
Safety Data Sheet**1. Chemical product and company identification****Product name** : Pyrophosphoric acid**SDS code** : F1-16**Company/undertaking identification** :

HAYASHI PURE CHEMICAL IND.,LTD.

Address : 3-2-12 Uchihiranomachi, Chuo-ku, Osaka, Osaka, Japan

Responsible department : Planning Group, Reagent & Chemical Product Department

Telephone : 06-6910-7305

E-mail : shiyaku_kikaku@hpc-j.co.jp

URL : <https://www.hpc-j.co.jp/>**Emergency number** : 06-6910-7305**2. Hazards identification****GHS classification**

Physical hazards	Desensitized explosives	classification not possible	
	Explosives	classification not possible	
	Flammable gases	No classification	
	Aerosol	classification not possible	
	Oxidizing gases	No classification	
	Gases under pressure	No classification	
	Flammable liquids	classification not possible	
	Flammable solids	No classification	
	Self-reactive substances and mixtures	classification not possible	
	Pyrophoric liquids	classification not possible	
	Pyrophoric solids	No classification	
	Self-heating substances and mixtures	classification not possible	
	Substances and mixtures which in contact with water emit flammable gases	classification not possible	
	Oxidizing liquids	classification not possible	
	Oxidizing solids	No classification	
	Organic peroxides	classification not possible	
	Corrosive to metals	classification not possible	
	Health hazards	Acute toxicity (oral)	Category 4
		Acute toxicity (dermal)	No classification
		Acute toxicity (inhalation:gas)	classification not possible
Acute toxicity (inhalation:vapors)		classification not possible	
Acute toxicity (inhalation:dust/mist)		Category 3	
Skin corrosion/irritation		Category 1	
Serious eye damage/eye irritation		Category 1	
Respiratory sensitization		classification not possible	
Skin sensitization		classification not possible	
Germ cell mutagenicity		classification not possible	
Carcinogenicity	classification not possible		
Reproductive toxicity	classification not possible		
Specific target organ toxicity (single exposure)	Category 1 (respiratory system)		
Specific target organ toxicity (repeated exposure)	classification not possible		
Aspiration hazard	classification not possible		

Environmental hazards	Hazardous to the aquatic environment, short-term (acute)	Category 3
	Hazardous to the aquatic environment, long-term (chronic)	classification not possible
	Hazardous to the ozone layer	classification not possible

Hazard pictograms (GHS JP)



GHS05



GHS06



GHS08

Signal word (GHS JP)	: Danger
Hazard statements (GHS JP)	: Harmful if swallowed (H302) Causes severe skin burns and eye damage (H314) Toxic if inhaled (H331) Causes damage to organs (respiratory system) (H370) Harmful to aquatic life (H402)
Precautionary statements (GHS JP)	
Prevention	: Do not breathe dust/fume/gas/mist/vapors/spray. (P260) Wash hands, forearms and face thoroughly after handling. (P264) Do not eat, drink or smoke when using this product. (P270) Use only outdoors or in a well-ventilated area. (P271) Avoid release to the environment. (P273) Wear protective gloves/protective clothing/eye protection/face protection. (P280)
Response	: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. (P301+P312) IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. (P301+P330+P331) IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. (P303+P361+P353) IF INHALED: Remove person to fresh air and keep comfortable for breathing (P304+P340) IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. (P305+P351+P338) IF exposed or concerned: Call a POISON CENTER or doctor. (P308+P311) Immediately call a POISON CENTER or doctor. (P310) Wash contaminated clothing before reuse. (P363)
Storage	: Store in a well-ventilated place. Keep container tightly closed. (P403+P233) 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	: Diphosphoric acid

Name	Concentration or Concentration range	Formula	Kanpo number		CAS RN
			CSCL no	ISHL no	
Pyrophosphoric acid	≥75.3% (as P ₂ O ₅)	H ₄ P ₂ O ₇	(1)-422	-	2466-09-3

The above concentration or concentration range are not product specification.
All percentages listed in the above concentration or concentration range are mass%, 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 : Do NOT induce vomiting.
Drink plenty of water.
Rinse mouth.
Get immediate medical advice/attention.

5. Fire fighting measures

- Suitable extinguishing media : Water spray, Alcohol-resistant foam, Dry powder, Carbon dioxide, Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.
- Fire hazard : This product is unburnable.
- Explosion hazard : May induce explosion of containers by heating.
- 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 : Clean up any spills as soon as possible, using an absorbent material to collect it.
Collect leaking and spilled liquid in sealable containers as far as possible.
Wash out the spilled area with large amounts of water.
If possible, neutralize with slaked lime, soda ash, etc. before washing out.

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

- 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 : Gas mask for acid gases
- 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, Protective long boots

9. Physical and chemical properties

- Physical state : Liquid
- Appearance : Viscous liquid
- Color : colorless ~ slight yellow
- Odor : No data available
- pH : Strong acid
- Melting point : 18 °C
- Freezing point : No data available
- Boiling point : 280 °C
- Flash point : No data available
- Auto-ignition temperature : No data available
- Decomposition temperature : No data available
- Flammability (solid, gas) : No data available
- Vapor pressure : 0.002 mPa (25°C)
- Relative density : No data available
- Density : 1.92 g/cm³ (25°C)
- Relative gas density : No data available
- Solubility : Easily soluble in water. Soluble in ethanol.
- 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	:	When in contact with water, it is hydrolyzed to phosphoric acid.
Possibility of hazardous reactions	:	The aqueous solution of this substance is strong acid, reacts violently with bases, and shows corrosive. Reacts with metals such as iron, aluminium and zinc to produce hydrogen. The high-concentration aqueous solution reacts weakly with many kinds of metals near room temperature, but at high temperatures it reacts violently with metals and their oxides, decomposes silicon dioxide and silicon carbonate, and slightly corrodes precious metals.
Conditions to avoid	:	Sunlight, moisture, heat. Contact with metals, silicon dioxide, silicon carbonate, alcohols, aldehydes, cyanide compounds, ketones, phenols, esters, sulfides, and organic halogen compounds.
Incompatible materials	:	Metals, Silicon dioxide, Silicon carbonate, Alcohols, Aldehydes, Cyanide compounds, Ketones, Phenols, Esters, Sulfides, Organic halogen compounds
Hazardous decomposition products	:	Phosphorus oxides, Hydrogen

11. Toxicological information

Pyrophosphoric acid	
Acute toxicity (oral)	Category 4
Acute toxicity (dermal)	No classification
Acute toxicity (gas)	classification not possible
Acute toxicity (vapour)	classification not possible
Acute toxicity (inhalation:dust/mist)	Category 3
Skin corrosion/irritation	Category 1
Serious eye damage/irritation	Category 1
Respiratory sensitization	classification not possible
Skin sensitization	classification not possible
Germ cell mutagenicity	classification not possible
Carcinogenicity	classification not possible
Reproductive toxicity	classification not possible
STOT-single exposure	Category 1
STOT-repeated exposure	classification not possible
Aspiration hazard	classification not possible

12. Ecological information

Pyrophosphoric acid	
Hazardous to Aquatic Environment - Acute Hazard	Category 3
Hazardous to Aquatic Environment - Chronic Hazard	classification not possible
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Hazardous to the ozone layer	classification not possible

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. 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)	: 2922
Proper Shipping Name (IMDG)	: CORROSIVE LIQUID, TOXIC, N.O.S.
Packing group (IMDG)	: III
Transport hazard class(es) (IMDG)	: 8 (6.1)
Hazard labels (IMDG)	: 8,6.1
Class (IMDG)	: 8
Subsidiary risks (IMDG)	: 6.1
Special provision (IMDG)	: 223, 274
Limited quantities (IMDG)	: 5 L
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC03
Tank instructions (IMDG)	: T7
Tank special provisions (IMDG)	: TP1, TP28
Stowage category (IMDG)	: B
Properties and observations (IMDG)	: Causes burns to skin, eyes and mucous membranes. Toxic if swallowed, by skin contact or by inhalation.
MFAG-No	: 154

Air transport(IATA)

UN-No. (IATA)	: 2922
Proper Shipping Name (IATA)	: Corrosive liquid, toxic, n.o.s.
Packing group (IATA)	: III
Transport hazard class(es) (IATA)	: 8 (6.1)
Hazard labels (IATA)	: 8, 6.1
Class (IATA)	: 8
Subsidiary hazards (IATA)	: 6.1
PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y841
PCA limited quantity max net quantity (IATA)	: 1L
PCA packing instructions (IATA)	: 852
PCA max net quantity (IATA)	: 5L
CAO packing instructions (IATA)	: 856
CAO max net quantity (IATA)	: 60L
Special provision (IATA)	: A3, A803
ERG code (IATA)	: 8P

Marine pollutant : Not 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	: 154

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

Industrial Safety and Health Law	: Not applicable
Japanese Poisonous and Deleterious Substances Control Law	: Not applicable
Fire Service Law	: Not applicable
Foreign Exchange and Foreign Trade Control Act	: Export Trade Control Ordinance appendix 1-16
Ship Safety Act	: Corrosive substances (Dangerous Goods Notification Schedule first second and third Article Dangerous Goods Regulations)
Civil Aeronautics Law	: Corrosive substances (Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)
Port Regulation Law	: Corrosive substances (Article 21, Paragraph 2 of Law, Article 12 rule, notice attached table that defines the type of dangerous goods)
Japanese Pollutant Release and Transfer Register Law (PRTR Law)	: Not applicable

16. Other information

- Data sources : Handbook of 17221 Chemical Products, The Chemical Daily Co, Ltd.
International Chemical Safety Cards.
National Institute of Technology and Evaluation (NITE).
2016 Emergency Response Guidebook (ERG 2016).
- 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.