SAFETY DATA SHEET
Adamantane

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

1.1. Product identifier
Product name
Adamantane
Product number
FA01417
CAS number
281-23-2
EC number
206-001-4

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
Not Classified
Health hazards
Skin Irrit. 2 - H315 Eye Irrit. 2 - H319
Environmental hazards
Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410

2.2. Label elements
EC number
206-001-4

Pictogram

Signal word
Warning
Adamantane

Hazard statements
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements
P264 Wash contaminated skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302+P352 IF ON SKIN: Wash with plenty of 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.
P501 Dispose of contents/ container in accordance with national regulations.

2.3. Other hazards
No data available.

SECTION 3: Composition/information on ingredients

3.1. Substances
Product name Adamantane
CAS number 281-23-2
EC number 206-001-4
Chemical formula C₁₀H₁₆

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

5.2. Special hazards arising from the substance or mixture
Specific hazards None known.
Adamantane

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

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. 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. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities
Storage precautions
Keep container tightly closed. Store away from incompatible materials (see Section 10). Store at room temperature. Protect from light.

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
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.
Adamantane

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 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

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<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tr>
<td>Appearance</td>
<td>Solid</td>
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<td>Colour</td>
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<td>Odour</td>
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<td>pH</td>
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<td>Melting point</td>
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<td>Flash point</td>
<td>87°C Closed cup.</td>
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<td>Evaporation rate</td>
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<td>Flammability (solid, gas)</td>
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<td>Upper/lower flammability or explosive limits</td>
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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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</table>
Adamantane

9.2. Other information
Molecular weight 136.23

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 Avoid heat. Light. Avoid the accumulation of dust.

10.5. Incompatible materials
Materials to avoid Strong oxidising agents.

10.6. Hazardous decomposition products
Hazardous decomposition products Oxides of carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity - oral
Acute toxicity oral (LD₅₀ mg/kg) 3,600.0
Species Rat
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) Based on available data the classification criteria are not met.

Skin corrosion/irritation
Animal data Irritating.

Serious eye damage/irritation
Serious eye damage/irritation Causes serious eye irritation.

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

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

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

Carcinogenicity
Adamantane

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

IARC carcinogenicity
None of the ingredients are listed or exempt.

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
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
Dust may irritate the respiratory system. Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

Ingestion
May cause irritation.

Skin contact
Redness. Irritating to skin.

Eye contact
Irritating to eyes.

Route of exposure
Ingestion Inhalation Skin and/or eye contact

Target organs
No specific target organs known.

RTECS #
YK493000

SECTION 12: Ecological Information

Ecotoxicity
Very toxic to aquatic life with long lasting effects.

12.1. Toxicity

Acute aquatic toxicity

LE(C)₅₀
0.1 < L(E)C₅₀ ≤ 1

M factor (Acute)
1

Acute toxicity - fish
LC₅₀, 96 hours: 0.285 mg/l, Pimephales promelas (Fat-head Minnow)

Chronic aquatic toxicity

NOEC
0.01 < NOEC ≤ 0.1

Degradability
Non-rapidly degradable

M factor (Chronic)
1

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.
Adamantane

Partition coefficient
No data available.

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
Very toxic to aquatic life with long lasting effects.

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.

Disposal methods
Mix or dissolve the material in a combustible solvent and burn in chemical incinerator equipped with an afterburner and scrubber.

SECTION 14: Transport information

14.1. UN number
UN No. (ADR/RID)  3077
UN No. (IMDG)  3077
UN No. (ICAO)  3077
UN No. (ADN)  3077

14.2. UN proper shipping name
Proper shipping name (ADR/RID)  ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Adamantane)
Proper shipping name (IMDG)  ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Adamantane)
Proper shipping name (ICAO)  ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Adamantane)
Proper shipping name (ADN)  ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Adamantane)

14.3. Transport hazard class(es)
ADR/RID class  9
ADR/RID classification code  M7
ADR/RID label  9
IMDG class  9
ICAO class/division  9
ADN class  9
Adamantane

Transport labels

14.4. Packing group

ADR/RID packing group  III
IMDG packing group  III
ADN packing group  III
ICAO packing group  III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

14.6. Special precautions for user

EmS  F-A, S-F
ADR transport category  3
Emergency Action Code  2Z
Hazard Identification Number  90

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

National regulations  Health and Safety at Work etc. Act 1974 (as amended).
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].
EH40/2005 Workplace exposure limits.


15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

Inventories

US - TSCA
Present.

SECTION 16: Other information
Adamantane

**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**

21/11/2017

**Revision**

1

**SDS number**

144926

**Hazard statements in full**

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

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.