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**Safety Data Sheet**

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**1. Chemical product and company identification****Product name** : Sodium cyanide**SDS code** : C3-20a**Company/undertaking identification** :

HAYASHI PURE CHEMICAL IND.,LTD.

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URL : <https://www.hpc-j.co.jp/>**Emergency number** : 06-6910-7305**Recommended use** : For research and experimental use only.**Restrictions on use** : Do not use on a human body or for animal medicines, foods, household products, cosmetics, etc.**2. Hazards identification****GHS classification**

|                  |  |                             |
|------------------|--|-----------------------------|
| Physical hazards | Explosives   | No classification           |
|                  | Flammable gases  | No classification           |
|                  | Aerosol  | No classification           |
|                  | Oxidizing gases  | No classification           |
|                  | Gases under pressure   | No classification           |
|                  | Flammable liquids  | No classification           |
|                  | Flammable solids   | No classification           |
|                  | Self-reactive substances and mixtures                                    | No classification           |
|                  | Pyrophoric liquids   | No classification           |
|                  | Pyrophoric solids  | No classification           |
|                  | Self-heating substances and mixtures                                     | No classification           |
|                  | Substances and mixtures which in contact with water emit flammable gases | No classification           |
|                  | Oxidizing liquids  | No classification           |
|                  | Oxidizing solids   | No classification           |
|                  | Organic peroxides  | No classification           |
|                  | Corrosive to metals  | classification not possible |
|                  | Desensitized explosives  | classification not possible |
| Health hazards   | Acute toxicity (oral)  | Category 2                  |
|                  | Acute toxicity (dermal)  | Category 1                  |
|                  | Acute toxicity (inhalation:gas)  | No classification           |
|                  | Acute toxicity (inhalation:vapors)                                       | classification not possible |
|                  | Acute toxicity (inhalation:dust/mist)                                    | classification not possible |
|                  | Skin corrosion/irritation  | No classification           |
|                  | Serious eye damage/eye irritation  | Category 2A                 |
|                  | Respiratory sensitization  | classification not possible |
|                  | Skin sensitization   | classification not possible |
|                  | Germ cell mutagenicity   | classification not possible |
|                  | Carcinogenicity  | classification not possible |
|                  | Reproductive toxicity  | Category 2                  |
|                  | Specific target organ toxicity (single exposure)                         | classification not possible |

|                       |   |   |
|-----------------------|---|---|
| Environmental hazards | Specific target organ toxicity (repeated exposure)        | Category 1 (central nervous system, testis, kidneys, adrenal, spleen) |
|                       | Aspiration hazard   | classification not possible   |
|                       | Hazardous to the aquatic environment, short-term (acute)  | Category 1  |
|                       | Hazardous to the aquatic environment, long-term (chronic) | Category 1  |
|                       | Hazardous to the ozone layer                              | classification not possible   |

## Hazard pictograms (GHS JP)



GHS06



GHS08



GHS09

|                                   |   |
|-----------------------------------|---|
| Signal word (GHS JP)              | : Danger  |
| Hazard statements (GHS JP)        | : Fatal if swallowed or in contact with skin (H300+H310)<br>Causes serious eye irritation (H319)<br>Suspected of damaging fertility or the unborn child (H361)<br>Causes damage to organs (central nervous system, testis, kidneys, adrenal, spleen) through prolonged or repeated exposure (H372)<br>Very toxic to aquatic life with long lasting effects (H410)   |
| Precautionary statements (GHS JP) |   |
| Prevention                        | : Obtain special instructions before use. (P201)<br>Do not handle until all safety precautions have been read and understood. (P202)<br>Do not breathe dust/fume/gas/mist/vapors/spray. (P260)<br>Do not get in eyes, on skin, or on clothing. (P262)<br>Wash hands, forearms and face thoroughly after handling. (P264)<br>Do not eat, drink or smoke when using this product. (P270)<br>Avoid release to the environment. (P273)<br>Wear protective gloves/protective clothing/eye protection/face protection. (P280)   |
| Response                          | : IF SWALLOWED: Immediately call a POISON CENTER or doctor. (P301+P310)<br>IF ON SKIN: Wash with plenty of water. (P302+P352)<br>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. (P305+P351+P338)<br>IF exposed or concerned: Get medical advice/attention. (P308+P313)<br>Immediately call a POISON CENTER or doctor. (P310)<br>Get medical advice/attention if you feel unwell. (P314)<br>Rinse mouth. (P330)<br>If eye irritation persists: Get medical advice/attention. (P337+P313)<br>Take off immediately all contaminated clothing and wash it before reuse. (P361+P364)<br>Collect spillage. (P391) |
| Storage                           | : Store locked up. (P405)   |
| Disposal                          | : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. (P501)  |

### 3. Composition/information on ingredients

|                                     |             |
|-------------------------------------|-------------|
| Distinction of substance or mixture | : Substance |
| Synonyms                            | : -         |

| Name           | Concentration or Concentration range | Formula | Kanpo number |                             | CAS RN   |
|----------------|--------------------------------------|---------|--------------|-----------------------------|----------|
|                |                                      |         | CSCL no      | ISHL no                     |          |
| Sodium cyanide | ≥95.0%、≤100%                         | NaCN    | (1)-158      | Existing Chemical Substance | 143-33-9 |

The above concentration or concentration range are not product specification.

All percentages listed in the above concentration or concentration range are wt%, unless otherwise specified.

## 4. First aid measures

### First aid measures

- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
Get immediate medical advice/attention.
- First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing.  
Gently wash with plenty of soap and water.  
Get immediate medical advice/attention.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Get immediate medical advice/attention.
- First-aid measures after ingestion : Rinse mouth.  
Get immediate medical advice/attention.

## 5. Fire fighting measures

- Suitable extinguishing media : Dry powder, Sand.
- Unsuitable extinguishing media : Water, Carbon dioxide (CO<sub>2</sub>)
- Fire hazard : This product is unburnable.
- Explosion hazard : May induce explosion of containers by heating.  
May induce explosion of containers by water contamination.
- Hazardous decomposition products in case of fire : In case of fire, product may produce irritative or toxic fumes/gases.
- Firefighting instructions : If ignited, for the initial fire-fighting, cut off combustion sources, extinguish fire at a stroke using appropriate fire-extinguishers.  
In the case of peripheral fire, quickly remove movable containers to safe places.  
If unable to be moved containers, sprinkle water to containers and surrounding equipment, etc. to cool.  
Avoid (reject) fire-fighting water to enter environment.  
Even after extinguishing fire, thoroughly cool containers by using plenty of water.
- Protection during firefighting : Wear appropriate fire-resistant clothing including self contained-compressed air breathing apparatus.

## 6. Accidental release measures

### Personal Precautions, Protective Equipment and Emergency Procedures

- General measures : Before entering, ventilate the area.  
Do not let unauthorized persons come close to the area.  
Immediately place the leakage area in isolation, with taking proper distances for all directions.  
Wear appropriate personal protective devices to prevent inhalation and contact with eye, skin, and clothing, and never attempt to work on the lee.

### Environmental precautions

- Environmental precautions : Avoid release to the environment.  
Prevent entry to sewers and public waters.

### Methods and Equipment for Containment and Cleaning up

- Methods for cleaning up : Take care not to generate dust, sweep it up as much as possible, collect it in an empty container that can be sealed, and move it to a safe place.  
Wash out the spilled area with large amounts of water.

## 7. Handling and storage

### Handling

- Technical measures : Work with appropriate personal protective equipment to prevent inhalation or contact to eyes, skin, and clothing.  
Handle with care to prevent leakage, overflowing, or scattering, minimize generation of mist or vapor, and thoroughly ventilate.

Precautions for safe handling : Do not eat, drink or smoke when using this product.  
Thoroughly wash your hands and gargle after handling.  
Ensure good ventilation of the work station.  
Do not contact, breathe or swallow.

Prevents handling of incompatible substances or mixtures : Avoid prolonged or repeated exposure.

### Storage

Storage conditions : Store locked up.  
Store in a well-ventilated place, away from direct sunlight. Keep container tightly closed and keep away from fire and heat sources.

Material used in packaging/containers : Airtight container.

Technical measures : Comply with applicable regulations.

Storage temperature : Cool and dark place

## 8. Exposure controls / Personal protection equipment

| Component name | Administration level (MHLW) | Exposure limits (JSOH) |                           |
|----------------|-----------------------------|------------------------|---------------------------|
|                |                             | Standard Value         | JSOH OEL C                |
| Sodium cyanide | 3 mg/m <sup>3</sup> as CN   | -                      | 5 mg/m <sup>3</sup> as CN |

Appropriate engineering controls : Cover up tightly the generation source at the handling place or install local exhaust equipment or overall ventilation equipment. Install safety showers and eye-fountains near a handling place. Clearly indicate the location.

### Protective equipment

Respiratory protection : Dustproof mask  
Hand protection : Impervious protective gloves  
Eye protection : Protective glasses (general glasses, glasses with side-shields, goggles)  
Skin and body protection : Impervious aprons, Impervious work clothing, Impervious long boots

## 9. Physical and chemical properties

Physical state : Solid  
Appearance : Crystals ~ Crystalline powder  
Color : white ~ pale yellowish white  
Odor : Odorless  
pH : No data available  
Melting point : 563 °C  
Freezing point : No data available  
Boiling point : 1496 °C  
Flash point : Not inflammable  
Auto-ignition temperature : No data available  
Decomposition temperature : No data available  
Flammability : No data available  
Vapor pressure : No data available  
Relative density : No data available  
Density : 1.6 g/cm<sup>3</sup> (20°C)  
Relative gas density : No data available  
Solubility : Water: 58 g/100ml (20°C)  
Partition coefficient n-octanol/water (Log Pow) : No data available  
Explosive limits (vol %) : No data available  
Viscosity, kinematic : No data available  
Particle characteristics : No data available

## 10. Stability and reactivity

|                                    |   |
|------------------------------------|---|
| Reactivity                         | : No data available   |
| Chemical stability                 | : Stable under normal handling conditions. Decomposes by sunlight or heating to produce hydrogen cyanide and nitrogen oxides. It gradually reacts with carbon dioxide in the air to produce a small amount of hydrogen cyanide. |
| Possibility of hazardous reactions | : Reacts with acids and strong oxidizing agents. When contact with water or moisture, it produces toxic/flammable hydrogen cyanide.   |
| Conditions to avoid                | : Sunlight, moisture, heat. Contact with acids and strong oxidizing agents.   |
| Incompatible materials             | : Acids, Strong oxidizing agents  |
| Hazardous decomposition products   | : Nitrogen oxides, Hydrogen cyanide   |

## 11. Toxicological information

The information in this section is based on the "GHS Classification Results" by NITE.

| Sodium cyanide                        |                             |
|---------------------------------------|-----------------------------|
| Acute toxicity (oral)                 | Category 2                  |
| Acute toxicity (dermal)               | Category 1                  |
| Acute toxicity (gas)                  | No classification           |
| Acute toxicity (vapour)               | classification not possible |
| Acute toxicity (inhalation:dust/mist) | classification not possible |
| Skin corrosion/irritation             | Category 3                  |
| Serious eye damage/irritation         | Category 2A                 |
| Respiratory sensitization             | classification not possible |
| Skin sensitization                    | classification not possible |
| Germ cell mutagenicity                | classification not possible |
| Carcinogenicity                       | classification not possible |
| Reproductive toxicity                 | Category 2                  |
| STOT-single exposure                  | classification not possible |
| STOT-repeated exposure                | Category 1                  |
| Aspiration hazard                     | classification not possible |

## 12. Ecological information

The information in this section is based on the "GHS Classification Results" by NITE.

| Sodium cyanide                                    |                   |
|---|-------------------|
| Hazardous to Aquatic Environment - Acute Hazard   | Category 1        |
| Hazardous to Aquatic Environment - Chronic Hazard | Category 1        |
| Persistence and degradability                     | No data available |
| Bioaccumulative potential                         | No data available |
| Mobility in soil                                  | No data available |
| Hazardous to the ozone layer                      | No data available |

## 13. Disposal considerations

|                                      |   |
|--------------------------------------|---|
| Ecology - waste materials            | : With the detail information of the waste, subcontract its disposal to a waste disposer authorized by a Prefectural Governor.                              |
| Contaminated container and packaging | : Empty the packaging completely prior to disposal.<br>Empty containers should be taken for recycle, recovery or waste in accordance with local regulation. |

## 14. Transport information

### International Regulations

#### Transport by sea(IMDG)

|                                    |  |
|------------------------------------|--|
| UN-No. (IMDG)                      | : 1689   |
| Proper Shipping Name (IMDG)        | : SODIUM CYANIDE, SOLID  |
| Packing group (IMDG)               | : I  |
| Transport hazard class(es) (IMDG)  | : 6.1  |
| Hazard labels (IMDG)               | : 6.1  |
| Class (IMDG)                       | : 6.1  |
| Division (IMDG)                    | : 6.1  |
| Packing instructions (IMDG)        | : P002   |
| Packing provisions (IMDG)          | : PP31   |
| IBC packing instructions (IMDG)    | : IBC07  |
| IBC special provisions (IMDG)      | : B1   |
| Tank instructions (IMDG)           | : T6   |
| Tank special provisions (IMDG)     | : TP33   |
| Stowage category (IMDG)            | : B  |
| Properties and observations (IMDG) | : White, deliquescent crystals or lumps. Soluble in water. Reacts with acids or acid fumes, evolving hydrogen cyanide, a highly toxic and flammable gas. Highly toxic if swallowed, by skin contact or by dust inhalation. |
| MFAG-No                            | : 157  |

#### Air transport(IATA)

|  |                         |
|--|-------------------------|
| UN-No. (IATA)                                | : 1689                  |
| Proper Shipping Name (IATA)                  | : Sodium cyanide, solid |
| Packing group (IATA)                         | : I                     |
| Transport hazard class(es) (IATA)            | : 6.1                   |
| Hazard labels (IATA)                         | : 6.1                   |
| Class (IATA)                                 | : 6.1                   |
| Division (IATA)                              | : 6.1                   |
| PCA Excepted quantities (IATA)               | : E5                    |
| PCA Limited quantities (IATA)                | : Forbidden             |
| PCA limited quantity max net quantity (IATA) | : Forbidden             |
| PCA packing instructions (IATA)              | : 666                   |
| PCA max net quantity (IATA)                  | : 5kg                   |
| CAO packing instructions (IATA)              | : 673                   |
| CAO max net quantity (IATA)                  | : 50kg                  |
| ERG code (IATA)                              | : 6L                    |

**Marine pollutant** : Applicable

### Regulations in Japan

|                               |   |
|-------------------------------|---|
| Regulatory information by sea | : Conform to the provisions of the Ship Safety Law.       |
| Regulatory information by air | : Conform to the provisions of the Civil Aeronautics Law. |
| MFAG-No                       | : 157   |

**Special transport precautions** : When transporting, load containers so that they do not tip over, damage, drop or collapse. Make sure there is no leak in containers.

## 15. Regulatory information

### National law

|                                  |  |
|----------------------------------|--|
| Chemical Substances Control Law  | : Priority Assessment Chemical Substances (Law Article 2, Para.5)  |
| Industrial Safety and Health Law | : Group 2 Specified Chemical Substance, Group 2 Substance Under Supervision (Ordinance on Prevention of Hazards Due to Specified Chemical Substances Art.2 Para.1, Item 2,5)<br>Working Environment Evaluation Standards, Administrative Control Levels (Law Art.65-2, Para.1)<br>Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18)<br>Dangerous or Harmful Substances for Notification of Chemical Name etc. on SDS (Law Art.57-2, Enforcement Order Art.18-2)<br>Sodium cyanide<br>Substances on Special medical examination, Current handling workers (Act, Art.66, Para.2, Enforcement Order, Art.22 Item 1)<br>Substances that must be used in impermeable protective equipment based on special regulations (List of substances applicable to No. 0704 Item 1, 5 based on July 4, 2023) |

|   |   |   |
|---|---|---|
| Japanese Poisonous and Deleterious Substances Control Law             | : | Poisonous Substances (Law Art.2, Attached Table 1)<br>Sodium cyanide  |
| Water Pollution Prevention Law  | : | Hazardous Substances (Act, Art.2, Enforcement Order Art.2, Ministerial Ordinance to Provide for Effluent Standards, Art.1)  |
| Fire Service Law  | : | Designation of Materials Requiring Notification (Law Art.9-3, Cabinet Order on Hazardous Materials Art.1-10 Para 5, Attached Table No.1-8, Ordinance No. 2 of 1988, Art.1)                              |
| Air Pollution Control Law   | : | Hazardous Air Pollutants (Central Environment Council Report No. 9)   |
| Law Relating to Prevention of Marine Pollution and Maritime Disasters | : | Marine Pollutants for Non-Bulk Shipment (Ordinance Art.30-2-3, MLIT Notification)   |
| Foreign Exchange and Foreign Trade Control Act                        | : | Export Trade Control Order, Attached Table 1 Para.3<br>Export Trade Control Ordinance appendix 1-16   |
| Ship Safety Act   | : | Toxic and infectious substances/Toxic substances (Dangerous Goods Notification Schedule first second and third Article Dangerous Goods Regulations)   |
| Civil Aeronautics Law   | : | Toxic and infectious substances/Toxic substances (Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)   |
| Port Regulation Law   | : | Toxic and infectious substances/Toxic substances (Article 21, Paragraph 2 of Law, Article 12 rule, notice attached table that defines the type of dangerous goods)                                      |
| Waste Management on Public Cleansing Law                              | : | Specially Controlled Industrial Wastes (Act Art.2, para 5, Enforcement Order Art.2-4)   |
| Waterworks Law  | : | Hazardous Substances (Act Article 4 paragraph 2), Standard for Water Quality (Ministry Order No.101 of 2003)  |
| Sewerage Law  | : | Substances for Water Quality Standard (Act Art.12-2 Para.2, Enforcement Order Art.9-4)  |
| Japanese Pollutant Release and Transfer Register Law (PRTR Law)       | : | Class 1 Designated Chemical Substances (Act Art.2 para.2, Enforcement Order Art.1 Appended Table No.1)<br>Inorganic cyanide compounds (except for complex salts and cyanates) as cyanide( $\geq 50\%$ ) |
| Labor Standards Act   | : | Chemical Substances Causing Occupational Illnesses (Act Art.75, Para.2, Ordinance Attached Table 1-2, Item 4-1, MHLW Notification No.36 of 1978)  |
| Soil Contamination Countermeasures Law                                | : | Designated Hazardous Substances (Act Art.2 Para.3, Enforcement Order Art.1)   |

## 16. Other information

|                   |   |  |
|-------------------|---|--|
| Data sources      | : | Handbook of 17524 Chemical Products, The Chemical Daily Co, Ltd.<br>International Chemical Safety Cards.<br>National Institute of Technology and Evaluation (NITE).<br>2020 Emergency Response Guidebook (ERG 2020).   |
| Other information | : | The SDS is copyrighted material of Hayashi Pure Chemical Ind, Ltd. This Safety Data Sheet is intended to be provided for business operators who handle chemical substance products of the relevant product and is not intended to assure safety in any way. The Safety Data Sheet does not verify all the information on the applicable chemical substance in the present time. With the recognition in that unknown danger constantly exists in the relevant chemical substance, the product shall be used in the principle of self-responsibility of the user with the highest priority to safety from transport and unpacking to disposal. When the relevant chemical substance is used, the user him/herself shall collect safety information and shall investigate laws and regulations at the place, organizations, countries, etc. where the substance is actually used and give the highest priority to them. The Company shall take no responsibility for investigating state and local regulations and the user shall handle this problem on his/her own responsibility. In the event that SDS in Japanese and SDS translated into other languages exist, the document described in Japanese is prior to all other documents whether or not there is any difference in contents, and documents in other languages shall be references. |