SAFETY DATA SHEET

1. Identification

Product Name Picric acid, wetted with at least 30% water, by mass
Cat No. : A253-100; A253-500
Synonyms 2,4,6-Trinitrophenol; Picronitric acid; Trinitrophenol
Recommended Use Laboratory chemicals.
Uses advised against Not for food, drug, pesticide or biocidal product use

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Table:

<table>
<thead>
<tr>
<th>Hazard Type</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosives</td>
<td>Division 1.1</td>
</tr>
<tr>
<td>Acute oral toxicity</td>
<td>Category 3</td>
</tr>
<tr>
<td>Acute dermal toxicity</td>
<td>Category 3</td>
</tr>
<tr>
<td>Acute Inhalation Toxicity - Vapors</td>
<td>Category 3</td>
</tr>
<tr>
<td>Specific target organ toxicity - (repeated exposure)</td>
<td>Category 2</td>
</tr>
<tr>
<td>Target Organs - Liver, Kidney, Blood.</td>
<td></td>
</tr>
</tbody>
</table>

Label Elements

Signal Word
Danger

Hazard Statements
Explosive; mass explosion hazard
Toxic if swallowed
Toxic in contact with skin
Toxic if inhaled
May cause damage to organs through prolonged or repeated exposure
Precautionary Statements

Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep wetted with water
Ground/bond container and receiving equipment
Do not subject to grinding/shock/friction

Response
Get medical attention/advice if you feel unwell

Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician

Skin
IF ON SKIN: Wash with plenty of soap and water
Call a POISON CENTER or doctor/physician if you feel unwell
Remove/Take off immediately all contaminated clothing
Wash contaminated clothing before reuse

Ingestion
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth

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

Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Store in accordance with local regulations

Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
None identified

3. Composition / information on ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picric acid</td>
<td>88-89-1</td>
<td>&lt; 70</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>&gt; 30</td>
</tr>
</tbody>
</table>

4. First-aid measures

General Advice
Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Eye Contact
Immediate medical attention is required. Rinse immediately with plenty of water, also under
Picric acid, wetted with at least 30% water, by mass

**Revision Date** 24-May-2017

the eyelids, for at least 15 minutes. Keep eye wide open while rinsing.

**Skin Contact**
Wash off immediately with plenty of water for at least 15 minutes.

**Inhalation**
Move to fresh air. Call a physician or Poison Control Center immediately.

**Ingestion**
Call a physician immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

**Most important symptoms/effects**
No information available.

**Notes to Physician**
Treat symptomatically

### 5. Fire-fighting measures

**Unsuitable Extinguishing Media**
No information available

**Flash Point**
150 °C / 302 °F

**Autoignition Temperature**
300 °C / 572 °F

**Explosion Limits**
- **Upper**
  - No data available
- **Lower**
  - No data available

**Sensitivity to Mechanical Impact**
No information available

**Sensitivity to Static Discharge**
No information available

**Specific Hazards Arising from the Chemical**
The product causes burns of eyes, skin and mucous membranes.

**Hazardous Combustion Products**
Thermal decomposition can lead to release of irritating gases and vapors

**Protective Equipment and Precautions for Firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### NFPA

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>4</td>
<td>4</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### 6. Accidental release measures

**Personal Precautions**
Evacuate personnel to safe areas. Use personal protective equipment. Avoid contact with skin, eyes and clothing.

Refer to protective measures listed in Sections 7 and 8

**Environmental Precautions**
Do not allow material to contaminate ground water system. Should not be released into the environment. See Section 12 for additional ecological information.

**Methods for Containment and Clean Up**
No information available.

### 7. Handling and storage

**Handling**
Ensure adequate ventilation.

**Storage**
Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

### 8. Exposure controls / personal protection
Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
<th>Mexico OEL (TWA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picric acid</td>
<td>TWA: 0.1 mg/m³</td>
<td>(Vacated) TWA: 0.1 mg/m³</td>
<td>IDLH: 75 mg/m³</td>
<td>TWA: 0.1 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Skin</td>
<td>TWA: 0.1 mg/m³</td>
<td>TWA: 0.1 mg/m³</td>
<td>STEL: 0.3 mg/m³</td>
</tr>
</tbody>
</table>

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection
- Tightly fitting safety goggles.

Skin and body protection
- Impervious clothing.
- Impervious gloves.
- Boots.
- Long sleeved clothing.
- Apron.

Respiratory Protection
- Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures
- When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. Provide regular cleaning of equipment, work area and clothing.

9. Physical and chemical properties

- Physical State: Slurry Liquid
- Appearance: Yellow
- Odor: Odorless
- Odor Threshold: No information available
- pH: 1.3 (1.4 %)
- Melting Point/Range: 121.8 °C / 251.2 °F
- Boiling Point/Range: Not applicable
- Flash Point: 150 °C / 302 °F
- Evaporation Rate: No information available
- Flammability (solid,gas): No information available
- Flammability or explosive limits
  - Upper: No data available
  - Lower: No data available
- Vapor Pressure: negligible
- Vapor Density: No information available
- Specific Gravity: 1.767
- Solubility: Insoluble in water
- Partition coefficient; n-octanol/water: No data available
- Autoignition Temperature: 300 °C / 572 °F
- Decomposition Temperature: No information available
- Viscosity: No information available
- Molecular Formula: C₆H₂(NO₂)₃OH
- Molecular Weight: 229.0369

10. Stability and reactivity

Reactive Hazard
- None known, based on information available

Stability
- This material poses an explosion hazard when dry. Polymerization is a highly exothermic
Picric acid, wetted with at least 30% water, by mass

reaction and may generate sufficient heat to cause thermal decomposition and/or rupture containers. Risk of explosion. Explosive properties. Explosive. Unstable if heated.

Conditions to Avoid
To avoid thermal decomposition, do not overheat. Keep away from open flames, hot surfaces and sources of ignition. Do not allow evaporation to dryness. Dry residue is explosive.

Incompatible Materials
Strong oxidizing agents

Hazardous Decomposition Products
Thermal decomposition can lead to release of irritating gases and vapors

Hazardous Polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
Thermal decomposition. Heating may cause an explosion. Hazardous polymerization may occur upon depletion of inhibitor.

11. Toxicological information

Acute Toxicity

Oral LD50
Category 3. ATE = 50 - 300 mg/kg.

Dermal LD50
Category 3. ATE = 200 - 1000 mg/kg.

Vapor LC50
Category 3. ATE = 2 - 10 mg/l.

Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picric acid</td>
<td>LD50 = 200 mg/kg (Rat)</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Water</td>
<td>-</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Toxicologically Synergistic Products
No information available

Irritation
No information available

Sensitization
No information available

Carcinogenicity
The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
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<tbody>
<tr>
<td>Picric acid</td>
<td>88-89-1</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Mutagenic Effects
No information available

Reproductive Effects
No information available.

Developmental Effects
No information available.

Teratogenicity
No information available.

STOT - single exposure
None known

STOT - repeated exposure
Liver Kidney Blood

Aspiration hazard
No information available

Symptoms / effects, both acute and delayed
No information available

Endocrine Disruptor Information
No information available

Other Adverse Effects
The toxicological properties have not been fully investigated.
Picric acid, wetted with at least 30% water, by mass

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### 12. Ecological information

**Ecotoxicity**
Harmful to aquatic organisms.

**Persistence and Degradability**
No information available

**Bioaccumulation/ Accumulation**
No information available.

**Mobility**
No information available.

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### 13. Disposal considerations

**Waste Disposal Methods**
Should not be released into the environment.

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### 14. Transport information

**DOT**
- **UN-No**: UN1344
- **Proper Shipping Name**: TRINITROPHENOL, WETTED
- **Hazard Class**: 4.1
- **Packing Group**: I

**TDG**
- **UN-No**: UN1344
- **Proper Shipping Name**: TRINITROPHENOL, WETTED
- **Hazard Class**: 4.1
- **Packing Group**: I

**IATA**
- **UN-No**: UN1344
- **Proper Shipping Name**: TRINITROPHENOL, WETTED
- **Hazard Class**: 4.1
- **Packing Group**: I

**IMDG/IMO**
- **UN-No**: UN1344
- **Proper Shipping Name**: TRINITROPHENOL, WETTED
- **Hazard Class**: 4.1
- **Packing Group**: I

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### 15. Regulatory information

#### International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picric acid</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>201-865-9</td>
<td>-</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Water</td>
<td>X</td>
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<td>-</td>
<td>231-791-2</td>
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<td></td>
<td>X</td>
<td>-</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

**Legend:**
- X - Listed
- E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
- F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
- N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
- P - Indicates a commenced PMN substance
- R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
- S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
- T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
- XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).
- Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
- Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

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**U.S. Federal Regulations**

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Picric acid, wetted with at least 30% water, by mass

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TSCA 12(b)  Not applicable

SARA 313

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picric acid</td>
<td>88-89-1</td>
<td>&lt; 70</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories

- Acute Health Hazard  Yes
- Chronic Health Hazard  Yes
- Fire Hazard  No
- Sudden Release of Pressure Hazard  Yes
- Reactive Hazard  No

CWA (Clean Water Act)  Not applicable

Clean Air Act  Not applicable

OSHA Occupational Safety and Health Administration  Not applicable

CERCLA  Not applicable

California Proposition 65  This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picric acid</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>Water</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation

- Reportable Quantity (RQ): N
- DOT Marine Pollutant  N
- DOT Severe Marine Pollutant  N

U.S. Department of Homeland Security

This product contains the following DHS chemicals:

<table>
<thead>
<tr>
<th>Component</th>
<th>DHS Chemical Facility Anti-Terrorism Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picric acid</td>
<td>2000 lb STQ</td>
</tr>
</tbody>
</table>

Other International Regulations

Mexico - Grade  Slight risk, Grade 1

16. Other information

Prepared By  Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date  22-Oct-2014
Revision Date  24-May-2017
Print Date  24-May-2017
Revision Summary  This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.