategic Class Authority Defence Equipment and Support Birch 2c, #3229 MOD Abbey Wood Bristol BS34 8JH
Ship Classification	100A1 NS1 Aircraft Carrier: SA1, ES, AIR, TLA, RSA2:MD 69TON
Length and Beam	Length OA 209.1m Beam 36m (extreme)
Depth (Moulded) to 1 Dk Amidships	15.79 metres
Ship Builder	Swan Hunter Shipbuilders Ltd - 1982

Ship Particulars

References

- A. Marine Environment Protection Committee - MEPC 58/3/2 (2 July 2008) and 62/24 (15 July 2011) – Revised *IMO Guidelines on Ship Recycling*
- B. Disposal Lists Ships Manual Volume 1
- C. Joint Services Publication 418 – MoD Environmental Manual
- D. DiN 2009DiN06-027 – MoD Ship Disposal Policy.
- E. BR 2203(2) Vol 2 – Ships Husbandry Manual – Paint and the Painting Process
- F. Basel Convention – PCB, PCT, & PBB and UNEP (1999) Technical Guidelines.
- G. Case Chemicals - Asbestos Management Survey Report – Project Number 4077 dated 25 May 2011 (copy provided)
- H. MoD Radioactive Clearance certificate Reference SRSS ARO 0711 dated 4 July 2012. (copy provided)
- I. Stability assessment, MoD CSS-ISS IPT email
- J. ECC Council Regulation No. EU1013/2006
- K. Selective PCB sampling tests: Lucion Report No. 22168242 dated 22 March 2012.
- L. Babcock “Green Passport” March 2011. DSA Task 5203, Document Issue 1, number TD/SEG/DSA/5203/10/01.
- M. United Nations Environment Programme Guidelines for Identification of PCB and materials Containing PCB's (1st Edition 1999).
- N. Attachment 1 to ARK DRSM Form 1 dated 26 May 2011. (copy will be provided with signed inventory of hazards).
- O. Enclosure 13 to DRSM Form 1 – “State of Tanks” dated 27 February 2012. (copy provided).
- P. Polybrominated Diphenyl Ethers (PBDE). University of Birmingham report dated 20 June 2012.

SUMMARY of INVENTORY FINDINGS

<i>ITEM</i>	<i>REMARKS</i>
Overall	Ship was prepared for disposal using MoD disposal instructions at References B and D. Entered dead ship custody 26 may 2011. Ship fabric is generally sound. Underwater openings are wire locked shut with the exception of storm drains and scuppers. Propellers blading is partially removed.
Asbestos	Reference G. A relatively small asbestos bearing as a percentage of ship volume and weight. The survey reveals that asbestos content is primarily as asbestos rope gaskets in the funnel gas uptakes spaces.
Paint	Non - TBT paint on underwater hull a non-tin based coating has been applied – small areas in way of the docking blocks may have TBT residual on them. Paint specification is listed in this inventory at section 1B
PCB	Liquid PCB is not used in HM Ships. Representative electrical cables have been sampled and the results reveal levels many times below the 50 mg/kg threshold level. (References K and M)
Electronics Beryllium and Radiation	Much of the ship's electronic outfit has been removed for re-use. Beryllium bearing materials may remain in the locations listed in this inventory. Care should be taken when dismantling these components. Radioactive sources removed (Reference H)
Cadmium	Should be presumed as trace on some fastenings and electrical components.
Gases	Residual R12/R134a refrigerant remains in sealed units in cold counters and ice machines and are listed at Reference. N. Main fridge and air conditioning machinery and systems have been de-gassed . Some hydraulic accumulators have bladders pressurised with nitrogen gas within. Care should be taken when disassembling.
Fuels and Oils	Reference O. Bulk Fuels removed, tanks ballasted with clean fresh to achieve stability. Residuals are estimated in this inventory.
COSHH	Every effort has been made to remove Control of Substances harmful to Health (COSHH) items.
Ammunition	Ammunition removed. However stray round risk is possible since ship is a warship that has deployed in combat.

Part 1. Potentially Hazardous Materials in the Ship's Structure and Equipment

1A.i. Asbestos

Type of Asbestos Materials (Board, Pipe Lagging, Contained)	Location	Approximate Quantity /
Reference G Chrystotile rope gaskets.	M and J ship sections gas turbines – exhaust gas uptakes 6 deck to funnel.	Although the survey identified 4 locations of such gaskets they should be presumed as existing throughout the length of both funnels on all exhaust pipework.
Reference G. Extensive sampling (on an enhanced “Management” type survey revealed no other sources of asbestos. Notwithstanding the findings of the survey, Compressed Asbestos Fibre (CAF) gaskets should be presumed in high temperature machinery, related exhaust pipe flanges and steam systems pipe flanges.	Auxiliary Boilers After Gear Room. Diesel Engines: Fwd Eng Rm, Aft Eng. Rm. Forward and After Gear Rooms. Salvage diesels 3N1 and 3K1 compartments.	Not found in survey.

1B. Paint (On vessels structure) - Additives

Additive (Lead, Tin, Cadmium, Organotins (TBT's), Arsenic, Zinc, Chromium, Strontium, Other) % Concentration / Risk Phrase	Manufacture and Product Name	Location
No product information available	Lead Based Primer (See Paragraph 5.2.4)	Superstructure: It should be assumed that areas of paintwork on HMS ARK ROYAL that were not removed during the subsequent refits/repaints since build may contain lead
No product information available	Zinc Chromate Primer (See Paragraph 5.2.5)	BR 3939(3) CVS Class Hull Preservation Specification Original 7.86) identifies Zinc Chromate priming and Zinc spray undercoating throughout areas of ship. Internal Areas: It should be assumed that areas of paintwork on HMS ARK ROYAL that were not removed during the subsequent refits/repaints since build may contain Zinc Chromate
No product information available	Tin Based Antifouling Paint	Underwater Areas: Hull There is a possibility of the original Tin Based Antifouling paint remaining in the way of the areas covered by Dock Blocks during subsequent repaints. Estimated 120 sq m.
<u>Part A</u> <u>1,2,4-trimethylbenzene</u> 1 < 2.5% R10,R20, R36/37/38, R51-53 <u>Butan-1-ol</u> 2.5 < 10% R10,R22, R37/38, R41, R67 <u>Epoxy Resin</u> 2.5 < 50% R36/38, R43, R51-53 <u>Ethylbenzene</u> 2.5 < 10% R11, R20 <u>Solvent naphtha</u> (petroleum), light aromatic 2.5 < 10% R51-53, R65 <u>Xylene</u> 10 < 25% R10,R20/21,R38	International Marine Coatings Intershield 300 Universal Primer	Underwater Areas: Hull, Boot-Top, Sea Tubes and Inlet Gratings

Additive (Lead, Tin, Cadmium, Organotins (TBT's), Arsenic, Zinc, Chromium, Strontium, Other) % Concentration / Risk Phrase	Manufacture and Product Name	Location
<u>Part B</u> <u>Butan-1-ol</u> 10 < 25% R10,R22, R37/38, R41, R67 <u>Ethylbenzene</u> 2.5 < 10% R11, R20 <u>Ethylenediamine</u> 0 < 1% R10, R21/22, R34, R42/43 <u>Xylene</u> 25 < 50% R10,R20/21,R38		
<u>Part A</u> <u>5-Methylhexan-2-One</u> 10 - < 25% R20	International Marine Coatings Intersleek 737 Tie Coat for Intersleek 970 Parts A/B and C	Underwater Areas: Hull
<u>Part B</u> <u>Trimethoxysilylpropyl)Ethylenediamine</u> 2.5 - < 10% R36/38, R43, R52-53 <u>2-Butanone Oxime</u> 1 - < 2.5% R21, R40, R41, R43 <u>5-Methylhexan-2-One</u> 10 - < 25% R10, R20 <u>Methyltris(Methylethylketoxime)Silane</u> - 2.5 - < 10% R36/38, R43		
<u>Part C</u> <u>(Trimethoxysilylpropyl)Ethylethylenediamine</u> 1 - < 2.5% R36/38, R43, R52-53 <u>Diocyltindilaurate</u> 0 - < 1% <u>Ethylbenzene</u> 10 - < 25% R11, R20 <u>Xylene</u> 50 – 100% R10,R20/21,R38		
<u>Part A</u> <u>Ethylbenzene</u> 1 - < 2.5% R11, R20 <u>Xylene</u> 7 2.5 - < 10% R10,R20/21,R38	International Marine Coatings Intersleek 970 TBT Free Antifouling Top Coat	Underwater Areas: Hull

Additive (Lead, Tin, Cadmium, Organotins (TBT's), Arsenic, Zinc, Chromium, Strontium, Other) % Concentration / Risk Phrase	Manufacture and Product Name	Location
<u>Part B</u> <u>Ethylbenzene</u> 10 - < 25% R11, R20 <u>Tetraethyl Orthosilicate</u> 1 - < 2.5% R10,R20,R36/37 <u>Xylene</u> 50 – 100% R10,R20/21,R38		
<u>Part C</u> <u>Diocetylindilaurate</u> 10 - < 25% Pentane-2,4-Dione 50 – 100% R10, R22		
<u>1,2,4-trimethylbenzene</u> 2.5 - < 10% R10,R20,R36/37/38,R51-53 <u>1,3,5-trimethylbenzene</u> 1 - < 2.5% R10, R37, R51-53 <u>Benzyl Alcohol</u> 2.5 - < 10% R20/22 <u>Epoxy resin</u> 2.5 - < 10% R36/38, R43, R51-53 <u>Solvent naphtha</u> (petroleum), light aromatic 10 - < 25% R51-53, R65	International Marine Coatings Intergard 263 Tie Coat for Intersmooth 7460	Boot-Top, Sea Tubes and Inlet Gratings
<u>Butan-1-ol</u> 1 < 2.5% R10,R22, R37/38, R41, R67 <u>Ethylbenzene</u> 0 < 1% R11, R20 <u>Xylene</u> 10 < 25% R10,R20/21,R38 <u>Copper (I) Oxide</u> 25 < 50% R22 R50-53 <u>Copper Pyrithione</u> 2.5 < 10% R22 R26,R38, R41 <u>N, N¹-16hEXnediylbis (12-Hydroxyocladecanamide)</u> 0<1% R10/R20/21, R38	International Marine Coatings Intersmooth 7460 TBT Free Anti fouling Top Coat	Boot-Top, Sea Tubes and Inlet Gratings

Additive (Lead, Tin, Cadmium, Organotins (TBT's), Arsenic, Zinc, Chromium, Strontium, Other) % Concentration / Risk Phrase	Manufacture and Product Name	Location
Part A <u>Trizinc Bis(Orthophosphate)</u> 10-25% R53, R50 <u>Butanone</u> 10-25% R36,R66, R67 <u>Epoxy Resin</u> 10-25% R36/38,R43, R51, R53 <u>1-methoxy-2-propanol</u> 2.5-10% R20/21,R38 <u>Iso-butanol</u> <1%Epoxy Resin 25 - 50% R36/38,R43, R51, R53	Leighs Paints Epigrip M111 Wet Blast Primer	Decks of compartments containing water cooled electronic cabinets, Fwd Intermediate Shaft, Gas turbine Uptakes, Casing surfaces behind insulation, Main wheel Shaft.
Part B <u>Polyaminoamide</u> 25-50% R53, R50, R38, R41, R43 <u>Butanone</u> 25-50% R36,R66, R67 <u>Xylene</u> 10 - 25% R20/21,R38 <u>2,4,6- Tris (Dimethylaminomethyl) Phenol</u> 10 - 25% R22, R36/38 <u>Triethylenetetramine</u> <2.5% R52, R53, R34, R43, R21	Leighs Paints Epigrip M111 Wet Blast Primer	Decks of compartments containing water cooled electronic cabinets, Fwd Intermediate Shaft, Gas turbine Uptakes, Casing surfaces behind insulation, Main wheel Shaft.
Part A <u>Toluene</u> 25-50% R67, R63, R38, R48/20, R65 <u>Trizinc Bis(Orthophosphate)</u> 10-25% R53, R50 <u>Epoxy Resin</u> 10-25% R36/38,R43, R51, R53 <u>Propan-2-ol</u> 10-25% R67, R36 Part B <u>Toluene</u> < 50% R67, R63, R38, R48/20, R65 <u>Propan-2-ol</u> 10-25% R67, R36 <u>Triethylenetetramine</u> <2.5% R52, R53, R34, R43, R21	Leighs Paints Metagard L574 Blast Primer	Sponson Deck, 02,03,04,05 Weather Decks, Flight Deck, Hangar Deck, Machinery Spaces above the brown line, Wet Compartments, Bilges – Zinc metal sprayed (hand prepared), Cleansing Stations and Bathrooms used as emergency Cleansing Stations, Decks of compartments containing water cooled electronic cabinets, Fwd Intermediate Shaft, Gas turbine Uptakes, Casing surfaces behind insulation, Main wheel Shaft, Fairness to form Outer Bottom (Filler)
Part A <u>Epoxy Resin</u> 25 - 50% R36/38,R43, R51, R53 <u>Xylene</u> 10 - 25% R20/21,R38	W &J Leigh &Co EPIGRIP C425 Zinc Phosphate Primer Surface preparation	Ships side and Transom, Superstructure, Sponson Deck, 02,03,04,05 Weather Decks, Flight Deck, Hanger Deck,

Additive (Lead, Tin, Cadmium, Organotins (TBT's), Arsenic, Zinc, Chromium, Strontium, Other) % Concentration / Risk Phrase	Manufacture and Product Name	Location
<u>Part B</u> <u>Benzyl Alcohol</u> 25 - < 30% R20/22 <u>Nonylphenol</u> 2.5 - 25% R22, R34, R50/53 <u>Xylene</u> 10 - 25% R20/21,R38 <u>4,4'- Methylenebis (cyclohexamine)</u> 2.5 - < 10% R22, R35, R37, R43, R51, R53 <u>2,4,6- Tris (Dimethylaminomethyl) Phenol</u> 10 - 25% R22, R36/38		Interior Wet Compartments – Deckheads and Bulkheads, Interior Dry Compartments – Deckheads and Bulkheads, Interior Steel Decks, Cleansing Stations and Bathrooms used as emergency Cleansing Stations, Gas turbine Modules – Internals
<u>1,2,4 – Trimethylbenzene</u> <10 - 25% R20, R36/37/38, R51, R53 <u>White Spirit</u> <10 - 25% R51, R53,R65	W &J Leigh &Co LEIGH M671 Alkyd Resin Undercoat Surface preparation	Ships side and Transom, Superstructure.
<u>Part A</u> <u>Epoxy Resin</u> 25 - 50% R36/38,R43, R51, R53 <u>Xylene</u> 10 - 25% R20/21,R38 <u>Iso-butanol</u> <1%Epoxy Resin 25 - 50% R36/38,R43, R51, R53	W &J Leigh &Co Epidek M339 Hi-Profile Anti-Slip two pack epoxy resin Deck Paint	Flight Deck Painting
<u>Part B</u> <u>Lead Chromates</u> .>1% R33, R40, R53, R61, R62 <u>Epoxy Resin</u> 10 - 25% R36/38,R43, R51, R53 <u>Xylene</u> 10 - 25% R20/21,R38 <u>Iso-butanol</u> <1%Epoxy Resin 25 - 50% R36/38,R43, R51, R53		
<u>Part A</u> <u>Epoxy Resin</u> 2.5 - 10% R36/38,R43, R51, R53 <u>Xylene</u> 2.5 - 10% R20/21,R38 <u>1,2,4-trimethylbenzene</u> 2.5 – 10% R53,R51,R36/37/38,R20 <u>Solvent Naphtha</u> 2.5 – 10% R65 <u>Propylbenzene</u> <1% R37, R51, R53, R65	W &J Leigh &Co Epidek M377 Profiled two pack epoxy resin Flight Deck Paint W &J Leigh &Co Epidek M377 Profiled two pack	Hangar Deck Painting

Additive (Lead, Tin, Cadmium, Organotins (TBT's), Arsenic, Zinc, Chromium, Strontium, Other) % Concentration / Risk Phrase	Manufacture and Product Name	Location
<u>Part B</u> <u>Lead Chromates</u> >1% R33, R40, R53, R61, R62 <u>Epoxy Resin</u> 2.5 - 10% R36/38,R43, R51, R53 <u>Xylene</u> .5 - 10% R20/21,R38 <u>1,2,4-trimethylbenzene</u> 2.5 – 10% R53,R51,R36/37/38,R20 <u>Solvent Naphtha</u> 2.5 – 10% R65 <u>Propylbenzene</u> <1% R37, R51, R53, R65	epoxy resin Flight Deck Paint	
<u>Part A</u> <u>Diethelene Glycol Mono-Butyl Ether Acetate</u> 2.5 - 10% R36/38 <u>Tetraethylpentamine</u> 2.5 - 10 % R34, R51, R53, R43, R21/22 <u>Part B</u> <u>Epoxy Resin</u> >50% R36/38,R43, R51, R53 <u>Bisphenal F Epichlorohydrin</u> 10 - < 25% R36/38,R43, R51, R53	W &J Leigh &Co BIOGUARD M630 Water Based Epoxy Gloss Top Coat	Interior Wet Compartments - Deckheads and Bulkheads, Interior Dry Compartments - Deckheads and Bulkheads, Interior Steel Decks, Engine Casings, Gear Box Covers, Medical Compartments:- Deckheads, Bulkheads and ships sides insulated with Mineral Fibre Board.
<u>Propane -1, 2-diol</u> <2.5% <u>Poly Hydroxyl-Phosphate</u> , <1% <u>Ammonium Salt</u> <1%	W &J Leigh &Co Envirogard M770 Water Based Finish Top Coat	Dry Compartments: Deckheads and Bulkheads wood; Dry Compartments: Deckheads and Bulkheads Lined or Insulated – Back of plywood; Dry Compartments: Face of plywood linings, Medical Compartments, wooden Surrounds Wet Compartments: Unlined and Insulated – Wood Sea Water and Fresh Water Pipework Lagging, general Lagging and Lining;

Additive (Lead, Tin, Cadmium, Organotins (TBT's), Arsenic, Zinc, Chromium, Strontium, Other) % Concentration / Risk Phrase	Manufacture and Product Name	Location
<p><u>Part A</u> <u>Epoxy Resin</u> 10 - 25% R36/38,R43, R51, R53 <u>1,2,4 – Trimethylbenzene</u> 2.5 - 10% R20, R36/37/38, R51, R53 <u>Solvent Naphta (Petroleum)</u> 2.5 - 10% R65 <u>1-Methoxy-2-pronanol</u> 2.5 - 10% <u>Xylene</u> 2.5 - 10% R20/21,R38 <u>Propylbenzene</u> <1% R37, R51, R53, R65</p>	<p>W &J Leigh &Co EPIGRIP L524 Abrasion Resistant Epoxy Resin Coating Primer/Top Coat Surface Preparation/Finish</p>	<p>Decks of compartments containing water cooled electronic cabinets; Fwd Intermediate Shaft; Gas Turbine Uptakes; Casing Surfaces behind Insulation; Main Wheel Shaft; Bilges – Zinc metal sprayed (hand prepared); 10H1,10H2, 10L1, 10L2 Heel Tanks; Plenum Chambers; Watertight Compartments; Gas Turbine Filter Downtake; Gas Turbine Exhaust Upper; Main Shafting; Main Shaft Bulkhead Glands; Cable Lockers; Machinery Space Bilges.</p>
<p><u>Part B</u> <u>1,2,4 – Trimethylbenzene</u> 10 - 25% R20, R36/37/38, R51, R53 <u>Solvent Naphta (Petroleum)</u> 10 - 25% R65 <u>Xylene</u> 10 - 25% R20/21,R38 <u>Epoxy Resin</u> 2.5 - 10% R36/38,R43, R51, R53 <u>Polyethyleneamines</u> 2.5 - 10% R34, R50, R53, R43, R21/22 <u>2,4,6- Tris (Dimethylaminomethyl) Phenol</u> 2.5 - 10% R22, R36/38 <u>Propylbenzene</u> <2.5% R37, R51, R53, R65</p>		
<p><u>Part A</u> <u>Barium Chromate</u> 10 - 25% R20/22 <u>Epoxy Resin</u> 10 - 25% R36/38,R43, R51, R53 <u>1,2,4 – Trimethylbenzene</u> 10 - 25% R20, R36/37/38, R51, R53 <u>Solvent Naphta (Petroleum)</u> 10 - 25% R65 <u>1-Methoxy-2-pronanol</u> 10 - 25% <u>Xylene</u> 2.5 - 10% R20/21,R38 <u>Propylbenzene</u> <2.5% R37, R51, R53, R65</p>	<p>W &J Leigh &Co EPIGRIP H795 Epoxy Resin Primer Surface Preparation</p>	<p>Primer for Galvanised and Aluminium areas in dry and Wet compartments Comprising of:- Aluminium Alloy conduits for electrical cables; Copper and Copper Alloy Pipes; Boot Lockers; Dry Compartments: Deckheads and Bulkheads lined, unlined or insulated aluminium alloy/lining/fibre board and expanded plastic backings/facings;</p>

Additive (Lead, Tin, Cadmium, Organotins (TBT's), Arsenic, Zinc, Chromium, Strontium, Other) % Concentration / Risk Phrase	Manufacture and Product Name	Location
<p><u>Part B</u> <u>1,2,4 – Trimethylbenzene</u> <10 - 25% R20, R36/37/38, R51, R53 <u>1 – Methoxy -2- Propanol</u> 10 - 25% R36/38,R43, R51, R53 <u>Solvent Naphta (Petroleum)</u> 10 - 25% R65 <u>Propylbenzene</u> 2.5 - 10% R37, R51, R53, R65 <u>Polyethyleneamines</u> <2.5% R34, R50, R53, R43, R21/22 <u>2-Methoxypronanol</u> <1% R37/38,R41, R61</p>		<p>Dry Compartments: Metal Sprayed decks under false floors; Dry Compartments: Metal Structures beneath plastic coated fabrics; Electrical Equipment painted on board ship; Rod Gearing; Identification markings; Kit Lockers; Magazines; Bulkheads and Deckheads Medical Compartments; Cots and Stanchions; Mess Deck Furniture; Privacy Screens; Machinery Spaces above the brown line; Wet Compartments:- Lined and Insulated and Unlined and un-insulated :- Zinc metal spray, Galvanised Steel and Aluminium faces under the lining/insulation; Cleansing Stations and Bathrooms used as emergency Cleansing Stations.</p>
<p><u>Part A</u> <u>Epoxy Resin</u> 25 - 50% R36/38,R43, R51, R53 <u>Xylene</u> 2.5 - 10% R20/21,R38</p> <p><u>Part B</u> <u>2,4,6- Tris (Dimethylaminomethyl) Phenol</u> 25 - 50% R22, R36/38 <u>Xylene</u> 2.5 - 10% R20/21,R38 <u>Polyethyleneamines</u> 2.5 - 10% R34, R50, R53, R43, R21/22 <u>Butanone</u> 10 - 25% R36,R66, R67</p>	<p>W &J Leigh &Co EPIGRIP H735 High Build Epoxy Resin Primer Surface Preparation</p>	<p>Sludge Tanks; Sewerage Tanks</p>
<p><u>Part A</u> <u>Epoxy Resin</u> 25 - 50% R36/38,R43, R51, R53 <u>Xylene</u> 10 - 25% R20/21,R38</p>	<p>W &J Leigh &Co EPIGRIP H736 High Build Finish Top Coat</p>	<p>Sludge Tanks; Sewerage Tanks</p>

Additive (Lead, Tin, Cadmium, Organotins (TBT's), Arsenic, Zinc, Chromium, Strontium, Other) % Concentration / Risk Phrase	Manufacture and Product Name	Location
<u>Part B</u> <u>4,4 Diaminodiphenyl Methane</u> 25 - 50% R45, R68, R51, R53, R39/23/24/25, R43, R48/20/21/22 <u>Benzyl Alcohol</u> 10 - 25% R20/22 <u>Xylene</u> 10 - 25% R20/21,R38 <u>Butanone</u> 10 - 25% R36,R66, R67		
<u>Part A</u> <u>Epoxy Resin</u> 10 - 25% R36/38,R43, R51, R53 <u>1,2,4 – Trimethylbenzene</u> 2.5 - 10% R20, R36/37/38, R51, R53 <u>Solvent Naphta (Petroleum)</u> 2.5 - 10% R65 <u>1-Methoxy-2-pronanol</u> 2.5 - 10% <u>Xylene</u> 2.5 - 10% R20/21,R38 <u>Propylbenzene</u> <2.5% R37, R51, R53, R65 <u>Lead Chromates (certain Colours only)</u> <1% R33, R40,R50, R53, R61, R62	W &J Leigh &Co EPIGRIP H766 Epoxy Gloss Top Coat	Cleansing Stations and Bathrooms used as Emergency Cleansing Stations. NBCD Decks - Tiled areas
<u>Part B</u> <u>1,2,4 – Trimethylbenzene</u> <10 - 25% R20, R36/37/38, R51, R53 <u>1 – Methyloxy -2- Propanol</u> 10 - 25% R36/38,R43, R51, R53 <u>Solvent Naphta (Petroleum)</u> 10 - 25% R65 <u>2,4,6- Tris (Dimethylaminomethyl) Phenol</u> 2.5 - 10% R22, R36/38 <u>Propylbenzene</u> <2.5% R37, R51, R53, R65 <u>Polyethyleneamines</u> <2.5% R34, R50, R53, R43, R21/22		

Additive (Lead, Tin, Cadmium, Organotins (TBT's), Arsenic, Zinc, Chromium, Strontium, Other) % Concentration / Risk Phrase	Manufacture and Product Name	Location
<p><u>Part A</u> <u>Xylene</u> 10-25% R20/21,R38 <u>Bisphenol F-Epichlorohydrin</u> 10-25% <u>Epoxy Resin</u> 2.5-10% R36/38,R43, R51, R53 <u>1-Methoxy-2-Propanol</u> 2.5-10% R20/21,R38 <u>Epoxy Resin</u> <2.5 R36/38,R43, R51, R53 <u>Ethylbenzene</u> <2.5 Xn R20</p> <p><u>Part B</u> <u>4,4'-Diaminodiphenyl Methane</u> 25-50% R45, R68, R51, R53, R39/23/24/25, R43, R48/20/21/22 <u>Xylene</u> 25-50% R20/21,R38 <u>Triethylenetetramine</u> 10-25% R52, R53, R34, R43, R21 <u>Benzyl Alcohol</u> 10-25% R20/22 <u>1-Methoxy-2-Propanol</u> 2.5-25% R20/21,R38 <u>Salicylic Acid</u> 2.5-10% <u>Phenol</u></p>	<p>W &J Leigh &Co EPIGRIP M251 Tank Coating Primer Under Coat</p>	<p>Demineralised and Boiler Feed Water Tanks</p>
<p><u>Part A</u> <u>Trizinc Bis (Orthophosphate)</u> 10-25% <u>Butanone</u> 10-25% R36,R66, R67 <u>Epoxy Resin</u> 10-25% R36/38,R43, R51, R53 <u>1-Methoxy-2-Propanol</u> 10-25% R20/21,R38 <u>Iso-butanol</u> 10-25%</p> <p><u>Part B</u> <u>Polyaminoamide</u> 25-50% R53, R50, R38, R41, R43 <u>Butanone</u> 25-50% R36,R66, R67 <u>Xylene</u> 10 - 25% R20/21,R38 <u>(Dimethylaminomethyl) Phenol</u> 2.5-10%</p>	<p>W &J Leigh &Co EPIGRIP M253 Tank Coating Finish Top Coat</p>	<p>Demineralised and Boiler Feed Water Tanks</p>
<p>No Safety Data Sheets Available</p>	<p>Metaglo T45 Aluminium Finish Manufacturer Presumed</p>	<p>Gas Turbine Uptakes, surfaces beneath Lagging.</p>

Additive (Lead, Tin, Cadmium, Organotins (TBT's), Arsenic, Zinc, Chromium, Strontium, Other) % Concentration / Risk Phrase	Manufacture and Product Name	Location
<p><u>Part A</u> <u>Epoxy Resin</u> 10 - 25% R36/38,R43, R51, R53 <u>Epoxy Resin</u> 10 - 25% R36/38,R43 <u>1-Methoxy-2-propanol</u> 2.5 - 10% <u>Xylene</u> 2.5 - 10% R20/21,R38 <u>1,2,4 – Trimethylbenzene</u> 2.5 - 10% R20, R36/37/38, R51, R53 <u>Solvent Naphta (Petroleum)</u> 2.5 - 10% R65 <u>Propylbenzene</u> <1% R37, R51, R53, R65 <u>Iso-butanol</u> <1% R67, R37/38, R41 <u>Urea P/W formaldehyde, isobutylated</u> <1% R53 <u>Lead Chromates (certain Colours only)</u> >1% R33, R40,R50, R53, R61, R62</p>	<p>W &J Leigh &Co EPIGRIP M262 Two Part Epoxy Gloss Top Coat</p>	<p>Gas Turbine Module Internals</p>
<p><u>Part B</u> <u>Polyaminoamide</u> >50% R53, R50, R38, R41, R43 <u>Xylene</u> 10 - 25% R20/21,R38 <u>1,2,4 – Trimethylbenzene</u> 2.5 to 10% R20, R36/37/38, R51, R53 <u>Solvent Naphta (Petroleum)</u> 2.5 to 10% R65 <u>2,4,6- Tris (Dimethylaminomethyl) Phenol</u> 2.5 - 10% R22, R36/38 <u>Ethylbenzene</u> 2.5-10% R20 <u>Triethylenetetramine</u> 2.5-10% R52, R53, R34, R43, R21 <u>Propylbenzene</u> <2.5% R37, R51, R53, R65</p>		
<p>No Safety Data Sheets Available</p>	<p>Warpaint approved marine varnish Manufacturer Presumed</p>	<p>Wooden Handrails and Ladders</p>

Additive (Lead, Tin, Cadmium, Organotins (TBT's), Arsenic, Zinc, Chromium, Strontium, Other) % Concentration / Risk Phrase	Manufacture and Product Name	Location
No Safety Data Sheet available Limpetite® is a liquid applied air cured synthetic rubber compound coating System. It has been approved as fit for use in TES-SSG-MT sponsored WARPAIN T Brochure. Error! Reference source not found.	Bristol Metal Spraying Protective coatings Limpetite Primer 205 Undercoat/primer	Rubber Coating to Hull appendages-Rudders, Stabilisers and Shaft Brackets
No Safety Data Sheet available Limpetite® is a liquid applied air cured synthetic rubber compound coating System. It has been approved as fit for use in TES-SSG-MT sponsored WARPAIN T Brochure.	Bristol Metal Spraying Protective coatings Limpetite Primer 220 Undercoat/primer	Rubber Coating to Hull appendages-Rudders, Stabilisers and Shaft Brackets
No Safety Data Sheet available Limpetite® is a liquid applied air cured synthetic rubber compound coating System. It has been approved as fit for use in TES-SSG-MT sponsored WARPAIN T Brochure.	Bristol Metal Spraying Protective coatings Limpetite A3 Rubber Coating (Touch up and Repair)	Rubber Coating to Hull appendages-Rudders, Stabilisers and Shaft Brackets

1C. Plastic Materials

Type	Location	Approximate Quantity
Plastic General		
<u>General Cable Insulation / sheathing</u> <u>Chlorosulphonated Polyethylene Rubber Sheath (CSP)/Polyvinyl Chloride (PVC)</u> Approximately 30% of ships cabling consists of Chlorosulphonated Polyethylene Rubber Sheath (CSP) or Polyvinyl Chloride (PVC) insulated cable which does not meet the smoke and toxicity requirements for shipboard materials and is no longer acceptable for shipboard use (Def Stan 02-512 Part 1). Any cable added or replaced since build will be compliant with the appropriate Defence Standards (Def Stans) and International Electrotechnical Commission (IEC) Standards.	Throughout Ship 172 electrical systems; each system consists of several sub-systems which have several cable assemblies. The weight of cabling is estimated to be in the region of 1,000 Tonnes	The estimated weight of cabling not meeting toxicity requirements is in the region of 300 Tonnes throughout the ship.
Briefing & Flight Deck Closed Circuit Television (CCTV) Monitors, Educational/Recreational TV sets, Work Stations/Desktop Computers / Monitors / Printers may contain Non Low Fire Hazard Cable Insulation / sheathing Plastic casings and internal components	Various Operations / Control Rooms, Ships Offices, workshops and Mess Decks.	Presumed
Plastic Sanitary System fittings to include seats and covers, bottle traps and antisiphon valves	Heads and Bathrooms throughout vessel	Presumed
Emergency Escape Breathing Device (EEBD) Containers	Located through out Ship iaw Certificate of Fire Safety.	Removed
Aqueous Film Forming Foam (AFFF) Containers (20 litre drums)	Located through out Ship iaw Certificate of Fire Safety.	Removed
Lifebuoys (Peribuoy)	Upper Deck	Removed
Battery casings	Throughout ship	Removed
Protective coating on	Upper Deck	700m

Type	Location	Approximate Quantity
Removable guard rail sections		
Glass Reinforced Plastic (GRP)		
Immersion suits (Container)	Upper Decks Various positions Berthing Bays	Removed
Life Rafts (Container)	Upper Decks Various positions	Removed
Life Jackets (Container)	Upper Decks Various positions	Removed
Beaufort Air Sea Rapid Evacuation System Stowage Cover	Flight Deck Starboard	15Kg
Radar/Communications Domes/Covers Scott	Mainmast Port and Starboard 325Kg each	650 Kg
Inmarsat Bm	Fwd Funnel and Bridge mast	30 Kg
CNN Global Satellite System	Aft Mast	20 Kg
996 Radar	Midmast	Removed
Navigational radars	Bridge Roof /Rear Mast x 2	20Kg
Aft Mast GRP deck & Bhd panels	Aft Mast 02N and above	8 Tonnes

Rubber

Ships Hoses Throughout Ship iaw Flexible Approx 3500 hoses (3,800kg)
Hose Register

Flexible Couplings Throughout Ship 550 kg

Poly (Vinyl Chloride) (PVC)		
Radar 996:- Cable sleeves within equipment	996 Radar Office	Removed
Radar 996 :- Cable insulation	Cable run between Equipment and Main Mast Cap	Removed Removed
ADAWS –Cabinets (Cable/Wire insulation)	Computer Room 6K/J	Removed
Radar 1007 – Cabinets and Consoles as Cable Insulation, Wire Sleeve	01N	
Polytetrafluoroethylene (PTFE)		

ADAWS –Cabinets (Cable/Wire insulation)	Computer Room 6K/J	Approximately 50 metres
Radar 1007 – Cabinets and Consoles as Cable Insulation, Wire Sleeving	01N	Removed
Polycarbonate		
<u>Fire detection System</u> Fire Detector Sensor casings Flame Detector Sensor casings Light Fitting Diffusers (Makrolon)	Located through out Ship iaw Certificate of Fire Safety and Build Specification	Fire detection heads removed.
Acrylonitile Butadiene Styrene (ABS)		
Reverse Osmosis Plants System Pipework	Four plants are fitted onboard only three have ABS Pipework 2 Plants located in 9K (20kg x 2), 1 located in 9N (25 Kg)	65 Kg
Pre-Wet System	Main System pipe runs Port and Stbd sides 2 Deck	Approx 1500 metres of 40mm Nominal bore

1D. Materials containing PCB, PCT, PBBs

Material	Location	Approximate Quantity
Polychlorinated Biphenyl (PCB)	Potentially in some Transformers, Capacitors and Cabling. PCB component is possible in the ballasts of fluorescent lamp fixtures (unless marked otherwise)	Reference K Representative sampling of electrical cables has revealed no PCB levels in excess of the 50mg/kg threshold limit (Reference M). Throughout the ship
Polycyclohexylenedimethylene Terephthalate (PCT)	Potentially in some Transformers, Plasticizers and Flame Retardants	Trace only. Not sampled or tested.
Polybrominated biphenyl (PBB)	Potentially in some Transformers, Plasticizers and Flame Retardants	Trace only. Not sampled or tested.
Polybrominated Diphenyl Ethers (PBDE)	Carpets as fire retardant material.	Small scale sampling and testing (reference P) revealed very low trace levels of PBDE. These were judged to be incidental contamination and not part of the fire-proofing process.

1E. Gases sealed in ship's equipment or machinery.

Type	Location	Approximate Quantity
Refrigerants		
<p><u>R22 R407C</u> Chilled Water Plants</p> <p>Spare bottles</p>	<p>8 in number Plants (Three in 7F, Two in the Forward Gear Room (FGR) and Three in 7Q) 226 - 277 Kg per plant (2216 Kg)</p> <p>8 X 65 Kg Bottles stored in 7F, 7Q and FGR</p>	<p>Removed – de-gassed Traces may remain – care should be taken when dismantling</p> <p>Removed</p>
<p><u>R134a</u> Main Refrigeration Plant</p> <p>Spare bottles</p> <p>DAR (Domestic Automatic Refrigerators) Domestic Fridges, Ice Makers, Chiller cabinets.</p>	<p>3 in number sub systems in Compartment 8P Freezer Room 1 - 35Kg capacity Freezer Room 2 - 20Kg capacity Dairy Room - 8Kg capacity</p> <p>3 X 65 Kg Bottles in stored compartment 8N</p> <p>Galleys, Pantries, Messdecks, Sickbay NAFFI (Approx 60kg).</p>	<p>Removed – de-gassed</p> <p>Traces may remain – care should be taken when dismantling</p> <p>Removed</p> <p>Estimated 18.6 Kg total remains.</p>
Halon		
<p>Halon 1211- Bromochlorodifluoromethane (BCF)</p> <p>Halon 1301- Bromotrifluoromethane (BTM)</p>	<p>Gas Turbine and Diesel Generator (D/G) Module Drench Systems FER, FGR, AER and AGR</p> <p>Spare Bottles</p> <p>Outside DG Compartment 3N/3K 16 bottles each compartment</p> <p>Main Machinery Space Fire Drench Systems (40 x 60Kg Bottles) Compartments 5N and 6K1</p> <p>Main Mast BTM Drench System Passage 01M</p>	<p>Removed</p> <p>Removed</p> <p>Removed</p> <p>Removed</p> <p>Removed</p>
CO₂		
<p>2 Kg CO₂ Extinguisher</p>	<p>139 Extinguishers located throughout ship iaw Certificate of Fire Safety.</p>	<p>Removed</p>

Type	Location	Approximate Quantity
BTM Machinery Space Drench System	8 in number used to operate BTM Machinery Space Drench System	Removed
Life Raft Inflation	25 man (15 Kg bottle) each raft 70 Rafts (1050 Kg)	Removed
Beaufort Air Sea Rapid Evacuation System (Platform Inflation)	Flight Deck Stbd (1J) Raft Inflation System one 13 Kg, 3.18 Kg and 1 kg bottle (17.86 Kg)	Removed
Inergen		
INERGEN is a trademarked fire suppression product of the Ansul Corporation. Inergen is a blend of inert atmospheric gases that contains 52% nitrogen, 40% argon, 8% carbon dioxide.	Aft Mast Fire Suppression System 14 x 67 litre Bottles Located in Inergen Bottle store 02P	Removed
Acetylene	Acetylene Store 4E Stbd 1 x 65 Kg Bottle Welding Bay 4H Stbd 1 x 65 Kg Bottle Gas Bottle Storage 4H 1 x 65 Kg Bottle	Removed
Acetylene/CO²	Welding Bay 4H Stbd 1 x 5 Kg Bottle	Removed

Type	Location	Approximate Quantity
Oxygen	5E Gas Store, 20 x 4 Kg bottles 4 x 6.5 Kg bottles 9 x 17 Kg bottles 9 x 39 Kg bottles Sickbay, 1 x 4 Kg bottles 1 x 6.5 Kg bottles 1 x 17 Kg bottles 1 x 39 Kg bottles First Aid Posts (FAP) 6 x 4 Kg (1 at each FAP) Oxygen Store (4P Port) 1 x 6.5 Kg bottles Welding Bay (4H Stbd) 1 x 6.5 Kg bottles 4H Gas Bottle Store, 1 x 6.5 Kg bottles	All Removed
Propane	Acetylene Store 4E Stbd 5 x 35 Kg Bottle	Removed
Other (Specify)		
Argon	Acetylene Store 4E Stbd 1 x 65 Kg Bottle Welding Bay 4H Stbd 1 x 65 Kg Bottle	Removed Removed
Entonox	5E Gas Store, 14 x 7 Kg bottles 2 x 18 Kg bottles Sickbay, 2 x 4 Kg bottles First Aid Posts (FAP) 6 x 4 Kg (1 at each FAP)	All Removed
Nitrogen	Compartment 7F 4 x 65 Kg Bottles FGR Compartment 2 x 65 Kg Bottles Q ACP Compartment 6 x 65 Kg Bottles	All Removed

1F. Chemicals in ship's equipment or machinery.

Type	Location	Approximate Quantity
Anti Seize Compounds	See greases and oils Table 1.G.	
Engine Additives	See Antifreeze Fluids below	
Antifreeze Fluids		
AL- 39 Havoline XLC-CL00 Low-Toxic, Environmentally friendly inhibitor concentrate. Based on patented aliphatic acid technology 5% concentration with water	Eight Paxman Valenta Diesel Generators are fitted two sited in each Engine Room, one in each Gear Room and two generators in Outside Machinery Spaces (3K and 3N) (50 litres x 8) Litres 1:1 water/AL-39 mix Spare Drums 10 x 25 Litre	Drums removed. Trace elements in systems
Kerosene	None Identified	Nil
White Spirit	COSHH Lockers / Paint Store/ Inflammable Store	Removed
Boiler / Water Treatment		
<u>Amerol</u> Boiler Descaler	Auxiliary Boilers Oil and Grease Store 7G 2 x 20 Litre Drums	Removed
De-ioniser Regenerating	None Identified	Nil
Evaporator Dosing and Descaling Acids		
<u>Cooltreat 651</u> Corrosion And Scale Inhibitor	Chilled water Plants and Marine Engineering Section COSHH lockers (Annex B)	Removed
<u>Microtreat 2200</u> Corrosion Inhibitor	Chilled water Plants and Marine Engineering Section COSHH lockers (Annex B)	Removed
<u>Genesis SW</u> Membrane Reverse Osmosis (RO) Plant Antiscalant / Antifoulant	Reverse Osmosis Plants 1 x 20 Litre Drum stored by each plant located in Compartments 9K (2 Plants), 9N and 8Q Spare Drums Oil and Grease Store 7G 10 x 20 Litre Drums	Emptied and Removed Removed
<u>Genesol 38</u> RO Plant Membrane Cleaner	Presumed in solution in Reverse Osmosis Plants located in Compartments 9K (2 Plants), 9N and 8Q Spare Drums Oil and Grease Store 7G 5 x 20 Litre Drums	Removed Removed
<u>Genesol 40</u> RO Plant Membrane Cleaner	Presumed in solution in Reverse Osmosis Plants located in Compartments 9K (2 Plants), 9N and 8Q	Removed

Type	Location	Approximate Quantity
	Spare Drums Oil and Grease Store 7G 5 x 20 Litre Drums	Removed
<u>Sodium Hydroxide</u> Caustic Soda RO Plant Membrane Cleaner	Presumed in solution in Reverse Osmosis Plants located in Compartments 9K (2 Plants), 9N and 8Q Spare Drums located in COSHH Locker in Compartment 8Q 40 x 1 Kg Drums	Residual Removed
Paint / Rust Stabilisers		
<u>Rust treatments / Preservatives</u> Various substances are carried on board and are controlled by the ships COSHH Organisation Items that are considered Significant are listed within Annex B of this report	Section COSHH Lockers	Removed
Solvents / Thinners		
<u>Adhesives / Solvents / Thinners</u> Various substances are carried on board and are controlled by the ships COSHH Organisation Items that are considered Significant are listed within Annex B of this report	Section COSHH Lockers	Removed
Chemical Refrigerants	None Identified	
Battery Electrolyte	See Table 1G - Batteries	
Hotel Service Cleaners		
<u>Cleaning Substances</u> Various Cleaning Materials are carried on board whilst most items risk rating is non significant they are controlled by the ships COSHH Organisation stowed within COSHH Lockers and are listed within Annex B of this report	Section COSHH Lockers used throughout the ship	Removed
Other (Specify)		

Type	Location	Approximate Quantity
<u>Aqueous Film Forming Foam (AFFF)</u> Composition: Water:85%-90% Propylene Glycol T-Butyl Ether 2%-4% Magnesium Sulphate 1%-2% Hydrocarbon Surfactant – proprietary Fluorosurfactant surfactant – proprietary	<u>Fixed Main Machinery Space High Level AFFF Spray Systems (1% solution)</u> FER / FGR 1200 Litre Tank located in 6K1 AER 1200 Litre Tank located in 5N AGR 1000 Litre Tank located in 5M Starb'd <u>Flight Deck Foam Monitor Storage Tanks</u> 2 X 750 Litres Tanks located in 02H/02P <u>90 Litre AFFF Trolley Unit x 3</u> Flight Deck 3 x 90 litre (270 Litres) Spare charges for trolley unit Aircraft Handler Ready Room 1NA1 12 x 90 Litres (1080 Litres) <u>9 Litre AFFF Extinguishers (water / AFFF mix)</u> 414 Extinguishers Located throughout ship iaw Certificate of Fire Safety. <u>20 Litre drums (Undiluted AFFF)</u> 146 x 20 Litre drums (2920 Litres) Located throughout ship iaw Certificate of Fire Safety.	All contents removed All contents removed. Removed Removed Removed

1G. Other Substances inherent sealed in ship's machinery, equipment or fittings.

Type	Location	Approximate Quantity
<p><u>OEP-80</u> Lubricating Oil, Gear: Extreme pressure</p>	<p>Main Drain Tanks FGR / AGR 7/9K & N (21000 Litres each)</p> <p>FGR Storage Tank 14200 Litres AGR Forward Storage Tank 51000 Litres AGR Aft Storage Tank 16700 Litres FGR Drain Tank 21000 Litres AGR Drain Tank 21000 Litres FGR Sludge Tank 128 Litres AGR Sludge Tank 128 Litres</p> <p>Shaft Lines - Plummer Blocks 0.5 Litre x 6</p> <p>DG Hydraulic Actuators 3 Litres x 8 DGs</p> <p>Ulster Engineering Garbage Shredder Gearboxes compartments 4L/6N</p>	<p>Removed</p> <p>All Removed</p> <p>Drained</p> <p>Removed</p> <p>Removed</p> <p><u>Note: Traces may remain.</u></p>
<p><u>OMD113</u> Mineral oil with additives.</p>	<p>Storage Tank - FER 18000 Litres Storage Tank - AER 18000 Litres Ready Use Tank - FER 450 Litres Ready Use Tank - FGR 225 Litres Ready Use Tank - AER 450 Litres Ready Use Tank - AGR 225 Litres Ready Use Tank - OMS Fwd 270 Litres Ready Use Tank - OMS Aft 270 Litres Ready Use Tank - Motor Boat Workshop 225 Litres</p> <p>DG Sumps</p>	<p>Removed Removed Removed Removed 300 litres remain Removed Removed Removed Removed</p> <p>Drained, trace remains</p>
<p><u>Castrol Icematic SW 68</u> Refrigerator compressor Synthetic Lubricant.</p> <p>Spare Oil</p>	<p><u>Main Refrigeration System</u> Compressor Lubricating Oil 50 Litres</p> <p><u>Chilled Water Plants</u> Compressor Lubricating Oil 8 in number Chilled Water Plants 240 Litres per plant (Litres)</p> <p>Held in Department COSHH lockers 8Q ACP Space 100 x 5 Litres</p>	<p>Drained trace remains</p> <p>Drained, trace remains</p> <p>Removed</p>
<p><u>OX-22</u></p>	<p>20 x 5 litre drums in Engine Rooms</p>	<p>Removed</p>

Type	Location	Approximate Quantity
Lubricating Oil, Gas Turbine Engine, Synthetic	7G Oil and Grease Store 100 x 5 Litre Main Turbine Lub Oil Tank 4 x 100 litres	
<u>OX 165</u> Synthetic gear oil (poly alkyl-glycols with additives).	<u>Centrifuge Gearboxes</u> OEP 80 Filling, Storage And Transfer System One in FGR and AGR Fuel Storage And Transfer System Two in each Engine Room	Removed Removed
<u>Mobil Rarus 427</u> Air Compressor Lubricant	Two Main HPAC's (Reavell Compaire) FER/AER - (30 Litres per sump) Two Hamworthy FER /1H - (30 Litres per sump) Spare Drums 8 x 25 Litres stored in compartment 7G	Removed 60 Litres Removed
Hydrovane Fluid Force Red 2000 Air Compressor Lubricant	Three Low Pressure Air Compressors (LPAC) ISIS Hydrovane 2000 Located in FER, AER and FGR (15 Litres per sump)	Drained
Hydraulic Oil		
<u>OM-33</u> Hydraulic Fluid, Petroleum: Anti- wear hydraulic oil	<u>Steering System</u> Port and Stbd Sub Systems 234 Litres x 2 <u>Stabilisers</u> Four sub-systems 110 Litres x 4 <u>General Services Hydraulics</u> System 1 - After System System 2 - After RAS and Aircraft Lift System System 3 - Starboard Midships System System 4 - Port Midships System System 5 - Forward RAS and Aircraft Lift System System 6 - Fwd System Flight Deck Crane - 450 Litres <u>Weapons Lifts 4G Port/Stbd, 5C Stbd</u> <u>Hydraulic Oil Storage Tanks</u> Aft Lift Well 6U Port Steering Compartment	468 Litres 440 Litres 250 Litres 1250 Litres 25 Litres 25 Litres 1450 Litres 250 Litres 25 Litres 1500 Litres 1200 Litres 1500 Litres Removed

Type	Location	Approximate Quantity
	Spare Drums 20 x 25 litre in Fwd / Aft Lift Well Port PAC	10 litres
<u>Rocol Chain and Drive Spray</u> Open Gear Lubricating Oil	Trace on chain drives and exposed gear throughout ship	Trace remaining
Penetrating Oils / Degreasers		
<u>PX 24</u> Corrosion preventive: Water displacing Composition: Petroleum materials with corrosion inhibitors and surface active agents	Trace throughout ship	Removed
<u>PX-36</u> Penetrating oil.	Trace throughout ship	Removed
<u>ZX-54</u> Rust penetrating oil.	Trace throughout ship	Removed
Sullage Tanks		
<u>Sullage</u> Oil/Fuel/Water Mixture	10K0 6000 Litres 10N0 7000 Litres 9P1 42000 Litres 9P2 128000 Litres 10K0 Water Separator Oil Tank 6000 Litres 10N0 Water Separator Oil Tank 7000 Litres	All Removed
Greases		
<u>XG 250</u> Electrical insulating Composition: Silicone fluid and gelling agent.	trace throughout ship	Trace
<u>XG 286</u> General Purpose Grease Composition: Lubricating oil and water resistant soaps	Fwd Main Shaft Lip Seal - Gearboxes in Fwd GR 7/9K and Aft GR 7/9N Gas Turbine - Module Engine Controls - AER/FER Shaft Lines - Plummer Blocks Bulkhead Glands - MMSs	Trace remains in all
<u>XG-291</u> Multipurpose, heavy duty grease	Diesel Generators - 2 in FER; 1 in FGR;	Trace remaining in all

Type	Location	Approximate Quantity
Uses: Lubrication of gears, anti-friction bearings, high speed ball and roller bearings, plain bearings, internal combustion engine accessories, certain fire control instruments and other mechanisms.	2 in AER; 1 in AGR; 1 in DG Comp. 3K; 1 in DG Comp. 3N Approx 100g per Bearing (2 Bearings per DG) Electrical Motors - Throughout the ship approx 60g per motor	
<u>XG-293</u> Grease, Aircraft: Multipurpose for Wheel bearings, antifriction bearings, plain bearings, gearboxes and aircraft accessories	Chilled water Plants Compressor Motors	Trace remaining
<u>XG-305</u> Grease, molybdenum disulphide, for heavily loaded applications & certain antiseize uses, in temp range -20°C to +120°C.	Steam Ranges	Trace remaining
<u>ZX-13</u> Antiseize Compound: Graphite, Sparking plug thread antiseize compound and certain other threaded fittings	High temperature fittings on IC and Gas Turbine engines.	Trace remaining
<u>ZX-36</u> Lubricant, Electrical Slewing for the sleeves of electrical cables.	Throughout ship	Trace remaining
<u>ZX-38</u> Anti-Seize Compound: Molybdenum Disulfide.	Machinery throughout ship.	Trace remaining
<u>Copper Crest / Slip</u> High Temperature Anti Seize Grease	High temperature fittings on IC and Gas Turbine engines.	Trace remaining
Fuel – Reference O.		
<u>F 76 Diesel Oil (DO)</u> Marine Diesel fuel suitable for Compression ignition engines of the high and medium speed types Composition: Petroleum distillate	<u>Storage Tanks/Bunkers</u> See tank statement at Reference O.	All removed apart from light film residual; see tank statement at Reference O.
<u>F44 - AVCAT</u> Turbine Fuel, Aviation	<u>Storage Tanks</u> see tank statement at Reference O.	All removed apart from light film residual; see tank statement at Reference O.
Lead Acid Batteries		
Sonnenschein Dryfit A 500 12v/40AA Sealed Lead Acid Gas Turbine Starting Power	4 Batteries per Gas Turbine FER/AER	Removed

Type	Location	Approximate Quantity
Back up in the event of electrical Failure		
Sonnenschein AS12/40 G6 12v Main Broadcast and Rationalised Internal Communications Equipment (RICE) Transformer Rectifier Units (TRU)	4 x RICE TRUs with 6 batteries per TRU located in: 01J, 5G, 6K and 6P 2 x Main Broadcast TRUs with 6 batteries per TRU located in: 6K and 6P	Removed
SAFT 12v 10 Cell Lead Acid Batteries Main Machinery Broadcast Emergency Power Supply Unit	2 x 12 Batteries located in the SCC 6L	Removed
JFP Multi-function Consoles Battery lead acid - maker Presumed	Each console has 4 Batteries 31 consoles in the Operation Room 1 console on the Bridge 1 console in the Computer Room	Removed
DII System APC Symmetra RM 2-6 kVA battery modules	4 UPS servers each with 4 battery modules located at: 6K, 5J, 2G and 2L	Removed
Command Support System (CSS) Battery lead acid - maker Presumed	Computer Room 6L 3 Batteries	Removed
Naval Compass System (NCS)1 MK32SFC Drycell Battery - maker Presumed	7L Ships Internal Navigation System (SINS) Compartment	Removed
NCS1 MK32SFC Battery lead acid - maker Presumed	7L SINS Compartment	Removed
WECDIS UPS Battery lead acid - maker Presumed	Compartments 04G and Bridge 4 Batteries per UPS	Removed
MK23 Gyro MK14 SFC Battery lead acid — maker Presumed	7H Mk 23 Gyro Compartment	Removed
ADAWS	ADAWS - Console UPS/Battery Back up Unit - Computer Room (6J/K), Ops Room (5K), Bridge (04), Force Ops Room (5K)	Removed
SEA	SEA Intelligent Messaging Terminal - Processor - MCO (5J)	Removed
Navigation Lights Back up Batteries lead acid – maker Presumed	Port Pilotage (2C2 EEP)Fwd Anchor / Stbd Pilotage (2D1 EDR)Port and Stbd Side lights.Fwd Mast Head Steaming (O4H EEP)Special Operations / Aft Mast Head Steaming (O1L Lobby) Aft Anchor / Stern Lights (4T EEP)	All Removed

Type	Location	Approximate Quantity
Other Batteries		
<u>Lithium</u>		
ADAWS Lithium Battery button cells	CPU PECs (Consoles & Cabinets) - Computer Room, (6J/K), Ops Room (5K), Bridge (04), Force Ops Room (5K)	many cabinets removed – presume batteries remain in residual cabinets.
Intelligent Messaging Terminal Lithium Battery	Intelligent Messaging Terminal – Processors x 2 - MCO (5J)	Qty 7
Laptop computer batteries	Office Computers, Laptops and crews Personnel Computers (PCs) situated throughout ship	Removed
Emergency Position Indicating Radio-beacon (EPRIB) / Search and Rescue Transmitter (SART) / Search and Rescue Beacon Radio Emitter (SABRE)	Various positions on or lobbies adjacent to the Upper Deck 5 Sabres' within designated Liferafts containers	Removed
<u>Nickel Cadmium (NiCad)</u>		
Automatic Emergency Lanterns (AELs) Nickel Cadmium (NiCad) Battery backups in AELs	Throughout ship	Originally 1500 most are removed. Estimate 300 still remain.
Radar 1007	In Indicator Azimuth Range (JUF) Radar 1007 - 01J & 01N	Removed
<u>Gel Acid</u>		
NATO SINS Control Cabinet	7L SINS Compartment	Removed
<u>Chloride</u>		
Oldham MF Chloride PN45 Damage Control Miners Lamp Rechargeable Batteries	8 charging stations throughout ship and spares in stores system	Removed
Alcohol	None Identified	Nil
Methylated Spirits	None Identified	Nil
Epoxy Resins See Annex B	Departmental COSHH Lockers	Removed
Mercury	None Identified	Nil
Radioactive Materials – Reference H.		
Other Specify		
<u>Beryllium</u> 996 Radar contains Beryllium components	Beryllium Copper contacts - Radar 1007 (Ribbon Cable Assembly - Data Distribution Box) (01J & 01N)	Presumed
Beryllium/Copper:	Beryllium Copper contacts – Radar 1007 (Ribbon Cable Assembly - Converter Signal Data & Azimuth Range (JUF) Indicator - 01J & 01N)	Presumed
	Beryllium in PECs of Sonar 2016 located in the Fwd SIS - 7E	Presumed
Beryllium/Copper Alloy:	ADAWS - Consoles & Cabinets	

Type	Location	Approximate Quantity
Beryllium Plating Beryllium Oxide (Beryllium)	Computer Rm 6K/J; Ops Rm 5K; Bridge 04 Deck; Force Ops Rm 5K Micro switch spring & Connector Spring Contacts - Gasket Ships Gyro Compass (NCS1) - 7L SINS Comp ADAWS - (in electronic Components) Cabinets Computer Room 6K/J.	Presumed Presumed Presumed
<u>Cadmium</u> Outfit LFC contains Cadmium batteries SCOT SHF SATCOM MEV Escape Chutes (Plating on Inflation bottle heads (6) hose nuts (12) and Housing Arrestor Wire Block pins (4) Bowman Communications Equipment ADAWS 440V Main Switchboards Cadmium Plate Cadmium in wiring Cadmium Coated Fasters Cadmium Coating	Compartments 01J and 01N SCOT Office / MCO Flight Deck 02N Bowman Compartment ADAWS - Used as a protective finish to Fasteners, Runners, Brackets etc, in Consoles & Cabinets in Computer Room 6K/J; Ops Room 5K; Bridge 04Deck; Force Ops Room 5K. Components within switchboards located in Compartments 3P(S), 6P(P), 6K(P), 6J(P), 3K(S), 6M(S) and 6N(S) Cadmium plated screws in DICOLL Terminal Sonar 2016 - SIS 7E. Gyro Compass (NCS1) - 7L SINS Comp. Torsionmeters on Main Shaft Electrical Power Equipment - Contact coating on smaller contactors, throughout the ship.	2 Batteries Presumed Presumed Presumed Presumed Qty 2 25 grams Approx 40 Fasteners Could potentially contain cadmium

Type	Location	Approximate Quantity
<u>Lead</u> Silver / Lead Alloy anodes	Impressed Current Cathodic Protection System	10 Anodes
<u>Lead / Tin Solder</u>	ADAWS - Lead/Tin Solder used throughout system - Consoles and Cabinets in Computer Room 6K/J; Ops Room 5K; Bridge 04Deck; Force Ops Room 5K.	Presumed Presumed
<u>Lead pig ballast</u>	Soldered Joints in Electronic Circuit Boards - Electronic Equipment in general. Bilge keel – Frames 163-179 10G Weapons Lift bilge	41.3 tonne 30 tonne
Other Specify		
<u>Zinc</u> Zinc Alloy Sacrificial anodes	Underwater Hull	Approx 50 Anodes
Zinc Plating	Zinc Plated Fasteners whenever fasteners are necessary in connecting aluminium/steel; wood / steel and any fittings exposed to the weather	Presumed
<u>Nickel Plating</u>	Nickel Plating on Connectors – Radar 1007 - (Converter Signal Data & Azimuth Range (JUF) Indicator - Transmitter/Receiver, Radar 01J & 01N).	Presumed

Part 1 final completion by	Date
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Part 2. Operationally Generated Wastes

2A. Dry Tank Residues

Description of Residues	Location	Approximate Quantity
None Identified	NA	NA

2B. Bulk (non-oily) Waste

Type	Location	Approximate Quantity
Ballast Water (in Fuel Tanks)	Some Main Hull and Fuel Tanks will be ballasted with a quantity of sea and/or fresh water to provide Ship stability when in the Light de-stored condition. The final tank state is detailed in Reference O.	A total of 2752.6 tonnes fresh water is in tanks in order to provide stability for ocean tow.
Raw Sewage	Five Hamworthy Sewage Treatment Plants and system pipework from various Heads and Bathrooms to the STPs.	Removed. Some residual may remain in system pipework.
Treated Sewage	Five Hamworthy Sewage Treatment Plants and system discharge pipework from STPs to overboard.	Removed. Some residual may remain in system pipework
Garbage (inc. plastics)	All garbage removed as part of the de-store process.	Removed
Debris	All debris removed as part of the de-store process.	Removed
Other (Specify) <u>Plastics</u> Battery Casings Lifebuoys (Peribuoy) Immersion suits (Containers) Life Rafts (Container) Life Jackets (Container) Scott, Inmarsat BM and 966 Radar equipment	Throughout ship Upper Deck Upper Deck Upper Deck Upper Deck <u>Equipment / Domes removed although hard wired cable runs will remain.</u>	Removed Removed Removed Removed Removed Removed
Medical Stores Medical Gases Scotsman Ice Machine X Ray Machine	Sick Bay Medical Store Sickbay Dental Surgery	Removed Removed Removed Removed

Part 2C – Oily Waste/Oily Residue

Type	Location	Approximate Quantity
Cargo Residues	NA	NA
Tank Scale	NA	NA

Type	Location	Approximate Quantity
Bunkers: Fuel Oil	Fuel Bulk Storage Tanks	Trace as film on water ballast. Some residual may remain in system pipework
Diesel Oil	Ready use tanks run down, ragged out and inspected. Coalescer and Filters drained, Elements removed and bodies ragged out. System Pipework drained down.	All are trace remaining only. All are trace remaining only. Estimate 2000 litres remains as residual in pipes.
AVCAT	All Bulk Storage Tanks cleaned and inspected FRAM Filters drained, Elements removed and bodies ragged out. System Pipework drained down.	All are trace remaining only. Estimate 200 litres remains as residual in pipes.
<p data-bbox="119 943 316 1010">Lubricating Oil <u>OEP-80</u></p> <p data-bbox="119 1294 252 1328"><u>OMD 113</u></p> <p data-bbox="119 1581 416 1615"><u>Castrol Icematic SW68</u></p>	<p data-bbox="483 976 951 1218">All Storage, Drain and Sludge Tanks run down, ragged out and inspected. Main Gearboxes, Olympus Power Turbine (3 units removed) remaining units pedestal bearings, Main Thrust Block, and Lubricating Oil coolers drained. Filter Banks drained, Elements removed and bodies ragged out. System pipework Drained down</p> <p data-bbox="483 1440 991 1648">All Storage, Ready Use Tanks run down, ragged out and inspected. Main Generator Sumps drained. Filter Banks drained, Elements removed and bodies ragged out. System pipework Drained down</p> <p data-bbox="483 1727 940 1859">Main Refrigeration Plant and 8 in number Chilled Water Plants sumps drained. All spare oil de-stored</p>	<p data-bbox="1019 1010 1310 1077">All are trace remaining only.</p> <p data-bbox="1019 1261 1294 1361">Estimate 50 litres remains as residual in pipes</p> <p data-bbox="1019 1440 1310 1507">All are trace remaining only.</p> <p data-bbox="1019 1615 1294 1715">Estimate 20 litres remains as residual in pipes.</p> <p data-bbox="1019 1760 1294 1794">Trace remaining only.</p>

Type	Location	Approximate Quantity
<u>Air Compressor Lubricants</u> Mobil Rarus 427/ Hydrovane Fluid Force Red 2000 Air Compressor Lubricant	HPAC and LPAC sumps drained	See also section 1G. Trace remaining only.
Hydraulic Oil (OM-33)	Hydraulic Systems not in use during de-store to be de-pressurised and drained	See also section 1G
<u>PX 24</u> <u>Oils Miscellaneous</u>	Being used extensively as a preservative on decommissioned equipment e.g. Diesel Engine Cylinder Bores All oils and greases held in Naval Stores and departmental COSHH Lockers landed as part of de-store	Trace remains Removed
Grease	Machinery, as residual remainder All grease held in Naval Stores and departmental COSHH Lockers landed as part of de-store.	Residual Only Removed
Waste Oil	Sullage tanks emptied and cleaned.	Residual in inaccessible areas
Oily Water	As film on tank water ballast	Light residual only
Oily/Contaminated Sludge	Bilges.	Residual in inaccessible areas
Oily/Contaminated Rags	Removed	Removed.
Other (Specify) <u>AL- 39 Havoline XLC-CL00</u> Antifreeze Fluid	8 Paxman Valenta Diesel Generator FW systems drained down Spare drums removed during De-store Period.	Removed Removed

Part 2 final completion by	Date
R M Lane - Disposal & Reserve Ships Officer	15 Apr 2013

Part 3 Stores

3A. Gases in Store

Type	Location	Approximate Quantity
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Argon (Fluorescent Tubes)	Ship Wide	
Refrigerants <u>R407C</u> <u>R134A</u>	Chilled Water Plants 8 in number 3 sub systems in compartment 8P Spare Bottles all removed as part of the de-store DAR (Domestic Automatic Refrigerators) Domestic Fridges, Ice Makers Chiller cabinets	Removed Removed Removed
HALON 1211 (Bromochlorodifluoromethane (BCF))	DG and Gas Turbine Modules. System depressurised and BCF Bottles removed Spare Bottles removed as part of de-store.	Removed Removed
Halon 1301- Bromotrifluoromethane (BTM)	Main Machinery Space Fire Drench Systems and Main Mast BTM Drench System. System depressurised and BCF Bottles removed.	Removed
CO2 Bottles	2 Kg CO ₂ Extinguishers BTM Machinery Space Drench System Life Raft Inflation Beaufort Air Sea Rapid Evacuation System (Platform Inflation)	Removed Removed Removed Removed
INERGEN	Aft Mast Fire Suppression System depressurised and INERGEN Bottles removed.	Removed
Acetylene	Acetylene Store 4E Stbd, Welding Bay 4H Stbd, Gas Bottle Storage 4H. All removed during the De-store period.	Removed
Acetylene/CO2	Welding Bay 4H removed during the De-store period	Removed
Propane	Acetylene Store 4E Stbd All removed during the De-store period.	Removed
Argon	Acetylene Store 4E Stbd/Welding Bay 4H Stbd All removed during the De-store period.	Removed
Butane	N/A	None Identified

Oxygen	5E Gas Store, Sickbay, First Aid Posts (FAP), Oxygen Store (4P Port), Welding Bay (4H Stbd), 4H Gas Bottle Store. All removed during the De-store period.	Removed
Nitrogen	Compartment 7F, FGR Compartment, Q ACP Compartment All removed during the De-store period	Removed
Other (Specify) Entonox	5E Gas Store, Sickbay, First Aid Posts (FAP). All removed during the De-store period	Removed

3B. Chemicals in Store

Type	Normal Location	Approximate Quantity
Anti-seize Compounds	Engineering and Seamanship Section COSHH Lockers	All removed during the De-store period.
Engine Additives	Internal Combustion Engines Section COSHH Lockers Trace on Machinery throughout Ship	All removed during the De-store period. Trace - Presumed
Antifreeze fluids	Internal Combustion Engines Section COSHH Lockers Trace on Main Generator FW Systems	All removed during the De-store period. Trace - Presumed
Kerosene	None Identified	None Identified
White Spirit	Paint Shop, Inflammable Store, Section COSHH Lockers	All removed during the De-store period.
Boiler/Water Treatment Amerol Boiler Descaler	Auxiliaries Section COSHH Lockers Trace on Steam Machinery and systems	All removed during the De-store period. Trace - Presumed
De-ioniser Regenerating	None Identified	Nil
Evaporator Dosing and Descaling Acids <u>Cooltreat 651 / Microtreat 2200</u> <u>Genesis SW/ Genesol 38 / Genesol 40 / Sodium Hydroxide</u>	Auxiliaries Section COSHH Lockers Trace on Chilled Water Plants and systems Auxiliaries Section COSHH Lockers Trace on Reverse Osmosis Plants and systems	All removed during the De-store period. Trace - Presumed All removed during the De-store period. Trace - Presumed

Type	Normal Location	Approximate Quantity
Paint/Rust Stabilisers	Section COSHH Lockers	None Identified
Solvents / Thinners	Section COSHH Lockers	None Identified
Refrigerants	Spare / Reclaim Bottles in compartments 8N/8P all removed as part of the de-store.	All Refrigerant bottles removed during the De-store Period
Battery Electrolyte	Battery Shop, UPS supported equipment, AELs etc throughout the ship	Removed
Hotel Service Cleaners	Cleaning Gear Stores, COSHH Lockers throughout the ship.	All Cleaning stores removed during the De-store Period
Other (Specify)	None Identified	None Identified

3C. Other packaged items in store.

Type	Normal Location	Approximate Quantity
Lubricating Oil	Engineering section COSHH Lockers, Naval Store, Inflammable store.	Removed during the De-store period.
Hydraulic Oil	Engineering section COSHH Lockers, Naval Store, Inflammable store.	Removed during the De-store period.
Penetrating Oil	Engineering section COSHH Lockers, Naval Store, Inflammable store.	Removed during the De-store period.
Grease	Engineering section COSHH Lockers, Naval Store, Inflammable store.	Removed during the De-store period.
Lead Acid Batteries	Naval Store and Battery Shop. Removed as part of De-store	Removed during the De-store period.
Medicines	Sick Bay and Medical Store.	Removed during the De-store period.
Insecticide Sprays	Main Naval Store.	Removed during the De-store period.
Alcohol	NAAFI, Wardroom, Senior Rates Mess, Junior Rates Mess Decks and Medical Store.	Removed during the De-store period.
Methylated Spirits	Paint Shop and Paint Store and Main Naval Store	Removed during the De-store period.
Epoxy Resins	Shipwrights Shop and Main Naval Store	Removed during the De-store period.
Paint	Paint Shop and Paint Store and Main Naval Store	Removed during the De-store period.
Fire fighting clothing, equipment	Main Naval and Damage Control Stores; Ready Use Lockers	Removed during the De-store period.
Radioactive Materials	Main Naval Store, Electrical Weapons Engineering COSHH Lockers	Removed during the De-store period.
Other (Specify)	None identified	None identified

Part 3 final completion by	Date
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Part 4 Other Hazards

4A Miscellaneous		
Type	Hazard	Remarks
Ventilation	Natural Ventilation only throughout the ship	Limited ventilation as ship will be closed down for towing.
Lighting and electrical systems <i>NOT CERTIFIED SAFE AND FIT FOR USE!</i>	Ships lighting and general power systems are not functional. Additionally Fluorescent Lights are still fitted on board although inactive	Power Cables may be cut. Existing Fluorescent Lights contain Argon and small amounts of mercury.
Trip / Fall	Throughout the ship	Extra care should be taken.
Ladder and Handrails	Have not been maintained	Extra care should be taken.
Guardrails	Have not been maintained	Do not place weight on rails.
Lifting Equipment	Has not been maintained	No attempt should be made to operate any lifting equipment.
Cat walks	Have not been maintained	Do not use.
Sponsons	Have not been maintained	Do not use
Domestic Appliances	Have not been maintained 6 Washing Machines 6 Tumble driers 2 hydro extractors 6 dishwashers	Located in Laundry, CPO Mess, Wardroom, R PO Mess and JR dining hall
Fluorescent light tubing	Phosphorous, Argon and mercury trace.	Estimated at 3000 tubes in locations throughout the ship.

Part 4 final completion by	Date
R M Lane - Disposal & Reserve Ships Officer	15 Apr 2013

Former HMS ARK ROYAL
INVENTORY OF HAZARDOUS MATERIALS
MoD Ship Class and Design Authority Endorsement

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Signed on behalf of MoD, Defence Equipment and Support, Ship Support Alliance

Mr Kevin Barry CEng FIMechE
Ship Support Alliance - DDAmph Strategic Class Authority Team Leader
Defence Equipment and Support
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Date: 16 Apr 2013

Category	Ferrous Metals	Non-Ferrous Metals				Cables	Waste			Other Products
		ALUMINIUM	COPPER	STAINLESS (steel)	LEAD		FUELS/OILS (liquids)	REMNANT WASTE	ASBESTOS	
Materials	FERROUS (steel)					CABLES (inclusive of sheathing)			OTHER (non waste) REUSE	
Weight (kg)	10757050	95200	149980	137360	170040	142440	39580	730030	1640	357120