1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 1,3,5-Trinitrobenzene
Product Number : 442237
Brand : Supelco
Product Use : For laboratory research purposes.
Supplier : Sigma-Aldrich Canada Co.
Manufacturer : Sigma-Aldrich Corporation

2. HAZARDS IDENTIFICATION

Emergency Overview

Target Organs
Blood, Nerves., Liver

WHMIS Classification

B4 Flammable solid
D1A Very Toxic Material Causing Immediate and Serious Toxic Effects
D1B Toxic Material Causing Immediate and Serious Toxic Effects
D2B Toxic Material Causing Other Toxic Effects

GHS Classification
Explosives (Division 1.1)
Acute toxicity, Oral (Category 3)
Acute toxicity, Inhalation (Category 2)
Acute toxicity, Dermal (Category 2)
Skin irritation (Category 2)
Serious eye damage (Category 1)
Acute aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H201 Explosive; mass explosion hazard.
H301    Toxic if swallowed.
H310 + H330    Fatal in contact with skin or if inhaled
H315    Causes skin irritation.
H318    Causes serious eye damage.
H400    Very toxic to aquatic life.

Precautionary statement(s)
P260    Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P273    Avoid release to the environment.
P280    Wear protective gloves/ eye protection/ face protection.
P284    Wear respiratory protection.
P302 + P350    IF ON SKIN: Gently wash with plenty of soap and water.
P305 + P351 + P338    IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310    Immediately call a POISON CENTER or doctor/ physician.
P370 + P380    In case of fire: Evacuate area.
P501    Dispose of contents/ container to an approved waste disposal plant.

HMIS Classification
Health hazard: 4
Flammability: 0
Physical hazards: 4

Potential Health Effects
Inhalation    May be fatal if inhaled. Causes respiratory tract irritation.
Skin    May be fatal if absorbed through skin. Causes skin irritation.
Eyes    Causes eye irritation.
Ingestion    Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula: \( C_6H_3N_3O_6 \)
Molecular Weight: 213.10 g/mol

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<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
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<td>202-752-7</td>
<td>609-005-00-8</td>
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4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Flammable in the presence of a source of ignition, through friction or retained heat. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special protective equipment for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

Explosion data - sensitivity to mechanical impact
no data available

Explosion data - sensitivity to static discharge
no data available

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSOAL PROTECTION

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Eye protection**
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

**Specific engineering controls**
Use mechanical exhaust or laboratory fume hood to avoid exposure.

9. **PHYSICAL AND CHEMICAL PROPERTIES**

<table>
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<tr>
<td>Upper explosion limit</td>
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<td>Partition coefficient: ( n )-octanol/water</td>
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<tr>
<td>Evaporation rate</td>
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</table>

10. **STABILITY AND REACTIVITY**

**Chemical stability**
Stable under recommended storage conditions.

**Possibility of hazardous reactions**
no data available
Conditions to avoid
Heat, flames and sparks.

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 275 mg/kg

Inhalation LC50
Dermal LD50
Other information on acute toxicity
no data available

Skin corrosion/irritation

Serious eye damage/eye irritation
Eyes - rabbit - Severe eye irritation

Respiratory or skin sensitisation
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Reproductive toxicity

no data available

Teratogenicity
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation May be fatal if inhaled. Causes respiratory tract irritation.
Ingestion Toxic if swallowed.
Skin May be fatal if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.

Signs and Symptoms of Exposure
Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer., Nausea, Dizziness, Headache, Lethargy., Cough, chest pain, Difficulty in breathing

Synergistic effects
no data available

Additional Information
RTECS: DC3850000

12. ECOLOGICAL INFORMATION

Toxicity
- Toxicity to fish: LC50 - Oncorhynchus mykiss (rainbow trout) - 0.52 mg/l - 96.0 h
- Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 2.7 mg/l - 48 h

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1354    Class: 4.1    Packing group: I
Proper shipping name: Trinitrobenzene, wetted
Reportable Quantity (RQ): 10 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 1354    Class: 4.1    Packing group: I
Proper shipping name: TRINITROBENZENE, WETTED
EMS-No: F-B, S-J
Marine pollutant: No

IATA
UN number: 1354    Class: 4.1    Packing group: I
Proper shipping name: Trinitrobenzene, wetted

15. REGULATORY INFORMATION
**WHMIS Classification**

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<th>Code</th>
<th>Description</th>
<th>Properties</th>
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<td>B4</td>
<td>Flammable solid</td>
<td>Flammable solid</td>
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<tr>
<td>D1A</td>
<td>Very Toxic Material Causing Immediate and Serious Toxic Effects</td>
<td>Highly toxic by skin absorption</td>
</tr>
<tr>
<td>D1B</td>
<td>Toxic Material Causing Immediate and Serious Toxic Effects</td>
<td>Highly toxic by inhalation</td>
</tr>
<tr>
<td>D2B</td>
<td>Toxic Material Causing Other Toxic Effects</td>
<td>Toxic by ingestion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate skin irritant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate eye irritant</td>
</tr>
</tbody>
</table>

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

### 16. OTHER INFORMATION

**Further information**
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.