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

Product identifier:
- Product name: 2,4,6-Trinitrophenol
- Product code (SDS NO): 80802E-2

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/blood system; liver; kidney)
- Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)
- Specific target organ toxicity – repeated exposure: Category 1 (blood/blood system)
- Specific target organ toxicity – repeated exposure: Category 2 (liver; testicle)

ENVIRONMENT HAZARDS
- Hazardous to the aquatic environment (Acute): Category 3

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
- May cause respiratory irritation
- Causes damage to organs through prolonged or repeated exposure
- May cause damage to organs through prolonged or repeated exposure
- 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.
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.
Wear protective gloves.
Contaminated work clothing should not be allowed out of the workplace.
Wear face protection.
Do not eat, drink or smoke when using this product.

Response
Explosion risk in case of fire.
DO NOT fight fire when fire reaches explosives.
In case of fire: Evacuate area.
Get medical advice/attention if you feel unwell.
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.
Rinse mouth.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

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.

3. Composition/information on ingredients
Mixture/Substance selection:
Substance
Ingredient name: 2,4,6-Trinitrophenol
Content (%): about 80
Chemical formula: HOC₆H₂(NO₂)₃
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.
Impurities and stabilizing additives
Water: about 20%

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

5. Fire-fighting measures
Extinguishing media
Suitable extinguishing media
Use appropriate extinguishing media suitable for surrounding facilities.
Specific hazards arising from the substance or mixture
Explosion risk in case of fire.
Containers may explode when heated.
Fire may produce irritating, corrosive and/or toxic gases.
Advice for firefighters
Specific fire-fighting measures
DO NOT fight fire when fire reaches explosives.
Evacuate non-essential personnel to safe area.
In case of fire: Evacuate area.
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 peace operated
positive pressure mode.

6. Accidental release measures
Personnel precautions, protective equipment and emergency procedures
Ventilate area until material pick up is complete.
Wear proper protective equipment.
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.

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/Incompatibility
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves, protective clothing or face protection.
- When using do not eat, drink or smoke.

Conditions for safe storage, including any incompatibilities
- Recommendation for 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.

8. Exposure controls/personal protection

Control parameters
- Adopted value
  - (2,4,6,-Trinitrophenol)
  - ACGIH(1992) TWA: 0.1mg/m3 (Skin sens; dermatitis; eye irr)
  - OSHA–PEL
    - 2,4,6,-Trinitrophenol TWA: 0.1mg/m3

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.

Safety and Health measures
- 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.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical properties
- Appearance: Crystal
- Color: Light yellow to yellow
- Odor data N.A.
- pH data N.A.

Phase change temperature
- Initial Boiling Point/Boiling point: (decomposes) 300°C
- Boiling range data N.A.
- Melting point/Freezing point: 122°C
Decomposition temperature data N.A.
Flash point: (2,4,6,-Trinitrophenol)(C.C.) 150℃
Auto-ignition temperature: 300℃
Explosive properties data N.A.
Vapor pressure: Negligible
Relative Vapor Density (Air=1): 7.9
Specific gravity/Density: 1.8g/cm³
Solubility
- Solubility in water: 1.4 g/100 ml
- n-Octanol/water partition coefficient: log Pow2.03

10. Stability and Reactivity
Reactivity
- N.A.
Chemical stability
- Stable under normal storage/handling conditions.
Possibility of hazardous reactions
- 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

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
- 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
No Mutagenic effects data available
No Carcinogenic effects data available
No reproductive toxicity data available
Delayed and immediate effects and also chronic effects from short- and long-term exposure
STOT
- STOT—single exposure
  - [cat.1]
12. Ecological Information

Ecotoxicity

Aquatic toxicity

Harmful to aquatic life

Aquatic acute toxicity component(s) data

[GHS Cat. Japan, base data]
(2,4,6-Trinitrophenol)
Crustacea (Daphnia magna) EC50=85mg/L/48hr (SIDS, 2010)

Aquatic chronic toxicity component(s) data

[GHS Cat. Japan, base data]
(2,4,6-Trinitrophenol)
Crustacea (Daphnia magna) NOEC=5mg/L/21days (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)

No Mobility in soil data available
Ozone depleting chemical data not available

13. Disposal considerations

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.
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

15. Regulatory Information

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

2,4,6-Trinitrophenol

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

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
IATA Dangerous Goods Regulations (60th Edition) 2019
Classification, labelling and packaging of substances and mixtures (table3–1 ECNO6182012)
2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2019 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 2017).