Material Safety Datasheet

Company Details

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1. Product and Company Identification

Trade / Commercial Name: Sodium Cyanide
Chemical Name: sodium cyanide
Formula: NaCN
Chemical Family:
Synonyms: Cyanide of Sodium, Prussiate of Soda, 157
Un No: 1689
Hazchem Code: 4x
ERG No: 157
EAC: 55

2. Hazards Identification

Poison
May be fatal if inhaled, swallowed, or absorbed through the skin or eyes.
Contact could cause burns to skin and eyes.
Runoff from fire-control or dilution water could give off poisonous gases and cause water pollution.
Fire could produce irritating or poisonous gases.
IN CASE OF CYANIDE POISONING, START FIRST AID TREATMENT IMMEDIATELY, THEN CALL A PHYSICIAN.

3. Composition

Hazardous Components: Sodium cyanide 96%
Sodium Cyanide in contact with water liberates small amounts of Hydrogen Cyanide (HCN) gas

4. First Aid Measures

First Aid Skin
If consciousness is impaired, oxygen and amyl nitrite should be administered.
Remove contaminated clothing and shoes under shower, flush with large quantity of water. Call a physician.
Wash affected area with plenty of soap and water for at least 20 minutes.

First Aid Eyes
Flush eyes with water for 15 minutes.
Hold eyelids open while washing.
See a physician.

First Aid Ingested
If victim is conscious, immediately have patient spit and rinse mouth with water then give activated charcoal slurry. If consciousness is impaired, immediatly administer oxygen and amyl nitrite by using positive pressure resuscitator.
Call a physician.

First Aid Inhalation
Remove from contaminated area.
If not breathing administer oxygen and amyl nitrite, using a positive pressure resuscitator. Keep patient warm and calm. Call a physician.
If breathing of victim is difficult administer oxygen for a maximum period of one hour.
IMMEDIATELY USE CYANIDE FIRST AID BOX.

5. Fire Fighting Measures

SMALL FIRES: Dry chemical or standard foam. Do not use CO2.
LARGE FIRES: Water spray, fog or standard foam is recommended. Move container from fire area if you can do it without risk. Fight fire from maximum distance. Dike fire control water for later disposal; do not scatter the material. Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas, and ventilate closed spaces before entering. Positive-pressure self-contained breathing apparatus (SCBA) and chemical protective clothing that is specifically recommended by the shipper or manufacturer may be worn. It will provide little or no thermal protection. Structural firefighter's protective clothing is NOT effective with these materials. Remove and isolate contaminated clothing at the site.

6. Accidental Release Measures

Full protective clothing including breathing apparatus
Contain (avoid spillage from entering drains or water courses)

PRECAUTIONS:
Restrict access to area.
Provide adequate protective equipment and ventilation.
Remove sources of heat and flame.
Notify occupational and environmental authorities.

SPILL OR LEAK:
Do not touch spilled material.
Stop leak if you can do it without risk.

SMALL SPILLS:
Takeup with sand or other noncombustible absorbent material and place into containers for later disposal.

SMALL DRY SPILLS: With clean shovel place material into clean, dry container and cover; move container from spill area.

LARGE SPILLS:
Dike far ahead of liquid spill for later disposal.

7. Handling And Storage

Store in properly labeled containers in dry, ventilated, secured areas. Do not handle or store food, beverages, or tobacco in cyanide areas. If legal, do not store under sprinkler systems. Separation of at least 5M from the following classes is recommended.
Corrosives
Fire separation of at least 5M or 4Hr fire resistant wall from the following classes is recommended.
Flammable Gases Flammable Liquids Flammable Solids Spontaneously Combustibles
Dangerous When Wet Oxidizing Agents
Storage in the same room or space is prohibited with the following classes: The rooms or spaces should be at least 10M apart.
Explosives Organic Peroxides

8. Exposure Controls/Personal Protection

Occupational Exposure Limits
Sodium Cyanide:
PEL (OSHA) 5 mg / m3, as CN, 8 Hr. TWA Skin
TLV (ACGIH) Ceiling 5 mg / m3, as CN, Skin
AEL (DuPont) 5 mg / m3, 15 minute TWA, as CN, Skin

Hydrogen Cyanide:
PEL (OSHA) 10 ppm, 11 mg / m3, Skin
TLV (ACGIH) Ceiling 4.7 ppm, 5 mg / m3, as CN, Skin
AEL (DuPont) 5 mg / m3, 15 minute TWA, as CN, Skin

Controls
The control measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. The best protection is to enclose operations and/or provide local exhaust ventilation at the site of chemical release. Use a non-sparking, grounded ventilation system separate from other exhaust ventilation systems. Exhaust directly to the outside. Supply sufficient replacement air to make up for air removed. Have a safety shower/eye wash fountain readily available in the immediate work area

Personal Protection
If engineering controls and work practices are not effective in controlling this
material, then wear suitable personal protection equipment, including chemical safety goggles & face shield, boots, imperious gloves, coveralls, & respiratory protection. Have appropriate equipment available for use in emergencies.

9. Physical & Chemical Properties

White deliquescent powder, granules, lumps or moulded shapes. Odourless when dry. Slight hydrocyanic acid (bitter almond) odour when moist.
Boiling Point: 1496 deg C @ 760 mm Hg
Vapour Pressure: Negligible
Vapour Density: Not volatile
Melting Point: 564 oC.
Solubility in water: 37 WT% @ 20 deg C
pH: 11 - 12 (5 - 25% solutions)
Specific Gravity: 1.6
Bulk Density (Packed): 50 - 55 lb / cu ft.

10. Stability And Reactivity

Conditions to Avoid
Reacts violently with strong oxidizing agents when heated. Water or weak alkaline solutions can produce dangerous amounts of hydrogen cyanide in confined areas.

Incompatible Materials
Reacts with acid, acid salts or carbon dioxide to liberate extremely toxic hydrogen cyanide (HCN) gas.

11. Toxicological Information

Poison / Toxic
Oral LD50: 15 mg / kg in rats
Dermal LD50: 11.28 - 14.63 mg / kg in rabbits
Inhalation LC50: no information found but considered to be highly toxic as CN by inhalation.

Note: Administration of Sodium cyanide to rats, cats, or dogs by the intravenous or intraperitoneal routes resulted in rapid respiration, confusion, unconsciousness, vomiting, decreased blood pressure, cardiac rate changes, seizures and respiratory failure.

12. Ecological Information

Ecotoxicological Information
Aquatic Toxicity:
96 hour LC50 - fathead minnows: 0.43 - 0.66 mg / Lt
96 hour LC50 - rainbow trout: 0.046 - 0.075 mg / Lt
96 hour LC50 - bluegill sunfish: 0.28 mg / lt

No ecological problems are expected when the product is handled and used with due care.

13. Disposal Considerations

Disposal Method Product
Detoxify with dilute sodium hypochlorite, hydrogen peroxide, or calcium hypochlorite.
There are no uniform EC regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. We recommend that you contact the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste.

Disposal Method Packaging
Disposal in accordance with local legal provisions.

14. Transport Information
UN No 1689  Hazchem Code 4x
ERG No 157  EAC 55
IMDG-Shipping Name SODIUM CYANIDE (P)
IMDG Code 6167  IMDG-Packaging Group I
Marine Pollutant Yes
Class Class: 6.1 Poison Group: I
Subsidiary Risks None

15. Regulatory Information

EEC Hazard Classification 6.1
Risk Phases Harmful by inhalation, in contact with skin and if swallowed
Safety Phases Keep out of reach of children
National Legislation SIN 1689
Keep away from food, drink and animal feeding stuffs
Regulated

16. Other Information

Reason for Alteration: General update.

The information contained herein is based on the present state of our knowledge.
It characterizes the product with regard to the appropriate safety precautions.
It does not represent a guarantee of the properness of the product.

All information is given in good faith but without guarantee in respect of accuracy & no responsibility is accepted for errors or omissions or the consequences thereof.