MATERIAL SAFETY DATA SHEET SODIUM CYANIDE MSDS

1: Chemical Product and Company Identification
Product Name: Sodium Cyanide
Catalogue Codes: SLS2314, SLS3736
CAS#: 143-33-9
RTECS: VZ7525000
TSCA: TSCA 8(b) inventory: Sodium Cyanide
CI#: Not available.
Synonym:
Chemical Name: Sodium Cyanide
Chemical Formula: NaCN

2: Composition and Information on Ingredients
Composition:

Name	CAS #	% by Weight
Sodium Cyanide	143-33-9	100

Toxicological Data on Ingredients: Sodium Cyanide: ORAL (LD50): Acute: 6.44 mg/kg [Rat]. DERMAL (LD50): Acute: 10.4 mg/kg [Rabbit].

3: Hazards Identification
Potential Acute Health Effects:
Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (permeator). Corrosive to eyes and skin. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to skin, eyes, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

4: First Aid Measures
Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:

If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available.

5: Fire and Explosion Data

Flammability of the Product:	May be combustible at high temperature.
Auto-Ignition Temperature:	Not available.
Flash Points:	Not available.
Flammable Limits:	Not available.
Products of Combustion:	Some metallic oxides.
Fire Hazards in Presence of Various Substances:	Slightly flammable to flammable in presence of acids, of moisture.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available.

Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards:

Dangerous on contact with acids, acid fumes, water or stream. It will produce toxic and flammable vapours of CN-H and sodium oxide. Contact with acids and acid salts

causes immediate formation of toxic and flammable hydrogen cyanide gas. When heated to decomposition it emits toxic fumes hydrogen cyanide and oxides of nitrogen

Special Remarks on Explosion Hazards:

Fusion mixtures of metal cyanides with metal chlorates, perchlorate or nitrates causes a violent explosion

6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.
Large Spill: Corrosive solid. Poisonous solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapours. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check
TLV on the MSDS and with local authorities.

7: Handling and Storage

Precautions:
Keep locked up. Keep container dry. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids, moisture.
Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 24°C (75.2°F).

8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection:
Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits:
STEL: 5 (mg/m3) from ACGIH (TLV) [United States] SKIN CEIL: 4.7 from NIOSH CEIL: 5 (mg/m3) from NIOSHConsult local authorities for acceptable exposure limits.

9: Physical and Chemical Properties

Physical state and appearance:	Solid. (Granular solid. Flakes solid.)
odour:	Faint almond-like odour. Odourless when perfectly dry. Emits odour of hydrogen cyanide when damp.
Taste:	Not available.
Molecular Weight:	49.01 g/mole
Colour:	White.
pH (1% soln/water):	Not available.
Boiling Point:	1496°C (2724.8°F)
Melting Point:	563°C (1045.4°F)
Critical Temperature:	Not available.
Specific Gravity:	1.595 (Water = 1)
Vapor Pressure:	Not applicable.
Vapor Density:	Vapor Density of Hydrogen Cyanide gas: 0.941
Volatility:	Not available.
odour Threshold:	Not available.
Water/Oil Dist. Coeff.:	Not available.
Iconicity (in Water):	Not available.
Dispersion Properties:	See solubility in water.
Solubility:	Soluble in cold water. Slightly soluble in Ethanol

10: Stability and Reactivity Data

Stability:	The product is stable.
Instability Temperature:	Not available.
Conditions of Instability:	Excess heat, moisture, incompatibles.
Incompatibility with various substances:	Reactive with oxidizing agents, acids, moisture.
Corrosivity:	
Corrosive in presence of aluminium.	Non-corrosive in presence of glass.
Special Remarks on Reactivity:	Violent reaction with fluorine gas, magnesium, nitrates, nitric acid. Dangerous on contact with acids, acid fumes, water or stream. It will produce toxic and flammable vapours of CN-H and sodium oxide. Cyanide may react with CO_2 in ordinary air to form toxic hydrogen cyanide gas. Strong oxidizers such as acids, acid salts, chlorates, and nitrates. Contact with acids and acid salts causes immediate formation of toxic and flammable hydrogen cyanide gas.
Special Remarks on Corrosivity:	Corrosive to aluminium
Polymerization:	Will not occur.

11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.
Toxicity to Animals: Acute oral toxicity (LD50): 6.44 mg/kg [Rat]. Acute dermal toxicity (LD50): 10.4 mg/kg [Rabbit].
Chronic Effects on Humans: May cause damage to the following organs: skin, eyes, central nervous system (CNS).

Other Toxic Effects on Humans: Very hazardous in case of skin contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (permeator).
Special Remarks on Toxicity to Animals: Not available.
Special Remarks on Chronic Effects on Humans: May cause adverse reproductive effects (maternal and paternal fertility) based on animal data.
Special Remarks on other Toxic Effects on Humans:
Acute Potential Health effects:
Skin: May cause itching and irritation. May be fatal if absorbed through injured skin with symptoms similar to those noted for inhalation and ingestion.
Eyes: May cause eye irritation and eye damage.
Inhalation: May cause respiratory tract irritation. May be fatal if inhaled. The substance inhibits cellular respiration causing metabolic asphyxiation. May cause headache, weakness, dizziness, laboured breathing, nausea, vomiting. May be followed by cardiovascular effects, unconsciousness, convulsions, coma, and death
Ingestion: May be fatal if swallowed. May cause gastrointestinal tract irritation with nausea, vomiting. May affect behaviour and nervous systems (seizures, convulsions, change in motor activity, headache, dizziness, confusion, weakness stupor, anxiety, agitation, tremors), cardiovascular system, respiration (hyperventilation, pulmonary enema, breathing difficulty, respiratory failure), cardiovascular system (palpitations, rapid heartbeat, hypertension, hypotension). Massive doses by produce sudden loss of consciousness and prompt death from respiratory arrest. Smaller but still lethal doses on the breath or vomitus.
Chronic Potential Health Effects: Central Nervous system effects (headaches, vertigo, insomnia, memory loss, tremors, fatigue), fatigue, metabolic effects (poor appetite), cardiovascular effects (chest discomfort, palpitations), nerve damage to the eyes, or dermatitis, respiratory tract irritation, eye irritation, or death can occur. may prolong the illness for 1 or more hours. A bitter almond odour may be noted

12: Ecological Information
Ecotoxicity: Not available.
BOD5 and COD: Not available.
Products of Biodegradation: Possibly hazardous short-term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.
Special Remarks on the Products of Biodegradation: Not available.

13: Disposal Considerations
Waste Disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

14: Transport Information
DOT Classification: CLASS 6.1: Poisonous material.
Identification: Sodium cyanide UNNA: 1689 PG: I
Special Provisions for Transport: Marine Pollutant

15: Other Regulatory Information
Other Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the
European Inventory of Existing Commercial Chemical Substances.
Protective Equipment:
Gloves. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

16: Other Information
References: Not available.
Other Special Considerations: Not available

EXCLUSION OF LIABILITY

All information and instructions provided in this Material Safety Data Sheet in respect of the substance is given solely in terms of the provisions of the Occupational Health and Safety Act No 85 of 1993 and Regulations ("the Act"), is based on scientific and technical knowledge as at the date indicated on this MS Material Safety Data Sheet and is presented in good faith to be correct.

The information and instructions provided in this MSDS apply only to the substance in its present form and not to any formulation or mix, in which event it is the sole responsibility of the user of the substance as formulated and/or mixed to investigate and establish any danger which may arise out of its use, wherever such user may be situated.

It is the sole responsibility of the person in receipt of this Material Safety Data Sheet wherever such recipient may be situated, to ensure that the information provided is communicated to and understood by any person who may come in contact with the substance in any place and in any manner whatsoever. If such recipient produces formulations or mixes using the substance, then it is such recipient's sole responsibility to comply with the provisions of the Act in respect of the provision of the necessary Material Safety Data Sheet, or to comply with any other applicable legislation.