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

1.1 Product identifier
Trade name Isobutylamine
Stock number: A11017
CAS Number: 78-81-9
EC number: 201-145-4

1.2 Relevant identified uses of the substance or mixture and uses advised against.
Identified use: SU24 Scientific research and development

1.3 Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Alfa Aesar
Avocado Research Chemicals, Ltd.
Shore Road
Port of Heysham Industrial Park
Heysham Lancashire LA3 2XY
United Kingdom
Office Tel: +44 (0) 1524 850506
Office Fax: +44 (0) 1524 850608
Email: uktech@alfa.com
www.alfa.com
Informing department: Product safety department.

1.4 Emergency telephone number: Call Carechem 24 at +44 (0) 1865 407333 (English only); +44 (0) 1235 239670 (Multi-language)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008

- GHS02 flame
  - Flam. Liq. 2 H225 Highly flammable liquid and vapour.
- GHS06 skull and crossbones
  - Acute Tox. 3 H301 Toxic if swallowed.
- GHS05 corrosion
  - Skin Corr. 1B H314 Causes severe skin burns and eye damage.

2.2 Label elements
This substance is classified and labelled according to the CLP regulation.

Hazard pictograms

- GHS02 GHS05 GHS06

Signal word Danger
Hazard statements
H225 Highly flammable liquid and vapour.
H301 Toxic if swallowed.
H314 Causes severe skin burns and eye damage.

Precautionary statements
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/…
P303+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

3.1 Substances
CAS# Designation:
78-81-9 Isobutylamine
EC number: 201-145-4

SECTION 4: First aid measures

4.1 Description of first aid measures
General information
Immediately remove any clothing soiled by the product.

After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
Seek immediate medical advice.

After skin contact
Instantly wash with water and soap and rinse thoroughly. Seek immediate medical advice.

After eye contact
Rinse opened eye for several minutes under running water. Then consult doctor.

After swallowing
Seek medical treatment.

4.2 Most important symptoms and effects, both acute and delayed
Causes severe skin burns.
Causes serious eye damage.

4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

(Contd. on page 2)
SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents: CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

5.2 Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
- Carbon monoxide and carbon dioxide
- Nitrogen oxides (NOx)

5.3 Advice for firefighters
- Wear self-contained breathing apparatus.
- Wear full protective suit.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
- Wear protective equipment. Keep unprotected persons away.
- Ensure adequate ventilation.
- Keep away from ignition sources.

6.2 Environmental precautions
- Do not allow product to reach sewage system or water bodies.

6.3 Methods and material for containment and cleaning up:
- Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- Use neutralizing agent.
- Dispose of contaminated material as waste according to section 13.
- Ensure adequate ventilation.

6.4 Reference to other sections
- See Section 7 for information on safe handling.
- See section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
- Keep containers tightly sealed.
- Store in cool, dry place in tightly closed containers.
- Ensure good ventilation/exhaustion at the workplace.
- Prevent formation of aerosols.

7.2 Conditions for safe storage, including any incompatibilities
- Information about storage in one common storage facility:
  - Do not store together with acids.
  - Store away from oxidising agents.
  - Store away from acid chlorides.
  - Store away from acid anhydrides.

7.3 Specific end use(s)
- No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
- The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

8.2 Exposure controls
- General protective and hygienic measures:
  - Keep away from foodstuffs, beverages and food.
  - Instantly remove any soiled and impregnated garments.
  - Wash hands during breaks and at the end of the work.
  - Avoid contact with the eyes and skin.

- Breathing equipment:
  - Use breathing protection with high concentrations.

- Recommended filter device for short term use:
  - Use a respirator with organic vapor/acid gas cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards such as NIOSH (USA) or CEN (EU).

- Protection of hands:
  - Check protective gloves prior to each use for their proper condition.

- Material of gloves:
  - Fluorocarbon rubber (Viton)
  - Penetration time of glove material (in minutes): 60

- Eye protection:
  - Tightly sealed safety glasses.
  - Full face protection.

- Body protection:
  - Protective work clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
- General Information
- Appearance:
  - Form: Liquid
  - Colour: Colourless
  - Smell: Amine-like
  - Odour threshold: Not determined.
  - pH-value: Not determined.

(Contd. of page 3)
Change in condition
Melting point/Melting range: -85 °C
Boiling point/Boiling range: 67-69 °C
Sublimation temperature / start: Not determined

Flash point: -9 °C
Inflammability (solid, gaseous) Not determined.
Ignition temperature: 400 °C
Decomposition temperature: Not determined
Self-inflammability: Not determined.

Danger of explosion: Product is not explosive. However, formation of explosive air/steam mixtures is possible.
Critical values for explosion:
Lower: 1.9 Vol %
Upper: 10.8 Vol %
Steam pressure at 20 °C: 100 hPa
Density at 20 °C: 0.736 g/cm³
Relative density: Not determined.
Vapour density: Not determined.
Evaporation rate: Not determined.
Solubility in / Miscibility with Water: Fully miscible.
Partition coefficient (n-octanol/water): Not determined.
Viscosity: dynamic: Not determined.
kinematic: Not determined.
9.2 Other information: No further relevant information available.

SECTION 10: Stability and reactivity
10.1 Reactivity: No information known.
10.2 Chemical stability: Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions: Reacts with strong oxidising agents.
10.4 Conditions to avoid: No further relevant information available.
10.5 Incompatible materials: Acids, Oxidising agents, Acid chlorides, Acid anhydrides.
10.6 Hazardous decomposition products: Carbon monoxide and carbon dioxide, Nitrogen oxides (NOx).

SECTION 11: Toxicological information
11.1 Information on toxicological effects:
Acute toxicity:
Toxic if swallowed. Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.
LD(LD)50 values that are relevant for classification:
Oral: [224 mg/kg (rat)]
Skin irritation or corrosion: Causes severe skin burns.
Eye irritation or corrosion: Causes serious eye damage.
Sensitization: No sensitizing effect known.
Germ cell mutagenicity: No effects known.
Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure: No effects known.
Specific target organ system toxicity - single exposure: No effects known.
Aspiration hazard: No effects known.
Subacute to chronic toxicity: No effects known.
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

SECTION 12: Ecological information
12.1 Toxicity:
Aquatic toxicity: No further relevant information available.
12.2 Persistence and degradability: No further relevant information available.
12.3 Bioaccumulative potential: No further relevant information available.
12.4 Mobility in soil: No further relevant information available.
Additional ecological information:
General notes:
Do not allow product to reach ground water, water bodies or sewage system.
Water hazard class 2 (Assessment by list): hazardous for water.
Danger to drinking water if even small quantities leak into soil. Avoid transfer into the environment.
12.5 Results of PBT and vPvB assessment:
PBT: Not applicable.
vPvB: Not applicable.
12.6 Other adverse effects: No further relevant information available.

SECTION 13: Disposal considerations
13.1 Waste treatment methods:
Recommendation:
Hand over to disposers of hazardous waste. Must be specially treated under adherence to official regulations. Consult state, local or national regulations for proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations. Recommended cleaning agent: Water, if necessary with cleaning agent.

SECTION 14: Transport information
UN-Number:
ADR, IMDG, IATA: UN1214
### SECTION 15: Regulatory information

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

**Australian Inventory of Chemical Substances** Substance is listed.

**Standard for the Uniform Scheduling of Drugs and Poisons** Substance is not listed.

**National regulations**

- **Information about limitation of use:** Employment restrictions concerning young persons must be observed.
- For use only by technically qualified individuals.
- **Classification according to VbF:** B

**Water hazard class:** Water hazard class 2 (Assessment by list): hazardous for water.

- **ELINCS (European List of Notified Chemical Substances)** Substance is not listed.

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.** Substance is not listed.

**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.** Substance is not listed.

**Annex XIV of the REACH Regulations (requiring Authorisation for use)** Substance is not listed.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:** Global Marketing Department

**Abbreviations and acronyms:**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VbF: Verordnung über brennbare Flüssigkeiten, Österreich (Ordinance on the storage of combustible liquids, Austria)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- vPvB: very Persistent and very Bioaccumulative
- ACGIH: American Conference of Governmental Industrial Hygienists (USA)
- OSHA: Occupational Safety and Health Administration (USA)
- NTP: National Toxicology Program (USA)
- IARC: International Agency for Research on Cancer
- EPA: Environmental Protection Agency (USA)