1. IDENTIFICATION OF SUBSTANCE/PREPARATION AND THE COMPANY UNDERTAKING

Chemical Name: 1-Bromo-2,4-dinitrobenzene
Product Code: FB10851
Synonyms: -
Recommended uses: For R&D purposes
Supplier: Carbosynth Ltd, 8&9 Old Station Business Park, Compton, Berkshire, RG20 6NE, UK.

Emergency contact numbers:
Telephone: +44 (0)1635 578 444
Fax: +44 (0)1635 579 444
Mobile: +44 (0)7887 998 634

2. HAZARDS IDENTIFICATION

Toxic in contact with skin and if swallowed. Irritating to eyes and skin. May cause sensitization by skin contact.

Classification:

Acute toxicity, oral (Category 3)
Acute toxicity, dermal (Category 3)
Skin corrosion/irritation (Category 2)
Sensitization, skin (Category 1)
Serious eye damage/eye irritation (Category 2A)

Labelling and precautionary statements:

Pictogram:

Signal word: Danger.

Hazard statement(s):
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.

Precautionary statement(s):
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P305 + P351 + P338 IF IN EYES:
MATERIAL SAFETY DATA SHEET

1-BROMO-2,4-DINITROBENZENE

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313
If skin irritation or rash occurs: Get medical advice/attention.

Hazard symbol(s):
T  Toxic.
X  Irritant.

R-phrase(s):
R24/25  Toxic in contact with skin and if swallowed.
R36/38  Irritating to eyes and skin.
R43   May cause sensitization by skin contact.

S-phrase(s):
S22   Do not breathe dust.
S26   In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37 Wear suitable protective clothing and gloves.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Formula: C₆H₃BrN₂O₄
Molecular weight: 247.00
CAS Number: 584-48-5
EINECS Number: 209-539-8

4. FIRST AID MEASURES

Eye contact: Immediately flush eye with copious amounts of water for at least 15 minutes. Get medical aid immediately.
Skin contact: In case of contact remove contaminated clothing and immediately wash affected areas with copious quantities of water and soap for at least 15 minutes. Get medical aid immediately. Wash contaminated clothing before reuse.
Inhalation: Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen. Get medical aid.
Ingestion: Never give anything by mouth to an unconscious person. Wash out mouth with water provided person is conscious. Call a physician.
Notes to Physician: Treat symptomatically and supportively.

5. FIRE-FIGHTING MEASURES

Personal precautions: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.
Extinguishing media: In case of fire use water spray, dry chemical powder, carbon dioxide, or alcohol-resistant foam.
Special hazards arising from the substance or mixture: Carbon oxides, nitrogen oxides (NOx), hydrogen bromide gas. Take care as it may decompose upon combustion or in high temperatures to generate poisonous fume.
6. ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.

Personal precautions: Wear self-contained breathing apparatus, eye protection and gloves. Keep personal hygiene. Avoid contact with skin and eyes. Avoid dust formation. Avoid breathing dust, vapours, mist or gas. Ensure adequate ventilation. Keep people away from and upwind of spill/leak.

Environmental precautions: Do not let product enter the drains.

Spills/Leaks: Sweep up and place the material in appropriate container for disposal and dispose of as hazardous waste. Ventilate area, clean up spills and wash spill site after material pickup is complete, observing precautions in the Protective Equipment section.

7. HANDLING AND STORAGE

Handling: Wear appropriate protective clothing - see Section 8. Wash hands and face thoroughly after handling. Use only under a chemical fume hood. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with skin, eyes and clothing. Be careful not to cause leakage, overflow, or dispersion. Avoid ingestion and inhalation. Avoid formation of dust and aerosols. Avoid shock and friction. Keep away from heat/sparks/open flame/hot surfaces. No smoking. Take measures to prevent the build up of electrostatic charge. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Storage: Store in a cool, dry, well-ventilated area. Keep container tightly closed. Store locked up. Be sure not to give the container unexpected impacts, such as falling down or falling off. Store away from incompatible materials such as oxidizing agents. Protect from light.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protection equipment:

Eye protection: Wear appropriate protective safety glasses with side-shields conforming to EN166, chemical safety goggles or face-shield (min. 8-inch) as described by OSHA’s eye and face protection regulations. Use equipment for eye protection.
Skin protection: Wear appropriate protective gloves to prevent skin exposure, as defined in EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body protection: Appropriate protective clothing, overalls.

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N95 (US) or type P1 (EU 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).

Hygiene measures: Use good working practices. Wash hands and face thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Yellow solid</td>
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<tr>
<td>Odour</td>
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<tr>
<td>Odour threshold</td>
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</tr>
<tr>
<td>pH</td>
<td>Data not available/does not apply</td>
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<tr>
<td>Melting point</td>
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<td>Boiling point</td>
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<td>Flash point</td>
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<tr>
<td>Evaporation rate</td>
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<tr>
<td>Flammability</td>
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<tr>
<td>Flammability or explosive limits</td>
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<tr>
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<td>Relative density</td>
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<td>Solubility</td>
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<td>Decomposition temperature</td>
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<tr>
<td>Viscosity</td>
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</table>

10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability</td>
<td>Stable under recommended storage conditions.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>Heat, shock, friction.</td>
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<tr>
<td>Incompatibilities with other materials</td>
<td>Oxidizing agents.</td>
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<tr>
<td>Hazardous decomposition products</td>
<td>Carbon oxides, nitrogen oxides (NOx), hydrogen bromide gas.</td>
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<tr>
<td>Hazardous polymerization</td>
<td>Data not available.</td>
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</tbody>
</table>

11. TOXICOLOGICAL INFORMATION

Date of issue: 27 October 2016
Revision Number: 0
RTCS #: CY9021500.

Acute toxicity: Data not available.

Skin corrosion/irritation: Data not available.

Serious eye damage/eye irritation: Data not available.

Respiratory or skin sensitization: Data not available.

Germ cell mutagenicity: Data not 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.

Reproductive toxicity: Data not available.

Specific target organ toxicity - single exposure: Data not available.

Specific target organ toxicity - repeated exposure: Data not available.

Aspiration hazard: Data not available.

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.

To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

Target organs: Data not available.

Potential health effects:
Eye: Causes serious eye irritation.
Skin: Toxic in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
Ingestion: Toxic if swallowed.
Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
Chronic: No information found.

12. ECOLOGICAL INFORMATION

Data not available.
13. DISPOSAL CONSIDERATIONS

Observe all federal, state and local environmental regulations. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Contact a licensed professional waste disposal service to dispose of this material.

14. TRANSPORT INFORMATION

This product is classified as hazardous for transport.

**ADR/RID**
- Proper Shipping Name: TOXIC SOLID, ORGANIC, N.O.S. (1-Bromo-2,4-dinitrobenzene)
- UN Number: 2811
- Class: 6.1
- Packing Group: III
- Environmental hazards: No.

**IMDG**
- Proper Shipping Name: TOXIC SOLID, ORGANIC, N.O.S. (1-Bromo-2,4-dinitrobenzene)
- UN Number: 2811
- Class: 6.1
- Packing Group: III
- Marine pollutant: No.

**IATA**
- Proper Shipping Name: TOXIC SOLID, ORGANIC, N.O.S. (1-Bromo-2,4-dinitrobenzene)
- UN Number: 2811
- Class: 6.1
- Packing Group: III
- Environmental hazards: No.

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

16. ADDITIONAL INFORMATION

Further information on PPE:
- European Standard & performance category markings:
  - EN143 - Particulates filter.
  - EN166 - Standard applicable to all types of personal eye protectors.
  - EN374 - Protects hands against chemicals and/or microorganisms.

Date of issue: 27 October 2016
Revision Number: 0
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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.