SAFETY DATA SHEET
Magnesium tert-butoxide

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product name Magnesium tert-butoxide
Product number FM39286
CAS number 32149-57-8
EC number 250-931-3

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses Laboratory reagent. Manufacture of substances. Research and development.

1.3. Details of the supplier of the safety data sheet
Supplier Carbosynth Ltd
8&9 Old Station Business Park
Compton
Berkshire
RG20 6NE
UK
+44 1635 578444
+44 1635 579444
info@carbosynth.com

1.4. Emergency telephone number
Emergency telephone +44 7887 998634

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification (EC 1272/2008)
Physical hazards Flam. Sol. 2 - H228
Health hazards Acute Tox. 4 - H332 Skin Corr. 1B - H314 Eye Dam. 1 - H318
Environmental hazards Not Classified

2.2. Label elements
EC number 250-931-3

Pictogram
Signal word Danger
Magnesium tert-butoxide

Hazard statements
H228 Flammable solid.
H314 Causes severe skin burns and eye damage.
H332 Harmful if inhaled.

Precautionary statements
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/ container in accordance with national regulations.

Supplemental label information
EUH014 Reacts violently with water.

2.3. Other hazards
No data available.

SECTION 3: Composition/information on ingredients

3.1. Substances
Product name
Magnesium tert-butoxide
CAS number
32149-57-8
EC number
250-931-3
Chemical formula
C₈H₁₈MgO₂

SECTION 4: First aid measures

4.1. Description of first aid measures
General information
Get medical advice/attention if you feel unwell.

Inhalation
Remove person to fresh air and keep comfortable for breathing. If breathing stops, provide artificial respiration. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention if symptoms are severe or persist.

Ingestion
Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth thoroughly with water. Give plenty of water to drink. Get medical attention if symptoms are severe or persist.

Skin contact
Remove contaminated clothing. Rinse with water. Continue to rinse for at least 15 minutes. Wash contaminated clothing before reuse. Get medical attention if symptoms are severe or persist.

Eye contact
Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. Get medical attention if symptoms are severe or persist.

4.2. Most important symptoms and effects, both acute and delayed
General information
See Section 11 for additional information on health hazards.

4.3. Indication of any immediate medical attention and special treatment needed
Notes for the doctor
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Magnesium tert-butoxide

Suitable extinguishing media
Extinguish with alcohol-resistant foam, carbon dioxide or dry powder. Use fire-extinguishing media suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards
None known.

Hazardous combustion products
Thermal decomposition or combustion products may include the following substances: Oxides of carbon. Magnesium.

5.3. Advice for firefighters

Special protective equipment for firefighters
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter’s clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents. Use protective equipment appropriate for surrounding materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions
Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into spilled material. Avoid inhalation of dust and vapours. Provide adequate ventilation. Eliminate all sources of ignition. Keep unnecessary and unprotected personnel away from the spillage.

6.2. Environmental precautions

Environmental precautions
Avoid discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up
Wear protective clothing as described in Section 8 of this safety data sheet. Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into suitable waste disposal containers and seal securely. Clear up spills immediately and dispose of waste safely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections
For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions
Wear protective clothing as described in Section 8 of this safety data sheet. Wash hands thoroughly after handling. Provide adequate ventilation. Avoid generation and spreading of dust. Avoid contact with skin and eyes. Avoid inhalation of dust and vapours. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions
Keep container tightly closed. Store contents under inert gas. Store at room temperature.

7.3. Specific end use(s)

Specific end use(s)
The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits
Magnesium tert-butoxide

No exposure limits known for ingredient(s).

8.2. Exposure controls

Appropriate engineering controls: Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection: Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection: Wear protective gloves. To protect hands from chemicals, gloves should comply with European Standard EN374.

Other skin and body protection: Wear appropriate clothing to prevent repeated or prolonged skin contact.

Respiratory protection: Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is ‘CE’-marked. Particulate filter, type P3. Particulate filters should comply with European Standard EN143. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

Environmental exposure controls: Keep container tightly sealed when not in use.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

- Appearance: Solid.
- Colour: White, Yellow, Greenish Grey.
- Odour: No data available.
- Odour threshold: No data available.
- pH: No data available.
- Melting point: No data available.
- Initial boiling point and range: No data available.
- Flash point: No data available.
- Evaporation rate: No data available.
- Flammability (solid, gas): No data available.
- Upper/lower flammability or explosive limits: No data available.
- Vapour pressure: No data available.
- Vapour density: No data available.
- Relative density: No data available.
- Solubility(ies): No data available.
- Partition coefficient: No data available.
- Auto-ignition temperature: No data available.
Magnesium tert-butoxide

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<td>Viscosity</td>
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<td>Explosive properties</td>
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<tr>
<td>Oxidising properties</td>
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9.2. Other information

Molecular weight 170.53

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity No data available.

10.2. Chemical stability

Stability Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions No data available.

10.4. Conditions to avoid

Conditions to avoid Heat, sparks, flames. Avoid exposure to high temperatures or direct sunlight. Protect from moisture. Dust/Mist

10.5. Incompatible materials

Materials to avoid Strong oxidising agents. Strong acids.

10.6. Hazardous decomposition products

Hazardous decomposition products Oxides of carbon. Magnesium.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral
Notes (oral LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - dermal
Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation
Notes (inhalation LC₅₀) Acute Tox. 4 - H332 Harmful if inhaled.

ATE inhalation (dusts/mists mg/l) 1.5

Skin corrosion/irritation
Skin data Skin Corr. 1B - H314 Causes severe burns.

Serious eye damage/irritation
Serious eye damage/irritation Eye Dam. 1 - H318 Corrosive to skin. Corrosivity to eyes is assumed.

Respiratory sensitisation
Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation
Magnesium tert-butoxide

Skin sensitisation
Based on available data the classification criteria are not met.

Germ cell mutagenicity
Based on available data the classification criteria are not met.

Genotoxicity - in vitro
Based on available data the classification criteria are not met.

Carcinogenicity
Based on available data the classification criteria are not met.

IARC carcinogenicity
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
Reproductive toxicity - fertility
Based on available data the classification criteria are not met.

Reproductive toxicity - development
Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure
STOT - single exposure
Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure
STOT - repeated exposure
Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard
Not relevant. Solid.

General information
Dust may irritate the eyes and the respiratory system. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation
Corrosive to the respiratory tract. Symptoms following overexposure may include the following: Severe irritation of nose and throat.

Ingestion
May cause chemical burns in mouth, oesophagus and stomach. Symptoms following overexposure may include the following: Severe stomach pain. Nausea, vomiting.

Skin contact
Causes severe burns. Symptoms following overexposure may include the following: Pain or irritation. Redness. Blistering may occur.

Eye contact
Causes serious eye damage. Symptoms following overexposure may include the following: Pain. Profuse watering of the eyes. Redness.

Route of exposure
Ingestion Inhalation Skin and/or eye contact

Target organs
No specific target organs known.

SECTION 12: Ecological Information

Ecotoxicity
Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

12.1. Toxicity
Toxicity
Based on available data the classification criteria are not met.

12.2. Persistence and degradability
Persistence and degradability
The degradability of the product is not known.

12.3. Bioaccumulative potential
Bioaccumulative potential
No data available on bioaccumulation.

Partition coefficient
No data available.
Magnesium tert-butoxide

12.4. Mobility in soil

Mobility

No data available.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment

No data available.

12.6. Other adverse effects

Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information

Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID) 2921
UN No. (IMDG) 2921
UN No. (ICAO) 2921
UN No. (ADN) 2921

14.2. UN proper shipping name

Proper shipping name (ADR/RID) CORROSIVE SOLID, FLAMMABLE, N.O.S. (Magnesium tert-butoxide)
Proper shipping name (IMDG) CORROSIVE SOLID, FLAMMABLE, N.O.S. (Magnesium tert-butoxide)
Proper shipping name (ICAO) CORROSIVE SOLID, FLAMMABLE, N.O.S. (Magnesium tert-butoxide)
Proper shipping name (ADN) CORROSIVE SOLID, FLAMMABLE, N.O.S. (Magnesium tert-butoxide)

14.3. Transport hazard class(es)

ADR/RID class 8
ADR/RID subsidiary risk 4.1
ADR/RID classification code CF2
ADR/RID label 8
IMDG class 8
IMDG subsidiary risk 4.1
ICAO class/division 8
ICAO subsidiary risk 4.1
ADN class 8
ADN subsidiary risk 4.1
Magnesium tert-butoxide

Transport labels

14.4. Packing group

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<tr>
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<td>II</td>
</tr>
<tr>
<td>ICAO packing group</td>
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14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

<table>
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<th>Precaution</th>
<th>Code</th>
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<td>ADR transport category</td>
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<td>Emergency Action Code</td>
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<td>Hazard Identification Number (ADR/RID)</td>
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<td>Tunnel restriction code</td>
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14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

<table>
<thead>
<tr>
<th>Regulations</th>
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<tbody>
<tr>
<td>National regulations</td>
</tr>
<tr>
<td>Health and Safety at Work etc. Act 1974 (as amended).</td>
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<tr>
<td>The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ['CDG 2009'].</td>
</tr>
<tr>
<td>EH40/2005 Workplace exposure limits.</td>
</tr>
<tr>
<td>EU legislation</td>
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</table>

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information
Magnesium tert-butoxide

Abbreviations and acronyms used in the safety data sheet

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
CAS: Chemical Abstracts Service.
ATE: Acute Toxicity Estimate.
LC₅₀: Lethal Concentration to 50% of a test population.
LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
EC₅₀: 50% of maximal Effective Concentration.
PBT: Persistent, Bioaccumulative and Toxic substance.
vPvB: Very Persistent and Very Bioaccumulative.

Training advice
Only trained personnel should use this material.

Revision date
23/11/2017

Revision
1

SDS number
144926

Hazard statements in full
H228 Flammable solid.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H332 Harmful if inhaled.

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.