



## Safety Data Sheet

### 1. Identification of the substance/mixture and of the company/undertaking

**Product identifier:**

Product name: 2,4,6,-Trinitrophenol

SDS No. : 80802E-3

**Details of the supplier of the safety data sheet**

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Safety Management Dept. of Chemicals

Telephone number: +81-6-6946-8061

FAX: +81-6-6946-1607

e-mail address: kagakuhinanzenkanri@kishida.co.jp

### 2. Hazards identification

**GHS classification and label elements of the product****Classification of the substance or mixture****PHYSICAL AND CHEMICAL HAZARDS**

Explosives: Division 1.1

**HEALTH HAZARDS**

Acute toxicity (Oral): Category 3

Serious eye damage/eye irritation: Category 2B

Skin sensitization: Category 1

Specific target organ toxicity – single exposure: Category 1 (CNS; blood system; liver; kidney)

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; testicle)

**ENVIRONMENT HAZARDS**

Hazardous to the aquatic environment (Acute): Category 3

(Note) GHS classification without description: Not classified/Classification not possible

**Label elements**

Signal word: Danger

**HAZARD STATEMENT**

Explosive; mass explosion hazard

Toxic if swallowed

Causes eye irritation

May cause an allergic skin reaction

Causes damage to organs after single exposure (CNS; blood system; liver; kidney)

May cause respiratory irritation

Causes damage to organs through prolonged or repeated exposure (blood system)

May cause damage to organs through prolonged or repeated exposure (liver; testicle)

Harmful to aquatic life

**PRECAUTIONARY STATEMENT****Prevention**

Avoid release to the environment.



Keep away from heat/sparks/open flames/hot surfaces. – No smoking.  
Keep wetted with appropriate liquid.  
Keep only in original container.  
Ground/bond container and receiving equipment.  
Do not subject to rough handling such as grinding/shock/friction.  
Do not breathe dust/fume/gas/mist/vapors/spray.  
Use only outdoors or in a well-ventilated area.  
Wash contaminated parts thoroughly after handling.  
Contaminated work clothing should not be allowed out of the workplace.  
Wear protective gloves/protective clothing/eye protection/face protection.  
Do not eat, drink or smoke when using this product.

**Response**

In case of fire: Explosion risk. Evacuate area. DO NOT fight fire when fire reaches explosives.  
Get medical advice/attention if you feel unwell.  
Call a POISON CENTER or doctor/physician if you feel unwell.  
IF exposed or concerned: Call a POISON CENTER or doctor/physician.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
IF ON SKIN: Wash with plenty of soap and water.  
If skin irritation or rash occurs: Get medical advice/attention.  
Take off contaminated clothing and wash it before reuse.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical advice/attention.  
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
IF SWALLOWED: Rinse mouth.

**Storage**

Store in accordance with local/national/regulation.  
Store in a well-ventilated place. Keep container tightly closed.

**Disposal**

Dispose of contents/container in accordance with local/national regulation.

**Specific Physical and Chemical hazards**

Explosive.

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**3. Composition/information on ingredients****Mixture/Substance selection:****Substance**

Ingredient name:2,4,6,-Trinitrophenol

Content (%):80~82

Chemical formula:HOC<sub>6</sub>H<sub>2</sub>(NO<sub>2</sub>)<sub>3</sub>

Chemicals No, Japan:3-823

CAS No.:88-89-1

MW:229.11

ECNO:201-865-9

Note : The figures shown above are not the specifications of the product.

**Stabilizing additives**

Water 18~20% (CAS No.7732-18-5)



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#### 4. First-aid measures

##### Descriptions of first-aid measures

###### General measures

Get medical attention/advice if you feel unwell.

###### IF INHALED

Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER or doctor/physician if you feel unwell.

###### IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water/shower.

Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

###### IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

###### IF SWALLOWED

Rinse mouth.

Immediately call a POISON CENTER or doctor/physician.

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#### 5. Fire-fighting measures

##### Extinguishing media

###### Suitable extinguishing media

In case of fire, use water mist, water jet, dry sand to extinguish.

###### Unsuitable extinguishing media

Inactive gas firefighting equipment

Halogenated firefighting system

Dry-powder firefighting equipment – phosphate etc.

Dry-powder firefighting equipment – hydrogen carbonate etc.

Dry-powder firefighting equipment – except for phosphate etc.,hydrogen carbonate etc.

Carbon dioxide extinguisher

Halogenated extinguisher

Dry-powder extinguisher – phosphate etc.

Dry-powder extinguisher – hydrogen carbonate etc.

Dry-powder extinguisher – except for phosphate etc.,hydrogen carbonate etc.

##### Advice for firefighters

###### Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

In case of fire: Explosion risk. Evacuate area. DO NOT fight fire when fire reaches explosives.

###### Special protective equipment and precautions for fire-fighters

Wear fire/flame resistant/retardant clothing.

Wear protective gloves/protective clothing/eye protection/face protection.

Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

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#### 6. Accidental release measures

##### Personnel precautions, protective equipment and emergency procedures

Ventilate area until material pick up is complete.

Wear proper protective equipment.

##### Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.



Methods and materials for containment and cleaning up  
Sweep up, place in a bag and hold for waste disposal.  
Preventive measures for secondary accident  
Collect spillage.

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## 7. Handling and storage

### Precautions for safe handling

#### Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

Ground/bond container and receiving equipment.

Do not subject to rough handling such as grinding/shock/friction.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

#### Safety Measures

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

When using do not eat, drink or smoke.

#### Any incompatibilities

See "10.Stability and Reactivity"

#### Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Contaminated work clothing should not be allowed out of the workplace.

Take off contaminated clothing and wash it before reuse.

### Storage

#### Conditions for safe storage

Keep wetted with appropriate liquid.

Keep container tightly closed.

Store in accordance with local/national regulation.

Store in a cool, dry place. Do not store in direct sunlight.

Keep under lock and key.

#### Container and packaging materials for safe handling

Keep only in original container.

Glass

Polyethylene

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## 8. Exposure controls/personal protection

### Control parameters

#### Adopted value

(2,4,6,-Trinitrophenol)

ACGIH(1992) TWA: 0.1mg/m<sup>3</sup> (Skin sens; dermatitis; eye irr)

#### OSHA-PEL

(2,4,6,-Trinitrophenol)

TWA: 0.1mg/m<sup>3</sup>

### Exposure controls

Appropriate engineering controls



Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

Individual protection measures

Respiratory protection

Wear respiratory protection.

Hand protection

Wear protective gloves.

Eye protection

Wear eye/face protection.

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## 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Crystals

Color: Light yellow to yellow

Odor: Odorless

Melting point/Freezing point: 122°C

Boiling point or initial boiling point: (decomposes) 300°C

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

Lower and upper explosion limit/flammability limit data is not available.

Flash point: (2,4,6,-Trinitrophenol)(C.C.) 150°C

Auto-ignition temperature: 300°C

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: 1.4 g/100 ml

n-Octanol/water partition coefficient: log Pow2.03

Vapor pressure: Negligible

Density and/or relative density: 1.8 g/cm<sup>3</sup>

Relative vapor density (Air=1): 7.9

No Particle characteristics data is not available.

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## 10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

As a result of flow, agitation, etc., electrostatic charges can be generated. Dust explosion possible if in powder or granular form, mixed with air.

May decompose on shock, friction or concussion. May explode on heating. Mixtures with copper, lead, mercury, zinc and other metals are shock-sensitive. On combustion, forms toxic carbon and nitrogen oxides. Reacts with oxidants and reducing agents. (ICSC 0316)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Oxidizing agents, Reducing agents, Metals

Hazardous decomposition products

Carbon oxides, Nitrogen oxides



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## 11. Toxicological Information

### Information on toxicological effects

#### Acute toxicity

##### Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(2,4,6,-Trinitrophenol)

rat LD50=200mg/kg (MOE risk assessment vol.3, 2004)

#### Irritant properties

Skin corrosion/irritation data is not available.

##### Serious eye damage/irritation

[GHS Cat. Japan, base data]

(2,4,6,-Trinitrophenol)

rabbit mild irritation (SIDS, 2012)

#### Sensitization

##### Skin sensitization

[GHS Cat. Japan, base data]

(2,4,6,-Trinitrophenol)

cat. 1; ACGIH, 2001

Mutagenic effects data is not available.

Carcinogenic effects data is not available.

Reproductive toxicity data is not available.

#### STOT

##### STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

(2,4,6,-Trinitrophenol)

CNS; blood system; liver; kidney (MOE risk assessment vol.3, 2004)

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

(2,4,6,-Trinitrophenol)

respiratory tract irritation (MOE risk assessment vol.3, 2004)

##### STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(2,4,6,-Trinitrophenol)

blood system (DFGOT vol. 17, 2002)

[cat.2]

[GHS Cat. Japan, base data]

(2,4,6,-Trinitrophenol)

liver; testicle (JECDB, 2014)

Aspiration hazard data is not available.

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## 12. Ecological Information

### Ecotoxicity

#### Aquatic toxicity

##### Harmful to aquatic life

##### Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(2,4,6,-Trinitrophenol)

Crustacea (Daphnia magna) EC50=85mg/L/48hr (SIDS, 2010)

##### Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]



(2,4,6,-Trinitrophenol)  
Crustacea (Daphnia magna) NOEC=5mg/L/21 days (SIDS, 2010)  
Water solubility  
(2,4,6,-Trinitrophenol)  
1.4 g/100 ml (ICSC, 2008)  
Persistence and degradability  
(2,4,6,-Trinitrophenol)  
Not degrade rapidly (BOD\_Degradation : 23% (Registered chemicals data check & review, 2003))  
Bioaccumulative potential  
(2,4,6,-Trinitrophenol)  
log Pow=2.03 (ICSC, 2008)  
Mobility in soil  
Mobility in soil data is not available.  
Other adverse effects  
Ozone depleting chemical data is not available.

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### 13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

#### Waste treatment methods

Avoid release to the environment (- if this is not the intended use).  
Dispose of contents/container in accordance with local/national regulation.

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### 14. Transport Information

UN No.: 0154

Proper Shipping Name :

TRINITROPHENOL (PICRIC ACID), dry or wetted with less than 30% water, by mass

Class or division : 1.1D

ERG GUIDE No.: 112

#### IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 0154

Proper Shipping Name :

TRINITROPHENOL (PICRIC ACID), dry or wetted with less than 30% water, by mass

Class or division : 1.1D

#### IATA Dangerous Goods Regulations

UN No.: 0154

Proper Shipping Name :

TRINITROPHENOL (PICRIC ACID), dry or wetted with less than 30% water, by mass

Class or division : 1.1D

#### Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

MARPOL Annex V – Prevention of pollution by garbage discharge

Specific target organ toxicity – repeated exposure: cat.1

2,4,6,-Trinitrophenol



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**15. Regulatory Information**

Safety, health and environmental regulations/legislation specific for the substance or mixture

**US Federal Regulations**

Chemicals listed in TSCA Inventory

2,4,6,-Trinitrophenol

**Other regulatory information**

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

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**16. Other information****GHS classification and labelling**

Expl. 1.1: H201 Explosive; mass explosion hazard

Acute Tox. 3: H301 Toxic if swallowed

Eye Irrit. 2B: H320 Causes eye irritation

Skin Sens. 1: H317 May cause an allergic skin reaction

STOT SE 1: H370 Causes damage to organs after single exposure

STOT SE 3: H335 May cause respiratory irritation

STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

Aquatic Acute 3: H402 Harmful to aquatic life

**Reference Book**

Globally Harmonized System of classification and labelling of chemicals, (6th ed., 2015), UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN

IMDG Code, 2018 Edition (Incorporating Amendment 39-18)

IATA Dangerous Goods Regulations (61th Edition) 2020

Classification, labelling and packaging of substances and mixtures (Table 3 ECNO6182012)

2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2020 TLVs and BEIs. (ACGIH)

<http://monographs.iarc.fr/ENG/Classification/index.php>

Supplier's data/information

**General Disclaimer**

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2018).