

## Safety Data Sheet

### 1. Chemical product and company identification

**Product name** : 2,4,6-Trinitrophenol (added water)

**SDS code** : D1-01

**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	classification not possible	
	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	classification not possible	
	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 3
		Acute toxicity (dermal)	classification not possible
		Acute toxicity (inhalation:gas)	No classification
Acute toxicity (inhalation:vapors)		No classification	
Acute toxicity (inhalation:dust/mist)		classification not possible	
Skin corrosion/irritation		classification not possible	
Serious eye damage/eye irritation		Category 2B	
Respiratory sensitization		classification not possible	
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)	Category 1 (central nervous system, blood system, liver, kidneys)		

Environmental hazards	Specific target organ toxicity (single exposure)	Category 3 (Respiratory tract irritation.)
	Specific target organ toxicity (repeated exposure)	Category 1 (blood system)
	Specific target organ toxicity (repeated exposure)	Category 2 (liver, testis)
	Aspiration hazard	classification not possible
	Hazardous to the aquatic environment, short-term (acute)	Category 3
	Hazardous to the aquatic environment, long-term (chronic)	No classification
	Hazardous to the ozone layer	classification not possible

## Hazard pictograms (GHS JP)



GHS06



GHS08

## Signal word (GHS JP)

: Danger

## Hazard statements (GHS JP)

: Toxic if swallowed (H301)  
 May cause an allergic skin reaction (H317)  
 Causes eye irritation (H320)  
 May cause respiratory irritation (H335)  
 Causes damage to organs (central nervous system, blood system, liver, kidneys) (H370)  
 Causes damage to organs (blood system) through prolonged or repeated exposure (H372)  
 May cause damage to organs (liver, testis) through prolonged or repeated exposure (H373)  
 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)  
 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)

## Response

: IF SWALLOWED: Immediately call a POISON CENTER or doctor. (P301+P310)  
 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 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)  
 Get medical advice/attention if you feel unwell. (P314)  
 Rinse mouth. (P330)  
 If skin irritation or rash occurs: Get medical advice/attention. (P333+P313)  
 If eye irritation persists: Get medical advice/attention. (P337+P313)  
 Take off contaminated clothing and wash it before reuse. (P362+P364)

## 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 : Mixture  
Synonyms : Picric acid

Name	Concentration or Concentration range	Formula	Kanpo number		CAS RN
			CSCL no	ISHL no	
2,4,6-Trinitrophenol	≥98% (after drying), About 15-25% water content	C <sub>6</sub> H <sub>3</sub> N <sub>3</sub> O <sub>7</sub>	(3)-823	Existing Chemical Substance	88-89-1

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, Carbon dioxide, Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

Explosion hazard : Explosion risk in case of fire.  
If it flows into a sewer, may induce fire and explosion.

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.  
Fight fire remotely due to the risk of explosion.  
DO NOT fight fire when fire reaches explosives.

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 : Light shielding airtight container.
- Technical measures : Comply with applicable regulations.
- Storage temperature : Cool and dark place

## 8. Exposure controls / Personal protection equipment

Exposure limit values	
2,4,6-Trinitrophenol	
Exposure limits (ACGIH)	TWA 0.1 mg/m <sup>3</sup> , STEL -

- 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 : Wet crystal
- Color : light yellow ~ yellow
- Odor : Odorless
- pH : No data available
- Melting point : 121 – 123 °C
- Freezing point : No data available
- Boiling point : 267 °C
- Flash point : 150 °C (Cleveland open cup)
- Auto-ignition temperature : 300 °C
- Decomposition temperature : No data available
- Flammability (solid, gas) : No data available
- Vapor pressure : No data available
- Relative density : No data available
- Density : 1.8 g/cm<sup>3</sup>
- Relative gas density : 7.9 (air=1)
- Solubility : Slightly soluble in water. Slightly soluble in ethanol.
- Partition coefficient n-octanol/water (Log Pow) : 2.03
- 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 : May decompose explosively on impact, friction, or vibration. May explode when heated. When burned, produces toxic nitrogen oxides.

Possibility of hazardous reactions : Reacts with metals, especially copper, lead, mercury and zinc, producing impact sensitive compounds. Ignite when this product is mixed with aluminium and water. Mixture with iron oxide explode with even the slightest impact. Reacts violently with oxidizing substances and reducing substances to pose a risk of fire and explosion.

Conditions to avoid : Sunlight, impact, friction, heat. Ignition sources such as spark, flame and static electricity. Contact with oxidizing agents, reducing agents and metals.

Incompatible materials : Oxidizing agents, Reducing agents, Metals

Hazardous decomposition products : Nitrogen 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 3
Acute toxicity (dermal)	classification not possible
Acute toxicity (inhalation)	vapors:No classification Gases:No classification dust, mist:classification not possible
Skin corrosion/irritation	classification not possible
Serious eye damage/irritation	Category 2B
Respiratory sensitization	classification not possible
Skin sensitization	Category 1
Germ cell mutagenicity	classification not possible
Carcinogenicity	classification not possible
Reproductive toxicity	classification not possible
STOT-single exposure	Category 1 Category 3 (Respiratory tract irritation.)
STOT-repeated exposure	Category 1 Category 2
Aspiration hazard	classification not possible
2,4,6-Trinitrophenol	
Acute toxicity (oral)	Category 3
Acute toxicity (dermal)	classification not possible
Acute toxicity (gas)	No classification
Acute toxicity (vapour)	No classification
Acute toxicity (inhalation:dust/mist)	classification not possible
Skin corrosion/irritation	classification not possible
Serious eye damage/irritation	Category 2B
Respiratory sensitization	classification not possible
Skin sensitization	Category 1
Germ cell mutagenicity	classification not possible
Carcinogenicity	classification not possible
Reproductive toxicity	classification not possible
STOT-single exposure	Category 1 Category 3 (Respiratory tract irritation.)
STOT-repeated exposure	Category 1 Category 2
Aspiration hazard	classification not possible

## 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)	Category 3
Hazardous to the aquatic environment, long-term (chronic)	No classification
Persistence and degradability	No data available

As a product	
Bioaccumulative potential	No data available
Mobility in soil	No data available
Ozone	classification not possible
2,4,6-Trinitrophenol	
Hazardous to Aquatic Environment - Acute Hazard	Category 3
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) : 3364
- Proper Shipping Name (IMDG) : TRINITROPHENOL (PICRIC ACID), WETTED
- Packing group (IMDG) : I
- Transport hazard class(es) (IMDG) : 4.1
- Hazard labels (IMDG) : 4.1
- Class (IMDG) : 4.1
- Division (IMDG) : 4.1
- Special provision (IMDG) : 28
- Packing instructions (IMDG) : P406
- Packing provisions (IMDG) : PP24, PP31
- Stowage category (IMDG) : E
- Properties and observations (IMDG) : Desensitized explosive. Substance in pure form consists of yellow crystals. Soluble in water. Explosive and sensitive to friction in the dry state. May form extremely sensitive compounds with heavy metals or their salts. Harmful if swallowed or by skin contact.

MFAG-No : 113

##### Air transport(IATA)

- UN-No. (IATA) : 3364
- Proper Shipping Name (IATA) : Trinitrophenol, wetted
- Packing group (IATA) : I
- Transport hazard class(es) (IATA) : 4.1
- Hazard labels (IATA) : 4.1
- Class (IATA) : 4.1
- Division (IATA) : 4.1
- PCA Excepted quantities (IATA) : E0
- PCA Limited quantities (IATA) : Forbidden
- PCA limited quantity max net quantity (IATA) : Forbidden
- PCA packing instructions (IATA) : 451
- CAO packing instructions (IATA) : 451
- CAO max net quantity (IATA) : 0.5kg
- Special provision (IATA) : A40
- ERG code (IATA) : 3E

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 : 113

**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 : Mutagenic Existing Chemicals (Act, Art.57-5, Official Notice by Director of Labor Standards Bureau)  
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)  
Picric acid (Ordinance number : 450)  
Dangerous Substances - Explosive Substance (Enforcement Order Attached Table 1 Item 1)

Japanese Poisonous and Deleterious Substances Control Law : Deleterious Substances (Law Art.2, Attached Table 2)  
Picric acid  
Ignitable or Explosive Deleterious Substances (Law Art.3-4, Enforcement Order Art.32-3)  
Picric acid

Water Pollution Prevention Law : Designated Chemical Substances (Law Article 2, Paragraph 4, Enforcement Order Article 3-3)

Fire Service Law : Group 5 - Self-reactive materials - Nitro compounds (Law Art.2 Para 7, Attached Table 1, Group 5)

Foreign Exchange and Foreign Trade Control Act : Export Trade Control Order, Attached Table 1 Para.1  
Export Trade Control Ordinance appendix 1-16

Ship Safety Act : Combustible materials/Combustible material(Dangerous Goods Notification Schedule first second and third Article Dangerous Goods Regulations)

Civil Aeronautics Law : Combustible materials/Combustible material(Hazardous materials notice Appended Table 1 Article 194 of the Enforcement Regulations)

Port Regulation Law : Hazardous materials/Flammable substance (Combustible material) (Article 21, Paragraph 2 of Law, Article 12 rule, notice appendix that defines the type of dangerous goods)

Road Act : Restriction for Vehicle Traffic (Enforcement Order Art.19-13, Publication of Japan Highway Public Corp.)

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) : Not applicable

## 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.