
Safety Data Sheet**1. Chemical product and company identification****Product name** : 5W/V% Potassium peroxodisulfate solution**SDS code** : U5-13**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	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	
	Desensitized explosives	classification not possible	
	Health hazards	Acute toxicity (oral)	No classification
		Acute toxicity (dermal)	No classification
Acute toxicity (inhalation:gas)		No classification	
Acute toxicity (inhalation:vapors)		classification not possible	
Acute toxicity (inhalation:dust/mist)		No classification	
Skin corrosion/irritation		No classification	
Serious eye damage/eye irritation		classification not possible	
Respiratory sensitization		Category 1	
Skin sensitization		Category 1	
Germ cell mutagenicity		classification not possible	
Carcinogenicity		classification not possible	
Reproductive toxicity	classification not possible		
Specific target organ toxicity (single exposure)	No classification		

Environmental hazards	Specific target organ toxicity (repeated exposure)	classification not possible
	Aspiration hazard	classification not possible
	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)



GHS08

Signal word (GHS JP)	: Danger
Hazard statements (GHS JP)	: May cause an allergic skin reaction (H317) May cause an allergy or asthma symptoms or breathing difficulties if inhaled (H334)
Precautionary statements (GHS JP)	
Prevention	: Avoid breathing dust/fume/gas/mist/vapors/spray. (P261) Contaminated work clothing should not be allowed out of the workplace. (P272) Wear protective gloves/protective clothing/eye protection/face protection. (P280) [In case of inadequate ventilation] wear respiratory protection. (P284)
Response	: IF ON SKIN: Wash with plenty of water. (P302+P352) IF INHALED: Remove person to fresh air and keep comfortable for breathing (P304+P340) If skin irritation or rash occurs: Get medical advice/attention. (P333+P313) If experiencing respiratory symptoms: Call a POISON CENTER or doctor. (P342+P311) Take off contaminated clothing and wash it before reuse. (P362+P364)
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
			CSSL no	ISHL no	
Potassium peroxodisulfate	About 4.9%	K ₂ S ₂ O ₈	(1)-456	Existing Chemical Substance	7727-21-1
Water	About 95.1%	H ₂ O	-	-	7732-18-5

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 : Use proper extinguishing media depending on peripheral fire.
Unsuitable extinguishing media : Do not use a heavy water stream.
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.
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.

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

Exposure limit values	
Potassium peroxodisulfate	
Exposure limits (ACGIH)	TWA 0.1 mg/m ³ ,STEL - (as persulfate)

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 : Protective 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 : Liquid
 Appearance : Liquid
 Color : colorless transparent
 Odor : Odorless
 pH : 3.9 (25°C)
 Melting point : No data available
 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 : 1.03 g/cm³ (20°C)
 Relative gas density : No data available
 Solubility : No data available
 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 gradually at room temperature and rapidly at high temperature.
 Possibility of hazardous reactions : May react with combustible substances, strong acids, strong reducing agents, strong bases and metal powder.
 Conditions to avoid : Sunlight, heat. Contact with combustible substances, strong acids, strong reducing agents, strong bases and metal powder.
 Incompatible materials : Combustible substances, Strong acids, Strong reducing agents, Strong bases, Metal powder
 Hazardous decomposition products : Sulfur oxides, Potassium oxides

11. Toxicological information

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

As a product	
Acute toxicity (oral)	No classification
Acute toxicity (dermal)	No classification
Acute toxicity (inhalation)	vapors:classification not possible

As a product	
	Gases:No classification dust, mist:No classification
Skin corrosion/irritation	No classification
Serious eye damage/irritation	classification not possible
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	classification not possible
Carcinogenicity	classification not possible
Reproductive toxicity	classification not possible
STOT-single exposure	No classification
STOT-repeated exposure	classification not possible
Aspiration hazard	classification not possible
Potassium peroxodisulfate	
Acute toxicity (oral)	Category 4
Acute toxicity (dermal)	No classification
Acute toxicity (gas)	No classification
Acute toxicity (vapour)	classification not possible
Acute toxicity (inhalation:dust/mist)	No classification
Skin corrosion/irritation	Category 2
Serious eye damage/irritation	classification not possible
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	classification not possible
Carcinogenicity	classification not possible
Reproductive toxicity	classification not possible
STOT-single exposure	Category 2 Category 3 (Respiratory tract irritation.)
STOT-repeated exposure	classification not possible
Aspiration hazard	classification not possible
Water	
Acute toxicity (oral)	No classification
Acute toxicity (dermal)	No classification
Acute toxicity (gas)	No classification
Acute toxicity (vapour)	No classification
Acute toxicity (inhalation:dust/mist)	No classification
Skin corrosion/irritation	No classification
Serious eye damage/irritation	No classification
Respiratory sensitization	No classification
Skin sensitization	No classification
Germ cell mutagenicity	No classification
Carcinogenicity	No classification
Reproductive toxicity	No classification
STOT-single exposure	No classification
STOT-repeated exposure	No classification
Aspiration hazard	No classification

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 peroxodisulfate	
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	classification not possible
Water	
Hazardous to Aquatic Environment - Acute Hazard	No classification
Hazardous to Aquatic Environment - Chronic Hazard	No classification
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)	:	Not applicable
Proper Shipping Name (IMDG)	:	Not applicable
Packing group (IMDG)	:	Not applicable
Transport hazard class(es) (IMDG)	:	Not applicable

Air transport(IATA)

UN-No. (IATA)	:	Not applicable
Proper Shipping Name (IATA)	:	Not applicable
Packing group (IATA)	:	Not applicable
Transport hazard class(es) (IATA)	:	Not applicable

Marine pollutant : Not applicable

Regulations in Japan

Regulatory information by sea	:	Not applicable
Regulatory information by air	:	Not applicable

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	:	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 persulfate (Ordinance number : 528)
Japanese Poisonous and Deleterious Substances Control Law	:	Not applicable
Fire Service Law	:	Not applicable
Air Pollution Control Law	:	Hazardous Air Pollutants (Central Environment Council Report No. 9)

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- Foreign Exchange and Foreign Trade Control Act : Export Trade Control Ordinance appendix 1-16
- 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)
Water-soluble salts of peroxodisulfuric acid (4.9%)
- 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)

16. Other information

- Data sources : Handbook of 17423 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.