



Emergency Preparedness & Response

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NIOSH EMERGENCY RESPONSE CARD

BLOOD AGENT

SODIUM CYANIDE

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UN #: [1689](#) (Guide 157)
 CAS #: 143-33-9
 RTECS #: [VZ7525000](#)

Hydrocyanic acid, sodium salt
 Cyanogran
 Cyanide of Sodium
 Cymag
 cyanobrik
 Prussiate of soda

Chemical Formula: NaCN

Molecular weight: 49.01

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TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ CLINICAL SIGNS/ SYMPTOMS	PREVENTION/ PERSONAL PROTECTIVE EQUIPMENT	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible but forms flammable gas on contact with water or damp air. Gives off irritating or toxic gases (hydrogen cyanide and oxides of nitrogen) in a fire.	N/A	In case of fire in the surroundings: foam and powder, NO hydrous agents, NO water, NO carbon dioxide.
EXPLOSION	N/A	N/A	In case of fire: cool drums, etc., by spraying with water but avoid contact of the substance with water.
ROUTE OF EXPOSURE			

Public Inquiries
 English (888) 246-2675
 Español (888) 246-2857
 TTY (866) 874-2646
 Mon-Fri 8am-11pm EST
 Sat-Sun 10am-8pm EST

Centers for Disease Control and Prevention
 1600 Clifton Rd.
 Atlanta, GA 30333
 USA
 (404) 639-3311



<p>Synopsis:</p>	<p>N/A</p>	<p>PREVENT DISPERSION OF DUST!</p> <p>STRICT HYGIENE!</p> <p>Avoid any skin contact.</p>	<p>Seek medical attention immediately.</p> <p>Triage procedures and medical management guidelines - see ATSDR Toxicology Profile on cyanide and ATSDR medical management guidelines on hydrogen cyanide.</p>
<p>Inhalation:</p>	<ul style="list-style-type: none"> • Headache • Dizziness • Confusion • Nausea • Shortness of breath • Convulsions • Vomiting • Weakness • Anxiety • Irregular heart beat • Tightness in the chest • Unconsciousness • Effects may be delayed. 	<p>Ventilation, local exhaust, or breathing protection.</p> <p>Pressure demand, self-contained breathing apparatus (SCBA) (SCBA CBRN, if available) is recommended in response to non-routine emergency situations.</p> <p>CBRN, Full Facepiece APR (when available) is recommended in non-routine, emergency situation environments less than IDLH but above REL or PEL levels.</p>	<p>Fresh air, rest. Artificial respiration if indicated. No mouth-to-mouth artificial respiration. Administer oxygen if breathing is difficult.</p> <p>Seek medical attention immediately.</p> <p>(See Notes.)</p> <p>Triage procedures and medical management guidelines - see ATSDR Toxicology Profile on cyanide and ATSDR medical management guidelines on</p>

			hydrogen cyanide.)
Skin:	<p>MAY BE ABSORBED! Redness. Pain.</p> <p><i>(See Inhalation for other symptoms.)</i></p>	<p>Avoid any skin contact. Butyl rubber gloves. Teflon, Responder, or Tychem Protective clothing.</p>	<p>Wear protective gloves when administering first aid. Remove contaminated clothes. Rinse skin with plenty of water or shower.</p> <p>Seek medical attention immediately.</p>
Eyes:	<p>Redness. Pain. Severe deep burns.</p> <p><i>(See Inhalation for other symptoms.)</i></p>	<p>Safety goggles, face shield, or eye protection in combination with breathing protection if powder.</p>	<p>First rinse with plenty of water for several minutes.</p> <p>Seek medical attention immediately.</p>
Ingestion:	<p>Burning sensation.</p> <p><i>(See Inhalation for other symptoms.)</i></p>	<p>Do not eat, drink, or smoke during work. Wash hands before eating.</p>	<p>Do not induce vomiting. No mouth-to-mouth artificial respiration. Administer oxygen if breathing is difficult.</p> <p>Seek medical attention immediately.</p> <p><i>(See Notes.)</i></p>

<p>OCCUPATIONAL EXPOSURE LIMITS (OELs):</p>	<p>OSHA PEL*: TWA 5 mg/m³ *Note: The PEL also applies to other cyanides (as CN) except Hydrogen cyanide NIOSH REL: C 5 mg/m³ (4.7 ppm) 10-minute *Note: The REL also applies to other cyanides (as CN) except Hydrogen cyanide. NIOSH PG 0522 ACGIH TLV (as CN): 5 mg/m³ (ceiling values) (skin) (ACGIH 2002). NIOSH IDLH: 25 mg/m³(as CN)</p>
<p>SAMPLING AND ANALYTICAL METHODS:</p>	<p>NIOSH 6010 (HYDROGEN CYANIDE) NIOSH 7904 (CYANIDES, aerosol and gas)</p>

<p>DECONTAMINATION</p>	<p>Patients/victims: Wet contaminated clothing should be removed and the underlying skin washed with soap and water or water alone for 2-3 minutes.</p> <p>Equipment: N/A</p> <p>Environment: <i>(See Spillage Disposal.)</i></p>
<p>SPILLAGE DISPOSAL</p>	<p>Evacuate danger area! Consult an expert! Eliminate all ignition sources (no smoking, flares, sparks, or flames) in the immediate area. Ventilation. Do NOT wash away into sewer. Sweep spilled substance into dry sealable and labeled containers. Cautiously neutralize remainder with water containing some alkaline material such as sodium carbonate. Then wash away with plenty of water. Do NOT let this chemical enter the environment.</p> <p>Extra personal protection: complete protective clothing including self-contained breathing apparatus.</p> <p>Storage: Separated from strong oxidants, acids, food and feedstuffs, carbon dioxide, water or products containing water. Dry. Well closed. Keep in a well-ventilated room.</p>
<p>PACKAGING & LABELLING</p>	<p>UN# 1689 Guide 157</p> <p>Airtight. Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs.</p> <p>Marine pollutant.</p> <p>Note: A</p> <p>N symbol</p> <p>R: 26/27/28-32-50/53</p> <p>S: 1/2-7-28-29-45-60-61</p> <p>UN Hazard Class: 6.1</p> <p>UN Packing Group: I</p>

NFPA 704 Signal:

Health - 3
 Flammability - 0
 Reactivity - 0
 Special -

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:

White hygroscopic crystalline powder, with characteristic odor. Odorless when dry.

PHYSICAL DANGERS:

Corrosive to aluminum.

CHEMICAL DANGERS:

The substance decomposes on contact with acids, acid salts, water, moisture and carbon dioxide, producing highly toxic, flammable hydrogen cyanide gas. The solution in water is a strong base, it reacts violently with acid and is corrosive. Reacts violently with strong oxidants such as nitrates, chlorates, nitric acid and peroxides, causing explosion hazard.

ROUTES OF EXPOSURE:

The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying or when dispersed, especially if powdered.

EFFECTS OF SHORT-TERM EXPOSURE:

Sodium cyanide irritates and severely damages the tissues of the eyes, the skin, the respiratory tract, and the oral and gastrointestinal tract. Cyanides poison the vital organs of the body (for example, heart and lungs) including areas of the brain that regulate the proper functioning of those organs. Exposure may result in convulsions, unconsciousness, and death. Medical observation is indicated. ((See Notes.))

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:

N/A

PHYSICAL PROPERTIES

Melting Point: 1045.4°F (563°C)

Boiling Point: 2724.8°F (1496°C)

Vapor Pressure (20°C): Negligible

Volatility: Negligible at 20°C

	Density/Specific Gravity: 1.595 Aqueous Solubility (20°C): 40 g/100 ml estimated log K_{ow} : N/A Flashpoint: N/A Flammability: N/A
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ENVIRONMENTAL DATA	The substance is very toxic to aquatic organisms.
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ACUTE EXPOSURE GUIDELINES (AEGLs)		10 min	30 min	1hr	4 hr	8 hr
	AEGL 1 (discomfort, non-disabling)	N/A	N/A	N/A	N/A	N/A
	AEGL 2 (irreversible or other serious, long-lasting effects or impaired ability to escape)	N/A	N/A	N/A	N/A	N/A
	AEGL 3 (life-threatening effects or death)	N/A	N/A	N/A	N/A	N/A

NOTES

The occupational exposure limit value should not be exceeded during any part of the working exposure. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available. Do NOT take working clothes home. Never work alone in an area if hydrocyanic acid exposure is possible.

ADDITIONAL INFORMATION	
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GLOSSARY OF ACRONYMS	APR - Air-purifying Respirator CBRN - Chemical, Biological, Radiological, Nuclear IDLH - Immediately Dangerous to Life and Health REL - Recommended Exposure Limit PEL - Permissible Exposure Limit SCBA - Self-Contained Breathing Apparatus
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IMPORTANT NOTICE:	SODIUM CYANIDE (ERC143-33-9) The user should verify compliance of the cards with the relevant STATE or TERRITORY legislation before use. NIOSH, CDC 2003
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