UK Health Security Agency

Inorganic Arsenic

Incident management

This document provides information needed for response to a chemical incident, such as physicochemical properties, health effects and decontamination advice.

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Contents

Main points

General

Arsenic is solid at room temperature insoluble in water, odourless, combustible; and may burn but does not ignite easily.

It reacts violently with strong oxidants and halogens, generating a fire and explosion hazard. It also reacts with reducing agents, producing the flammable arsine gas.

Health

Inhalation of arsenic may cause laryngitis, bronchitis and rhinitis; nausea, vomiting and diarrhoea have also been reported.

Ingestion causes abdominal pain, vomiting, diarrhoea and in severe cases it can cause multiorgan toxicity.

Dermal contact may cause irritation, erythema and swelling.

Arsenic is highly irritant and corrosive to the eye. Eye exposure may cause pain, lacrimation, blepharospasm, conjunctivitis, photophobia, visual disturbance and corneal damage.

Casualty decontamination at the scene

Following disrobe, improvised dry decontamination should be considered for an incident involving arsenic compounds, unless casualties are demonstrating signs or symptoms of exposure to caustic or corrosive substances.

Environment

Arsenic is hazardous to the aquatic environment. Inform the Environment Agency where appropriate.

Spillages and decontamination run-off should be prevented from entering drains and watercourses.

Hazard identification

Table 1a. Standard (UK) dangerous good emergency action codes for arsenic compound, liquid, N.O.S, packing group I

UN		1556	Arsenic compound, liquid, N.O.S., inorganic, including: arsenates, N.O.S., arsenites, N.O.S., arsenic sulphides, N.O.S., packing group I.	
EAC		2X	Use fine water spray. Wear chemical protective clothing with liquid-tight connections for whole body in combination with breathing apparatus [note 1]. Spillages, contaminated fire and decontamination run-off should be prevented from entering drains and surface and groundwaters.	
APP		B	Gas-tight chemical protective suit with breathing apparatus [note 2]	
Hazards	**Class**	6.1	Toxic substance	
	Sub-risks	–	–	
HIN		66	Highly toxic substance	

Abbreviations

UN = United Nations number.
EAC = emergency action code.
APP = additional personal protection.
HIN = hazard identification number.

Notes to Table 1a

Note 1: Chemical protective clothing with liquid tight connections for whole body (Type 3) conforming to the relevant standards such as BS 8428 or EN 14605 in combination with breathing apparatus conforming to BS EN 137.

Note 2: People should be warned to stay indoors with all doors and windows closed, preferably in rooms upstairs and facing away from the incident. Ignition sources should be eliminated and ventilation stopped. Effects may spread beyond the immediate vicinity. All non-essential personnel should be instructed to move at least 250 m away from the incident.

Reference

National Chemical Emergency Centre (NCEC), part of Ricardo-AEA. 'Dangerous Goods Emergency Action Code List'. 2023 (viewed on 2 October 2024)

Table 1b. Standard (UK) dangerous good emergency action codes for arsenic compound, liquid, N.O.S, packing groups II & III

UN		1556	Arsenic compound, liquid, N.O.S., inorganic, including: arsenates, N.O.S., arsenites, N.O.S., arsenic sulphides, N.O.S., packing groups II & III.	
EAC		2X	Use fine water spray. Wear chemical protective clothing with liquid-tight connections for whole body in combination with breathing apparatus [note 1]. Spillages, contaminated fire and decontamination run-off should be prevented from entering drains and surface and groundwaters.	
APP		–	–	
Hazards	**Class**	6.1	Toxic substance	
	Sub-risks	–	–	
HIN		60	Toxic or slightly toxic substance	

Abbreviations

UN = United Nations number.
EAC = emergency action code.
APP = additional personal protection.
HIN = hazard identification number.

Notes to Table 1b

Note 1: Chemical protective clothing with liquid-tight connections for whole body (type 3) conforming to the relevant standards such as BS 8428 or EN 14605, in combination with breathing apparatus BS EN 137.

Reference

‘National Chemical Emergency Centre (NCEC), part of Ricardo-AEA. ‘Dangerous Goods Emergency Action Code List’. 2023 (viewed on 27 September 2024)

Table 1c. Standard (UK) dangerous good emergency action codes for arsenic compound, solid, N.O.S.

UN		1557	Arsenic compound, solid, N.O.S., inorganic, including: arsenates, N.O.S., arsenites, N.O.S., arsenic sulphides, N.O.S.	
EAC		2X	Use fine water spray. Wear chemical protective clothing with liquid-tight connections for whole body in combination with breathing apparatus [note 1]. Spillages, contaminated fire and decontamination run-off should be prevented from entering drains and surface and groundwaters.	
APP		–	–	
Hazards	**Class**	6.1	Toxic substance	
	Sub-risks	–	–	
HIN		66/60	Highly toxic/toxic or slightly toxic substance	

Abbreviations

UN = United Nations number.
EAC = emergency action code.
APP = additional personal protection.
HIN = hazard identification number.

Notes to Table 1c

Note 1: Chemical protective clothing with liquid-tight connections for whole body (type 3) conforming to the relevant standards such as BS 8428 or EN 14605, in combination with breathing apparatus BS EN 137.

Reference

National Chemical Emergency Centre (NCEC), part of Ricardo-AEA. ‘Dangerous Goods Emergency Action Code List’. 2023 (viewed on 27 September 2024)

Table 1d. Standard (UK) dangerous good emergency action codes for arsenic

UN		1558	Arsenic	
EAC		2Z	Use fine water spray. Wear normal fire kit in combination with breathing apparatus [note 1]. Spillages, contaminated fire and decontamination run-off should be prevented from entering drains and surface and groundwaters.	
APP		–	–	
Hazards	**Class**	6.1	Toxic substance	
	Sub-risks	–	–	
HIN		60	Toxic or slightly toxic substance	

Abbreviations

UN = United Nations number.
EAC = emergency action code.
APP = additional personal protection.
HIN = hazard identification number.

Notes to Table 1d

Note 1: Normal firefighting clothing is appropriate, that is, breathing apparatus conforming to BS EN 137 worn in combination with fire kit conforming to BS EN 469, firefighters' gloves conforming to BS EN 659 and firefighters' footware conforming to BS EN 15090 (Footware for firefighters) type F3 – Hazmat and structural firefighting or alternatively firefigters boots conforming to Home Office Specification A29 (rubber boots) or A30 (leather boots). Leather footware, including A30, may not provide adequate chemical resistance therefore caution should be exercised in the use of these boots.

Reference

National Chemical Emergency Centre (NCEC), part of Ricardo-AEA. 'Dangerous Goods Emergency Action Code List'. 2023 (viewed on 27 September 2024)

Table 2a. The GB classification, labelling and packaging (CLP) regulation for arsenic and arsenic compounds, with the exception of other specified compounds

Hazard class and category	Acute Tox. 3	Acute toxicity (inhalation, oral), category 3	
	Aquatic Acute 1	Acute hazard to the aquatic environment, category 1	
	Aquatic Chronic 1	Chronic hazard to the aquatic environment, category 1	
Hazard statement	H301	Toxic if swallowed	
	H331	Toxic if inhaled	
	H400	Very toxic to aquatic life	
	H410	Very toxic to aquatic life with long-lasting effects	
Signal words	DANGER		

Reference

The Health and Safety Executive (HSE). 'GB CLP Regulation' (viewed on 27 September 2024)

Table 2b. The GB classification, labelling and packaging (CLP) regulation for arsenic trioxide and diarsenic trioxide

Hazard class and category	Acute Tox. 2	Acute toxicity (oral), category 2	
	Carc. 1A	Carcinogenicity, category 1A	
	Skin Corr. 1B	Skin corrosion/irritation, category 1B	
	Aquatic Acute 1	Acute hazard to the aquatic environment, category 1	
	Aquatic Chronic 1	Chronic hazard to the aquatic environment, category 1	
Hazard statement	H300	Fatal if swallowed	
	H314	Causes severe skin burns and eye damage	
	H350	May cause cancer	
	H400	Very toxic to aquatic life	
	H410	Very toxic to aquatic life with long lasting effects	
Signal words	DANGER		

Reference

The Health and Safety Executive (HSE). 'GB CLP Regulation' (viewed on 27 September 2024)

Table 2c. The GB classification, labelling and packaging (CLP) regulation for arsenic oxide, arsenic pentoxide, diarsenic pentoxide, arsenic acid and its salts with the exception of other salts specified

Hazard class and category	Acute Tox. 3	Acute toxicity (inhalation, oral), category 3	
	Carc. 1A	Carcinogenicity, category 1A	
	Aquatic Acute 1	Acute hazard to the aquatic environment, category 1	
	Aquatic Chronic 1	Chronic hazard to the aquatic environment, category 1	
Hazard statement	H301	Toxic if swallowed	
	H331	Toxic if inhaled	
	H350	May cause cancer	
	H400	Very toxic to aquatic life	
	H410	Very toxic to aquatic life with long lasting effects	
Signal words	DANGER		

Reference

The Health and Safety Executive (HSE). 'GB CLP Regulation' (viewed on 27 September 2024)

Physicochemical properties

Table 3. Physicochemical properties

CAS number	7440-38-2
Molecular weight	75
Formula	As
Common synonyms	-
State at room temperature	Solid
Volatility	Non-volatile at 20°C
Specific gravity	5.778 at 25°C (water = 1)
Flammability	Combustible – may burn but does not ignite easily
Lower explosive limit	-
Upper explosive limit	-
Water solubility	Insoluble in water
Reactivity	Reacts violently with strong oxidants and halogens, generating a fire and explosion hazard
Reaction or degradation products	Upon heating, toxic fumes are formed. Reacts with reducing agents, producing arsine gas which is toxic and flammable
Odour	Odourless

References

World Health Organization. International Programme on Chemical Safety.'International chemical safety card entry for arsenic' ICSC 0013, 2011 (viewed on 27 September 2024)

PubChem. Bethesda (MD): National Library of Medicine (US), National Center for Biotechnology Information. 'PubChem Compound Summary for CID 5359596, Arsenic 2024. (viewed on 27 September 2024)

Reported effect levels from authoritative sources

Table 4a. Exposure by ingestion of metallic arsenic

g	Signs and symptoms	Reference
5	Diarrhoea and respiratory distress	a

Table 4b. Exposure by ingestion of arsenic (+5)

mg/kg	Signs and symptoms	Reference
0.05	Sore throat, rhinorrhea, cough, sputum, abnormal ECG, nausea, vomiting, diarrhoea, mild anaemia and leukopenia, impaired liver function, degenerative lesions, itching, oedema of eyelids, conjunctivitis, cenral scotoma, neuro-retinitis	b
121	Respiratory distress, lung haemmorhage and oedema, hypotension, ventricular fibrillation, cardiac arrest and ulceration of upper gastrointestinal tract, confusion, brain oedema and death	b

Table 4c. Exposure by ingestion of arsenic (+3)

mg/kg	Signs and symptoms	Reference
2	Diffuse inflammation of the GI tract, vomiting, altered renal function	b
6	Hypotension, rapid pulse, abdominal pain, acute renal failure and pulmonary haemorrhage	b
8	Hemorrhagic bronchitis, pulmonary oedema, tachycardia, massive cardiomegaly, gastrointestinal bleeding, haemolysis, persistent encephalopathy, peripheral neuropathy and marked atrophy of distal muscle groups	b
22	Tachypnea, respiratory failure, cyanosis, ventricular fibrillation, abdominal pain, nausea, diarrhoea, massive vomiting, dysphagia, haemorrhage, agitation, disorientation, paranoia and death	b

These values give an indication of levels of exposure that can cause adverse effects. They are not health protective standards or guideline values.

References

a. National Poisons Information Service (NPIS). TOXBASE. Arsenic and Arsenic Compounds (January 2019). (viewed on 27 September 2024)

b. Agency for Toxic Substances and Disease Registry (ATSDR) 'Toxicological profile for Arsenic' 2007 (viewed on 27 September 2024)

Published emergency response guidelines

Table 5. Acute exposure guideline levels (AEGLs) for benzene

	Concentration (ppm)				
	10 minutes	**30 minutes**	**60 minutes**	**4 hours**	**8 hours**
AEGL-1 [note 1]	NR	NR	NR	NR	NR
AEGL-2 [note 2]	3.7	3.7	3.0	1.9	1.2
AEGL-3 [note 3]	11	11	9.1	5.7	3.7

Notes to Table 5

Note 1: Level of the chemical in air at or above which the general population could experience notable discomfort.

Note 2: Level of the chemical in air at or above which there may be irreversible or other serious long-lasting effects or impaired ability to escape.

Note 3: Level of the chemical in air at or above which the general population could experience life-threatening health effects or death.

NR = Not reported due to insufficient data

Reference

US Environmental Protection Agency (EPA) 'Acute Exposure Guideline Levels' (viewed on 27 September 2024)

Exposure standards, guidelines or regulations

Table 6. Occupational standards

	LTEL (8-hour reference period)		STEL (15-min reference period)	
	ppm	mg/m³	ppm	mg/m³
WEL	-	0.1		-

Abbreviations

WEL = workplace exposure limit.
LTEL = long-term exposure limit.
STEL = short-term exposure limit.

Reference

Health and Safety Executive. 'EH40/2005 Workplace Exposure Limits Fourth Edition' 2020. (viewed on 27 September 2024)

Table 7. Public health standards and guidelines

Drinking water standard	10 µg/L
WHO guideline for drinking water quality	0.01 mg/L (10 µg/L)
WHO indoor and outdoor air quality guidelines	The WHO recommends no safe level for arsenic. At an air concentration of 1 µg/m³, the estimated lifetime cancer risk is 1.5×10^{-3}. The concentrations of arsenic associated with an excess lifetime cancer risk of 1 in 10 000, 1 in 100 000 and 1 in 1 000 000 are 66 ng/m³, 6.6 ng/m³ and 0.66 ng/m³, respectively.

Reference

The Private Water Supplies (England) Regulations (2016) and The Private Water Supplies (Wales) Regulations (2017) (viewed on 27 September 2024)

The Water Supply (Water Quality) Regulations (2018) (Water, England and Wales) (viewed on 27 September 2024)

World Health Organization. 'Guidelines for Drinking-water Quality, 4th Edition Incorporating First and Second Addendum' 2022 (viewed on 27 September 2024)

World Health Organization Regional Office for Europe, Copenhagen World Health Organization Regional Publications 'guidelines for indoor air quality: selected pollutants' 2010 (viewed on 27 September 2024)

Public Health England. 'Indoor Air Quality Guidelines for selected Volatile Organic Compounds (VOCs) in the UK' 2019 (viewed on 27 September 2024)

World Health Organization Regional Office for Europe. 'Air Quality Guidelines for Europe, European Series, No. 91, 2nd Edition', 2000 (viewed on 27 September 2024)

Health effects

Highly toxic by ingestion and inhalation. Irritant to the skin and eyes.

Table 9. Signs or symptoms of acute exposure

Route	Signs and symptoms
Inhalation	Arsenic compounds are irritant to the upper airways and can produce laryngitis, bronchitis and rhinitis. Short-term inhalation of arsenic has led to nausea, vomiting and diarrhoea. (due to transport arsenic particles to the larynx by mucociliary clearance and the GI tract by swallowing) Acute encephalopathy (hallucinations, increased excitability, emotional lability, memory loss, difficulties in learning new information) has been reported after occupational exposure, but ingestion of arsenic cannot be excluded as the main route of exposure. Features of systemic toxicity may also occur.
Ingestion and systemic features	Following acute exposure features usually start within 30 minutes to 2 hours and commonly include abdominal pain, vomiting and diarrhoea. In more severe cases, the severity of gastrointestinal fluid loss may precipitate hypovolemic shock and acute tubular necrosis. Trivalent arsenic compounds such as arsenic trioxide are particularly irritant to the GI mucosa and may cause haemorrhagic gastroenteritis. The most severely poisoned patients progress within hours to multi-organ involvement. Features include in hepatic and renal injury, coagulopathy, haemolysis, rhabdomyolysis, non-cardiogenic pulmonary oedema (adult respiratory distress syndrome), pancreatitis, myelosuppression (classically pancytopaenia) and cardiac involvement (myocardial depression, ST segment changes, prolonged QT interval, ventricular tachycardia, torsade de pointes or ventricular fibrillation). Neurological features include CNS depression, hallucinations, paraesthesia, convulsions, encephalopathy and peripheral neuropathy. The latter is typically a symmetrical sensorimotor neuropathy, sometimes resembling the Guillain-Barre syndrome and may be seen up to 5 weeks after exposure.
Eyes	Highly irritant and corrosive to the eye. There are limited data on ocular exposure, but features expected include pain, lacrimation, blepharospasm, conjunctivitis, photophobia, visual disturbance and corneal damage.

Route	Signs and symptoms
Dermal	Arsenic compounds are irritants. Typical responses following skin contact include erythema and swelling, with papules and blisters in more severe cases. Toxic epidermal necrolysis has been reported. Exposure to arsenic in the workplace has also caused contact dermatitis. Features of systemic toxicity would only be expected following prolonged skin exposure or if contact is with damaged skin.

Reference

National Poisons Information Service (NPIS). TOXBASE. 'Arsenic and arsenic compounds' 2019 (viewed on 27 September 2024)

Decontamination at the scene

Chemical specific advice

The approach used for decontamination at the scene will depend upon the incident, location of the casualties and the chemicals involved. Therefore, a risk assessment should be conducted to decide on the most appropriate method of decontamination.

Following disrobe, improvised dry decontamination should be considered for an incident involving arsenic compounds unless casualties are demonstrating obvious signs of exposure to caustic or corrosive substances.

People who are processed through improvised decontamination should subsequently be moved to a safe location, triaged and subject to health and scientific advice. Based on the outcome of the assessment, they may require further decontamination.

Emergency services and public health professionals can obtain further advice from the UK Health Security Agency (UKHSA) Radiation, Chemicals and Environment Directorate using the 24-hour chemical hotline number: 0344 892 0555.

Disrobe

The disrobe process is highly effective at reducing exposure to HAZMAT/CBRN material when performed within 15 minutes of exposure.

Therefore, disrobe must be considered the primary action following evacuation from a contaminated area.

Where possible, disrobing should be conducted at the scene and by the casualty themselves. Disrobing should be systematic to prevent transfer of contaminant from clothing to skin. Clothing should not be pulled over the head if possible.

Clothing stuck to the casualty by the contaminant should not be forcefully removed, as this risks causing further harm.

Consideration should be given to ensuring the welfare and dignity of casualties as far as possible. Immediately after decontamination the opportunity should be provided to dry and dress in clean robes or clothes.

Improvised decontamination

Improvised dry decontamination should be considered for an incident involving arsenic unless casualties are demonstrating obvious signs of chemical burns or skin irritation.

Improvised decontamination is an immediate method of decontamination prior to the use of specialised resources. This should be performed on all contaminated casualties unless medical advice is received to the contrary. Improvised dry decontamination should be considered for an incident involving chemicals unless the agent appears to be corrosive or caustic.

Unprotected first responders and members of the public should not approach casualties incapacitated by exposure to administer improvised decontamination, as they may be exposed to contaminants and become a casualty themselves.

Important note: Improvised decontamination should continue until more structured interventions such as Interim or Specialist Operational Response are present.

Improvised dry decontamination

Exposed skin surfaces should be blotted first and then rubbed, starting with the face, head, and neck, and moving down and away from the body.

Blotting and rubbing should not be too aggressive, as it could drive contamination further into the skin.

Casualties should also blow their nose to remove contaminants from the nasal cavities.

All waste material arising from decontamination should be left in situ, and ideally bagged, for disposal at a later stage.

Improvised wet decontamination

Wet decontamination should be used if contamination with a caustic chemical substance is suspected.

Water should only be used for decontamination where casualty signs and symptoms are consistent with exposure to caustic or corrosive substances such as acids or alkalis.

Wet decontamination may be performed using copious amounts of water from any available source such as taps, showers, water bottles, fixed installation hose-reels and sprinklers to gently rinse the affected skin. Other natural sources of water may be considered unless this creates greater risks to the individuals affected. Wet wipes or baby wipes may be used as an effective alternative.

Improvised decontamination should not involve overly aggressive methods to remove contamination as this could further damage affected tissues and drive the contamination further into the skin.

Where appropriate, seek professional advice on how to dispose of contaminated water and prevent run-off going into the water system.

Additional notes

Following improvised decontamination, remain cautious and observe for signs and symptoms in the decontaminated person and in unprotected staff.

If water is used to decontaminate casualties this may be contaminated, and therefore hazardous, and a potential source of further contamination spread.

All materials (paper tissues and so on) used in this process may also be contaminated and, where possible, should not be used on new casualties.

The risk from hypothermia should be considered when disrobe and any form of wet decontamination is carried out.

People who are contaminated should not eat, drink or smoke before or during the decontamination process and should avoid touching their face.

When vulnerable people are affected by a hazardous substance, they may need additional support to remove themselves, their clothing or the substance.

Casualties should remain in the area and should not leave to seek care at a hospital, as this presents a contamination risk. Further care will be administered on site by the appropriate emergency services.

Interim wet decontamination

Interim decontamination is the use of standard Fire and Rescue Service equipment to provide a planned and structured decontamination process prior to the availability of purpose-designed decontamination equipment.

Decontamination at the scene references

Home Office. 'Initial operational response to a CBRN incident.' Version 2.0 July 2015 (viewed on 27 September 2024)

National Health Service England. 'Emergency Preparedness, Resilience and Response (EPRR): Guidance for the initial management of self-presenters from incidents involving hazardous materials.' 2019 (viewed on 27 September 2024)

Joint Emergency Service Interoperablility Programme. 'Initial Operational Response IOR to Incidents Suspected to Involve Hazardous Substances or CBRN Materials' 2024 (viewed on 27 September 2024)

Clinical decontamination and first aid

Clinical decontamination is the process where trained healthcare professionals, using purpose-designed decontamination equipment, treat contaminated persons individually.

Detailed information on clinical management can be found on TOXBASE.

Important notes

Once body surface contaminants have been removed or if your patient was exposed by ingestion or inhalation, the risk that secondary care givers may become contaminated is very low. Secondary carers should wear standard hospital PPE as a precaution against secondary contamination from vomit and body fluids.

If the patient has not been decontaminated following surface contamination, secondary carers must wear appropriate NHS PPE for chemical exposure to avoid contaminating themselves.

The area should be well ventilated.

For comprehensive clinical advice consult TOXBASE directly.

Clinical decontamination following surface contamination

Avoid contaminating yourself.

Carry out decontamination after resuscitation. This should be performed in a well-ventilated area preferably with its own ventilation system.

Contaminated clothing should be removed, double-bagged, sealed and stored safely.

Decontaminate open wounds first and avoid contamination of unexposed skin.

Any particulate matter adherent to skin should be removed and the patient washed with soap and water under low pressure for at least 10 to 15 minutes.

Pay particular attention to mucous membranes, moist areas such as skin folds, fingernails and ears.

The earlier irrigation begins, the greater the benefit.

Dermal exposure

Decontaminate (as above) the patient following surface contamination.

If symptomatic, manage as per ingestion/inhalation.

For management of chemical burns seek advice from your regional burns unit.

Other supportive measures as indicated by the patient's clinical condition.

Ocular exposure

Remove contact lenses if present.

Anaesthetise the eye with a topical local anaesthetic (for example, oxybuprocaine, amethocaine or similar). However, do not delay irrigation if local anaesthetic is not immediately available.

Immediately irrigate the affected eye thoroughly with 1,000mL 0.9% saline or equivalent crytalloid (for example, by an infusion bag with a giving set) for a minimum of 10 to 15 minutes irrespective of initial conjunctival pH. A Morgan Lens may be used if anaesthetic has been given.

Aim for a neutral conjunctival pH of 7 to 7.2. The conjunctivae may be tested with indicator paper. Retest at 15 to 30 minutes after irrigation and use further irrigation if necessary.

Any particles lodges in the conjunctival recesses should be removed.

Repeated instillation of local anaesthetics may reduce discomfort and help more thorough decontamination. However, prolonged use of concentrated local anaesthetics is damaging to the cornea.

Patients with corneal damage, those who have been exposed to strong acids or alkalis and those whose symptoms do not resolve rapidly should be discussed urgently with an ophthalmologist.

Other supportive measures as indicated by the patient's clinical condition.

Inhalation

Maintain a clear airway and ensure adequate ventilation.

Treat systemic features of toxicity as for ingestion.

Other supportive measures as indicated by the patient's clinical condition.

Ingestion

Maintain a clear airway and ensure adequate ventilation.

Where the practical expertise exists, consider gastric aspiration/lavage in adults within 1 hour of ingestion of an arsenic compound, providing the airway can be protected. Activated charcoal is unlikely to be of benefit. See TOXBASE for further information.

Monitor vital signs and cardiac rhythm; check the capillary blood glucose.

Check and record pupil size.

Perform a 12-lead ECG in all patients who require assessment.

Other supportive measures as indicated by the patient's clinical condition.

Clinical decontamination and first aid references

National Poisons Information Service (NPIS). TOXBASE. 'Arsenic and Arsenic compounds' 2024(viewed on 27 September 2024)

National Poisons Information Service (NPIS). TOXBASE. 'Chemicals splashed or sprayed into the eyes – features and clinical management' 2020 (viewed on 27 September 2024)

National Poisons Information Service (NPIS). TOXBASE. 'Skin decontamination – irritants' 2019 (viewed on 27 September 2024)

About the UK Health Security Agency

UKHSA is responsible for protecting every member of every community from the impact of infectious diseases, chemical, biological, radiological and nuclear incidents and other health threats. We provide intellectual, scientific and operational leadership at national and local level, as well as on the global stage, to make the nation health secure.

UKHSA is an executive agency, sponsored by the Department of Health and Social Care.

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