Safety Data Sheet

1. Chemical product and company identification

Product name : Potassium dichromate

SDS code : F1-08

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	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	classification not possible
	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 3
	Acute toxicity (inhalation:gas)	No classification
	Acute toxicity (inhalation:vapors)	No classification
	Acute toxicity (inhalation:dust/mist)	Category 1
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Respiratory sensitization	Category 1
	Skin sensitization	Category 1
	Germ cell mutagenicity	Category 1B
	Carcinogenicity	Category 1A
	Reproductive toxicity	Category 1B
	Specific target organ toxicity (single exposure)	Category 1 (central nervous system, respiratory system, cardiovascular system, blood system, liver, kidneys)

	Specific target organ toxicity (repeated exposure)	Category 1 (respiratory system)
	Aspiration hazard	classification not possible
Environmental hazards	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)

GHS05 GHS06 GHS08 GHS09

Signal word (GHS JP) : Danger

Hazard statements (GHS JP) :
Fatal if swallowed or if inhaled (H300+H330)
Toxic in contact with skin (H311)
Causes severe skin burns and eye damage (H314)
May cause an allergic skin reaction (H317)
May cause an allergy or asthma symptoms or breathing difficulties if inhaled (H334)
May cause genetic defects (H340)
May cause cancer (H350)
May damage fertility or the unborn child (H360)
Causes damage to organs (central nervous system, respiratory system, cardiovascular system, blood system, liver, kidneys) (H370)
Causes damage to organs (respiratory system) through prolonged or repeated exposure (H372)
Very toxic to aquatic life with long lasting effects (H410)

Precautionary statements (GHS JP)

Prevention :
Obtain special instructions before use. (P201)
Do not handle until all safety precautions have been read and understood. (P202)
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)
Contaminated work clothing should not be allowed out of the workplace. (P272)
Avoid release to the environment. (P273)
Wear protective gloves/protective clothing/eye protection/face protection. (P280)
Wear respiratory protection. (P284)

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)
Get medical advice/attention if you feel unwell. (P314)
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 immediately all contaminated clothing and wash it before reuse. (P361+P364)
Collect spillage. (P391)

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 : Potassium bichromate

Name	Concentration or Concentration range	Formula	Kanpo number		CAS RN
			CSCL no	ISHL no	
Potassium dichromate	≧99%, ≦100%	K2Cr2O7	(1)-278	Existing Chemical Substance	7778-50-9

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 : Water spray

Unsuitable extinguishing media : Foam, Dry powder, Do not use a heavy water stream.

Fire hazard : This product is unburnable.
May intensify fire; oxidizer.

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 : 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

Exposure limit values	
Potassium dichromate	
Japan administration level	0.05mg/m3(as Cr)
Exposure limits (ACGIH)	TWA 0.0002 mg/m3(I),STEL 0.0005 mg/m3(I) (Hexavalent chromium compounds, as Cr(VI));TWA 0.0002 mg/m3(I),STEL 0.0005 mg/m3(I) (Skin) (Hexavalent chromium compounds, as Cr(VI) Water-soluble compounds)

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 : Crystals ～ Crystalline powder

Color : yellow red ～ reddish yellow

Odor : Odorless

pH : No data available

Melting point : 398 °C

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Auto-ignition temperature : No data available

Decomposition temperature	:	≤ 500 °C
Flammability (solid, gas)	:	No data available
Vapor pressure	:	No data available
Relative density	:	No data available
Density	:	2.69 g/cm³
Relative gas density	:	No data available
Solubility	:	Soluble in water. Insoluble in alcohol.
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.
Possibility of hazardous reactions	:	When heated, it decomposes to produce chromium oxides and potassium oxides. When in contact with combustible substances, poses a risk of fire and explosion. Reacts violently with hydrazine and hydroxylamine to pose a risk of fire and explosion.
Conditions to avoid	:	Sunlight, heat. Contact with combustible substances, reducing substances and acids.
Incompatible materials	:	Combustible substances, Reducing substances, Acids
Hazardous decomposition products	:	Chromium oxides, Potassium oxides

11. Toxicological information

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

Potassium dichromate	
Acute toxicity (oral)	Category 2
Acute toxicity (dermal)	Category 3
Acute toxicity (gas)	No classification
Acute toxicity (vapour)	No classification
Acute toxicity (inhalation:dust/mist)	Category 1
Skin corrosion/irritation	Category 1
Serious eye damage/irritation	Category 1
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1A
Reproductive toxicity	Category 1B
STOT-single exposure	Category 1
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.

Potassium dichromate	
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	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)	:	3087
Proper Shipping Name (IMDG)	:	OXIDIZING SOLID, TOXIC, N.O.S.
Packing group (IMDG)	:	III
Transport hazard class(es) (IMDG)	:	5.1 (6.1)
Hazard labels (IMDG)	:	5.1,6.1
Class (IMDG)	:	5.1
Subsidiary hazard (IMDG)	:	6.1
Division (IMDG)	:	5.1
Special provision (IMDG)	:	223, 274, 900
Packing instructions (IMDG)	:	P002
IBC packing instructions (IMDG)	:	IBC08
IBC special provisions (IMDG)	:	B3
Tank instructions (IMDG)	:	T1
Tank special provisions (IMDG)	:	TP33
Stowage category (IMDG)	:	B
Properties and observations (IMDG)	:	Toxic if swallowed, by skin contact or by dust inhalation. Should be handled with care to minimize exposure, particularly to dust.
MFAG-No	:	141

Air transport(IATA)

UN-No. (IATA)	:	3087
Proper Shipping Name (IATA)	:	Oxidizing solid, toxic, n.o.s.
Packing group (IATA)	:	III
Transport hazard class(es) (IATA)	:	5.1 (6.1)
Hazard labels (IATA)	:	5.1, 6.1
Class (IATA)	:	5.1
Subsidiary hazards (IATA)	:	6.1
Division (IATA)	:	5.1
PCA Excepted quantities (IATA)	:	E1
PCA Limited quantities (IATA)	:	Y546
PCA limited quantity max net quantity (IATA)	:	10kg
PCA packing instructions (IATA)	:	559
PCA max net quantity (IATA)	:	25kg
CAO packing instructions (IATA)	:	563
CAO max net quantity (IATA)	:	100kg
Special provision (IATA)	:	A3
ERG code (IATA)	:	5P
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	:	141
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	:	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) Working Environment Evaluation Standards, Administrative Control Levels (Law Art.65-2, Para.1) 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) Chromium and its compounds (Ordinance number : 142) Specified Chemical Substances, Special Control Substances (Ordinance on Prevention of Hazards Due to Specified Chemical Substances Art.38-3) Substances on Special medical examination, Current handling workers (Act, Art.66, Para.2, Enforcement Order, Art.22 Item 1) Substances on Special medical examination, Past handling workers (Act, Art.66, Para.2, Enforcement Order, Art.22 Item 2)
Japanese Poisonous and Deleterious Substances Control Law	:	Deleterious Substances (Designated Order Art.2) Dichromates and preparations containing it
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	:	Group 1 - Oxidizing solids - Dichromates (Law Art.2 Para.7, Attached Table 1, Group 1)
Air Pollution Control Law	:	Hazardous Air Pollutants, Priority Substances (Central Environment Council Report No. 9)
Foreign Exchange and Foreign Trade Control Act	:	Export Trade Control Ordinance appendix 1-16
Ship Safety Act	:	Oxidizing substances and organic peroxides/Oxidizing substances (Dangerous Goods Notification Schedule first second and third Article Dangerous Goods Regulations)
Civil Aeronautics Law	:	Oxidizing substances and organic peroxides/Oxidizing substances (Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)
Port Regulation Law	:	Oxidizing substances and organic peroxides/Oxidizing substances (Article 21, Paragraph 2 of Law, Article 12 rule, notice attached table that defines the type of dangerous goods)
Road Act	:	Restriction for Vehicle Traffic (Enforcement Order Art.19-13, Publication of Japan Highway Pablic Corp.)
Waste Management on Public Cleansing Law	:	Specially Controlled Industrial Wastes (Act Art.2, para 5, Enfothment 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, Specified Class 1 Designated Chemical Substances (Act Art.2 para. 2, Enforcement Oder Art.1 Appended Table No.1, Enforcement Oder Art.4) Chromium(VI) compounds as chromium(35%) 【After amendment of April 2023】 Class 1 Designated Chemical Substances, Specified Class 1 Designated Chemical Substances (Act, Art.2, Para.2, Enforcement Order, Art.1 Appended Table 1, Enforcement Order, Art.4) Chromium(VI) compounds as chromium(35%)
Labor Standards Act	:	Chemical Substances Causing Occupational Illnesses (Act Art.75, Para.2, Ordinance Attached Table 1-2, Item 4-1, MHLW Nortification No.36 of 1978) Carcinogens (Act Art.75, Para.2, Ordinance Attached Table 1-2, Item 7)
Soil Contamination Countermeasures Law	:	Designated Hazardous Substances (Act Art.2 Para.3, Enforcement Order Art.1)

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.