1. Identification of the substance/mixture and of the company/undertaking
   Product identifier:
   Product name: 2,4,6-Trinitrophenol
   Product code (SDS NO): 80801E-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:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Ingredient name: 2,4,6-Trinitrophenol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content (%)</td>
<td>drying 99(min)</td>
</tr>
<tr>
<td>Chemical formula</td>
<td>HOC₆H₂(NO₂)₃</td>
</tr>
<tr>
<td>Chemicals No, Japan</td>
<td>3-823</td>
</tr>
<tr>
<td>CAS No.</td>
<td>88-89-1</td>
</tr>
<tr>
<td>MW</td>
<td>229.11</td>
</tr>
<tr>
<td>ECNO</td>
<td>201-865-9</td>
</tr>
</tbody>
</table>

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

Impurities and stabilizing additives
Water: about 15%

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 piece 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
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

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
     Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN
     Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN
     IMDG Code, 2018 Edition (Incorporating Amendment 39–18)
     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).