Safety Data Sheet

1. Chemical product and company identification

Product name : Potassium sulfide

SDS code : F1-12

Company/undertaking identification :

HAYASHI PURE CHEMICAL IND.,LTD.
Address : 3-2-12 Uchihiranomachi, Chuo-ku, Osaka, Osaka, Japan
Telephone : 06-6910-7305
E-mail : shiyaku_kikaku@hpc-j.co.jp
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	classification not possible
	Self-reactive substances and mixtures	No classification
	Pyrophoric liquids	No classification
	Pyrophoric solids	No classification
	Self-heating substances and mixtures	Category 1
	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 1
	Acute toxicity (dermal)	classification not possible
	Acute toxicity (inhalation:gas)	No classification
	Acute toxicity (inhalation:vapors)	classification not possible
	Acute toxicity (inhalation:dust/mist)	classification not possible
	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 2 (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)	classification not possible
	Hazardous to the aquatic environment, long-term (chronic)	classification not possible
	Hazardous to the ozone layer	classification not possible

Hazard pictograms (GHS JP)

GHS02 GHS05 GHS06 GHS08

Signal word (GHS JP) : Danger

Hazard statements (GHS JP) :
Self-heating; may catch fire (H251)
Fatal if swallowed (H300)
Causes severe skin burns and eye damage (H314)
May cause damage to organs (respiratory system) (H371)

Precautionary statements (GHS JP)

Prevention :
Keep cool. Protect from sunlight. (P235+P410)
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)
Wear protective gloves/protective clothing/eye protection/face protection. (P280)

Response :
IF SWALLOWED: Immediately call a POISON CENTER or doctor. (P301+P310)
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 locked up. (P405)
Maintain air gap between stacks or pallets. (P407)
Store bulk masses greater than the appropriate amount at temperatures not exceeding the specified temperature. (P413)
Store separately. (P420)

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 : Mixture

Name	Concentration or Concentration range	Formula	Kanpo number		CAS RN
			CSCL no	ISHL no	
Potassium sulfide	≧50%	K2S	(1)-462	Existing Chemical Substance	1312-73-8
Potassium thiosulfate	≦30%	K2S2O3	(1)-1101	Existing Chemical Substance	10294-66-3

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	:	Water spray, Dry powder, Sand.
Unsuitable extinguishing media	:	Do not use a heavy water stream, Carbon dioxide (CO2)
Fire hazard	:	In contact with water releases flammable gases which may ignite spontaneously.
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. 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. Take precautionary measures against static discharge. Use explosion-proof equipment.
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	:	Light shielding 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	:	Dustproof mask
Hand protection	:	Protective gloves
Eye protection	:	Protective glasses (general glasses, glasses with side-shields, goggles)
Skin and body protection	:	Protective clothing, Protective boots, Protective apron

9. Physical and chemical properties

Physical state	:	Solid
Appearance	:	Crystal (flake)
Color	:	reddish brown
Odor	:	Rotten eggs
pH	:	≥ 12 (as aqueous solution)
Melting point	:	70 °C
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	No data available
Relative density	:	No data available
Density	:	1.80 g/cm³（20°C）
Relative gas density	:	No data available
Solubility	:	Soluble in water. Soluble in ethanol. Soluble in glycerol. Soluble in ammonia solution.
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	:	It gradually reacts with carbon dioxide and oxygen in the air to produce hydrogen sulfide and change to thiosulfuric acid, potassium sulfite, potassium carbonate, and the like. Shows pyrophoric, explosive and deliquescent.
Possibility of hazardous reactions	:	When heated strongly, it produces toxic and flammable hydrogen sulfide. When in contact with acids, it decomposes to produce very toxic and flammable hydrogen sulfide. The aqueous solution of this substance is a strong base, is corrosive, and reacts violently with acids.
Conditions to avoid	:	Water, moisture, heat. Contact with acids and oxidizing agents.
Incompatible materials	:	Acids, Oxidizing agents
Hazardous decomposition products	:	Hydrogen sulfide, Potassium sulfite, Potassium carbonate, Sulfur oxides

11. Toxicological information

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

As a product	
Acute toxicity (oral)	Category 1
Acute toxicity (dermal)	classification not possible
Acute toxicity (inhalation)	vapors:classification not possible Gases:No classification dust, mist:classification not possible
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 2
STOT-repeated exposure	classification not possible
Aspiration hazard	classification not possible

Potassium sulfide	
Acute toxicity (oral)	Category 1
Acute toxicity (dermal)	classification not possible
Acute toxicity (gas)	No classification
Acute toxicity (vapour)	classification not possible
Acute toxicity (inhalation:dust/mist)	classification not possible
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 2
STOT-repeated exposure	classification not possible
Aspiration hazard	classification not possible

Potassium thiosulfate	
Acute toxicity (oral)	No data available
Acute toxicity (dermal)	No data available
Acute toxicity (gas)	No data available
Acute toxicity (vapour)	No data available
Acute toxicity (inhalation:dust/mist)	No data available
Skin corrosion/irritation	No data available
Serious eye damage/irritation	No data available
Respiratory sensitization	No data available
Skin sensitization	No data available

Potassium thiosulfate	
Germ cell mutagenicity	No data available
Carcinogenicity	No data available
Reproductive toxicity	No data available
STOT-single exposure	No data available
STOT-repeated exposure	No data available
Aspiration hazard	No data available

12. Ecological information

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

As a product	
Hazardous to the aquatic environment, short-term (acute)	classification not possible
Hazardous to the aquatic environment, long-term (chronic)	classification not possible
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Ozone	classification not possible

Potassium sulfide	
Hazardous to Aquatic Environment - Acute Hazard	classification not possible
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	No data available

Potassium thiosulfate	
Hazardous to Aquatic Environment - Acute Hazard	No data available
Hazardous to Aquatic Environment - Chronic Hazard	No data available
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.

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) : 1382
Proper Shipping Name (IMDG) : POTASSIUM SULPHIDE
Packing group (IMDG) : II
Transport hazard class(es) (IMDG) : 4.2
Hazard labels (IMDG) : 4.2
Class (IMDG) : 4.2
Division (IMDG) : 4.2
Limited quantities (IMDG) : 0
Excepted quantities (IMDG) : E2

Packing instructions (IMDG)	:	P410
Packing provisions (IMDG)	:	PP31, PP40
IBC packing instructions (IMDG)	:	IBC06
IBC special provisions (IMDG)	:	B21
Tank instructions (IMDG)	:	T3
Tank special provisions (IMDG)	:	TP33
Stowage category (IMDG)	:	A
Properties and observations (IMDG)	:	Black solid, absorbs moisture to become crystalline. Liable to ignite spontaneously. In contact with acids, evolves hydrogen sulphide, a toxic and flammable gas. Reacts violently with acids.
MFAG-No	:	135

Air transport(IATA)

UN-No. (IATA)	:	1382
Proper Shipping Name (IATA)	:	Potassium sulphide
Packing group (IATA)	:	II
Transport hazard class(es) (IATA)	:	4.2
Hazard labels (IATA)	:	4.2
Class (IATA)	:	4.2
Division (IATA)	:	4.2
PCA Excepted quantities (IATA)	:	E2
PCA Limited quantities (IATA)	:	Forbidden
PCA limited quantity max net quantity (IATA)	:	Forbidden
PCA packing instructions (IATA)	:	467
PCA max net quantity (IATA)	:	15kg
CAO packing instructions (IATA)	:	470
CAO max net quantity (IATA)	:	50kg
ERG code (IATA)	:	4L
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	:	135
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	:	【New added・Ordinance number changed substances on April 2024】 Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18 Item 1, Item 2, Attached Table No.9) Notifiable Substances (Law Art.57-2, Enforcement Order Art.18-2 Item 1, Item 2, Attached Table No.9) potassium sulfide (Ordinance number : 607)
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	:	Combustible materials/Substances liable to spontaneous combustion(Dangerous Goods Notification Schedule first second and third Article Dangerous Goods Regulations)
Civil Aeronautics Law	:	Combustible materials/Substances liable to spontaneous combustion(Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)
Port Regulation Law	:	Hazardous materials/Flammable substance (Pyrophoric substance) (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 17322 Chemical Products, The Chemical Daily Co, Ltd. International Chemical Safety Cards. National Institute of Technology and Evaluation (NITE). 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.