

PULMONARY AGENTS

CG

Signs and Symptoms: eye and airway irritation, dyspnea, chest tightness, and delayed pulmonary edema.

Detection: odor of newly mown hay or freshly cut grass or corn. Neither the M256A1 detector kit nor chemical-agent detector paper (MB paper, M9 paper) is designed to identify phosgene, but the MINICAMS, Monitox Plus, Draeger tubes, Individual Chemical Agent Detector (ICAD), M18A2, M90, and M93A1 Fox will detect small concentrations of this gas.

Decontamination: vapor .fresh air; liquid .copious water irrigation.

Management: termination of exposure, ABCs of resuscitation, enforced rest and observation, oxygen with or without positive airway pressure for signs of respiratory distress, other supportive therapy as needed.

CYANIDE

AC, CK

Signs and Symptoms: few. After exposure to high Ct, seizures, respiratory and cardiac arrest.

Detection: The M256A1 detector ticket detects hydrogen cyanide (AC) as vapor or gas in the air, and the M272 kit detects cyanide in water. The ICAD, M18A2, and M90 detectors also detect AC. The CAM, M8A1 automatic chemical agent alarm (ACAA), and MB and M9 paper do not detect cyanide.

Decontamination: Skin decontamination is usually not necessary because the agents are highly volatile. Wet, contaminated clothing should be removed and the underlying skin decontaminated with water or other standard decontaminants.

Management: **Antidote:** intravenous (IV) sodium nitrite and sodium thiosulfate. **Supportive:** oxygen, correct acidosis.

MUSTARD

HD, H

Signs and Symptoms: asymptomatic latent period (hours). Erythema and blisters on the skin; irritation, conjunctivitis, corneal opacity, and damage in the eyes; mild upper respiratory signs to marked airway damage; also gastrointestinal (GI) effects and bone marrow stem cell suppression.

Detection: M256A1, M272 water testing kit, MINICAMS, the CAD, M18A2, M21 remote sensing alarm, M90, M93A1 Fox, Bubbler, CAM, and DAAMS (but NOT the M8A1 automatic chemical agent alarm), M8 paper, or M9 paper.

Decontamination: 0.5% hypochlorite, M291 kit, and water in large amounts.

Management: Decontamination immediately after exposure is the only way to prevent damage. Supportive care of patients :there is no specific therapy.

LEWISITE

L

Signs and Symptoms: Lewisite causes immediate pain or irritation of skin and mucous membranes. Erythema and blisters on the skin and eye and airway damage similar to those seen after mustard exposures develop later.

Detection: M256A1, M272 water testing kit, MINICAMS, the CAD, M18A2, M21 remote sensing alarm, M90, M93A1 Fox, Bubbler, CAM, and DAAMS (but NOT the M8A1 automatic chemical agent alarm), MB paper, or M9 paper.

Decontamination: M291, 0.5% hypochlorite, water in large amounts.

Management: immediate decontamination; symptomatic management of lesions the same as for mustard lesions; a specific antidote (BAL) will decrease systemic effects.

PHOSGENE OXIME

CX

Signs and Symptoms: immediate burning and irritation followed by wheal-like skin lesions and eye and airway damage.

Detection: M256A1, M1BA2, M90, and M93 Fox (but NOT the M272 water testing kit), MINICAMS, the ICAD, M21 remote sensing alarm, Bubbler, CAM, DAAMS, the MBA1 automatic chemical agent alarm, MB paper, or M9 paper.

Decontamination: water in large amounts, 0.5% hypochlorite, M291.

Management: immediate decontamination, symptomatic management of lesions.

NERVE AGENTS

GA, GB, GD, GF, VX

Signs and Symptoms:

Vapor:

Small exposure -miosis, rhinorrhea, mild difficulty breathing.

Large exposure -sudden loss of consciousness, convulsions, apnea, flaccid paralysis, copious secretions, miosis.

Liquid on skin:

Small to moderate exposure -localized sweating, nausea, vomiting, feeling of weakness.

Large exposure -sudden loss of consciousness, convulsions, apnea, flaccid paralysis, copious secretions.

Detection: M256A1, CAM, MB paper, M9 paper, MBA1 and MB alarm systems.

Decontamination: M291, M25BA1, hypochlorite, large amounts of water.

Immediate management: administration of MARK I Kits (atropine and pralidoxime chloride); diazepam in addition if casualty is severe; ventilation and suction of airways for respiratory distress.

INCAPACITATING AGENTS

BZ, Agent 15

Signs and Symptoms: mydriasis; dry mouth; dry skin; increased DTRs; decreased level of concentration; disturbance in perception and interpretation (illusions and/or hallucinations); denial of illness; short attention span; impaired memory.

Detection: No field detector is available.

Decontamination: Gentle, but thorough washing of skin and hair with water or soap and water is required. Bleach is not necessary. Remove clothing.

Management: Antidote: physostigmine.
Supportive: monitoring of vital signs, especially core temperature.

INCAPACITATING AGENTS

BZ, Agent 15

SUMMARY

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Supportive: monitoring of vital signs, especially core temperature.

RIOTCONTROL AGENTS

CS, CN

Signs and Symptoms: burning and pain on exposed mucous membranes and skin, eye pain and tearing, burning in the nostrils, respiratory discomfort, and tingling of the exposed skin.

Detection: no detector.

Decontamination: Eyes: thoroughly flush with water, saline, or similar substance. Skin: flush with copious amounts of water, alkaline soap and water, or a mildly alkaline solution (sodium bicarbonate or sodium carbonate). Generally, decontamination is not needed if the wind is brisk. Hypochlorite exacerbates the skin lesion and should not be used.

Immediate management: Usually none is necessary; effects are self-limiting.