Material Safety Data Sheet
Isobutyl methacrylate

1 Identification of the substance and of the company/undertaking

1.1 Product identifier:
Identification on the label/Trade name: Isobutyl methacrylate
Additional identification: 2-Propenoic acid, 2-methyl-, 2-methylpropyl ester
Identification of the product: CAS# 97-86-9; EC# 202-613-0

1.2 Relevant identified uses of the substance and uses advised against:
1.2.1 Identified uses:
Use as an organic synthesis monomer for resin, plastic, coating, printing ink, adhesive, lubricant additive, dental materials, fiber processing agent, paper coating agent.

1.2.2 Uses advised against:
Not available.

1.3 Details of the supplier of the safety data sheet:
Supplier(Manufacturer): FuShun AnXin Chemical CO.,LTD
Address: Science & Technology Town, FuShun Economy Development Region, LiaoNing, China
Contact person(E-mail): admin@anxinchem.com.cn
Telephone: +86-24-56706868
Fax: +86-24-56706808

1.4 Emergency telephone Number:
+86-24-56706860
Available outside office hours? YES ☑ NO

2 Hazards Identification

2.1 Classification of the substance
The substance is classified as following according to GHS:

<table>
<thead>
<tr>
<th>GHS</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class</td>
<td></td>
</tr>
<tr>
<td>Flammable liquid</td>
<td>Category 3</td>
</tr>
<tr>
<td>skin corrosion/irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Skin sensitisation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Specific target organ toxicity after single exposure</td>
<td>Category 3</td>
</tr>
<tr>
<td>Hazardous to the aquatic environment</td>
<td>Acute hazard category 1</td>
</tr>
</tbody>
</table>

2.2 label elements
Hazard Pictograms:

Signal Word(S): Warning
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.
H400: Very toxic to aquatic life.

Precautionary Statement: P210: Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P233: Keep container tightly closed.
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Precautionary Statement

P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/lighting/equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P261: Avoid breathing dust/tume/gas/mist/vapours/spray.
P264: Wash hands thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302 + P352: IF ON SKIN: wash with plenty of soap and water.
P303 + P361 + P353: IF ON SKIN (or hair): remove/take off immediately all contaminated clothing, rinse skin with water/shower.
P304 + P340: IF INHALED: remove victim to fresh air and keep at rest in a position 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.
P312: Call a POISON CENTER or doctor/physician if you feel unwell.
P322 + P313: If skin irritation occurs: get medical advice/attention.
P333 + P313: If skin irritation or rash occurs: get medical advice/attention.
P337 + P313: If eye irritation persists: get medical advice/attention.
P362: Take off contaminated clothing and wash before reuse.
P363: Wash contaminated clothing before reuse.
P370 + P378: In case of fire: use carbon dioxide, dry extinguishing media, foam for extinction.
P391: Collect spillage.
P403 + P233: Store in a well-ventilated place, keep container tightly closed.
P403 + P235: Store in a well-ventilated place. Keep cool.
P405: Store locked up.
P501: Dispose of contents/container in according with local regulation.

Composition/information on ingredients

Substance/Mixture: Substance

Ingredient(s):

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isobutyl methacrylate</td>
<td>97-86-9</td>
<td>202-613-0</td>
<td>≥99.50% (w/w)</td>
</tr>
</tbody>
</table>

First aid measures

4.1 Description of first aid measures:
Remove soiled, soaked clothing immediately. Medical treatment is necessary if symptoms occur which are obviously caused by skin or eye contact with the product or by inhalation of its vapours.

4.1.1 In case of inhalation:
Move subject to fresh air and keep him calm. See a physician.

4.1.2 In case of skin contact:
If skin irritation occurs consult a physician. Wash off immediately with soap and water.

4.1.3 In case of eyes contact:
Flush eyes thoroughly with a large amount of water and consult a physician.

4.1.4 In case of ingestion:
Do not induce vomiting. Contact a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed
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Section 5  Fire-Fighting measures

5.1 Extinguishing media:

Suitable extinguishing media: carbon dioxide, dry extinguishing media, foam.
Unsuitable extinguishing media: water.

5.2 Special hazards arising from the substance or mixture

N/A

5.3 Advice for fire-fighters:

Wear self-contained breathing apparatus.

Section 6  Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Take care for adequate ventilation. Use personal protective clothing. Keep away sources of ignition. Use breathing apparatus if exposed to vapours/dust/mist/aerosol.

6.2 Environmental Precautions:

Prevent product from getting into drains/surface water/groundwater.

6.3 Methods for Containment and Cleaning up:

Larger quantities: Remove mechanically (by pumping). Use explosion-proof equipment!
Smaller quantities and/or residues: Contain with absorbent material (e.g. sand, diatomaceous earth, acid absorbent, universal absorbent or sawdust). Dispose of contaminated material in accordance with regulations.

6.4 Additional information:

N/A

Section 7  Handling and storage

7.1 Protective for safe handling:

Technical measures: No specific recommendations.
Local and general ventilation: Provide adequate ventilation.
Precautions: Practice good housekeeping. Avoid breathing excessive vapors. Avoid contact with skin and eyes. Wash thoroughly after handling.
Safe handling advice: Do not get this material in contact with eyes. Use personal protection recommended in Section 8 of the SDS.

7.2 Storage:

Technical measures: No specific recommendations.
Suitable storage conditions: Keep only in the original container at a temperature not exceeding 30 °C. Fill the container by approximately 90 % only as oxygen (air) is required for stabilisation. Protect from light. Can polymerize with intense heat release.
Incompatible materials: Not available.
Safe packaging materials: Not available.

Section 8  Exposure control/personal protection

8.1 Control parameters:

8.1.1 Occupational exposure limits: N/A
8.1.2 Appropriate engineering controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

8.2 Personal protection:

Eye/face protection: Tightly fitting goggles.
Section 9  Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance: Liquid
- Colour: Colourless
- Odour: Esterlike
- Odour threshold: Not available
- pH: Not available
- Melting point/range (°C): -37°C at 1013 hPa
- Boiling point/range (°C): 155°C at 1013 hPa
- Flash point (°C): 43°C at 1013 hPa
- Evaporation rate: Not available
- Flammability (solid, gas): Not available
- Ignition temperature (°C): Not available
- Upper/lower flammability/explosive limits: Not available
- Vapour pressure: 4mbar at 20°C
- Vapour density: Not available
- Relative Density(25°C): 0.888g/cm³ at 20°C
- Bulk density (kg/m³): Not available
- Water solubility (g/l) at 20°C: 0.2% at 20°C
- n-Octanol/Water (log Po/w): 2.95 at 20°C
- Auto-ignition temperature: 385°C at 1013 hPa
- Decomposition temperature: Not available
- Viscosity: 0.9 mPa/sec at 20°C
- Explosive properties: Non explosive
- Oxidising properties: Non oxidising

9.2. Other information:
- Fat solubility(solvent– oil to be specified) etc: Not available
- Surface tension: Not available
- Dissociation constant in water(pKa): Not available
- Oxidation-reduction Potential: Not available
- Molecular Formula: C₈H₁₄O₂
- Molecular Weight: 142.2

Section 10  Stability and reactivity

10.1 Reactivity:
Stable under normal temperature conditions.

10.2 Possibility of hazardous reactions:
Polymerization with heat evolution may occur in the presence of radical forming substances (e.g. peroxides), reducing substances, and/or heavy metal ions.

10.3 Conditions to avoid:
The product is normally supplied in a stabilized form. If the permissible storage period and/or storage temperature is exceeded, the product may polymerize with heat evolution.

10.4 Incompatible materials:
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Strong oxidizing agents.

10.5 Hazardous decomposition products:
None when used as directed.

Section 11  Toxicological information

11.1 Toxicokinetics, metabolism and distribution
Non-human toxicological data: Not available

11.2 Information on toxicological effects
Acute toxicity:
- LD50(Oral, Rat): 9590 mg/kg bw
- LD50(Dermal, Guinea pig): >17760 mg/kg bw
- LT50(Inhalation, Rat): 29.74 mg/L air

Skin corrosion/irritation: Irritating

Serious eye damage/irritation: irritating.

Respiratory or skin sensitization: Sensitizing.

Germ cell mutagenicity: Negative.

Carcinogenicity: Negative.

Reproductive toxicity: Negative.

STOT- single exposure: May cause respiratory irritation.

STOT-repeated exposure: Not classified

Aspiration hazard: Not classified

Section 12  Ecological information

Toxicity:

<table>
<thead>
<tr>
<th>Acute toxicity</th>
<th>Time</th>
<th>Species</th>
<th>Method</th>
<th>Evaluation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 20 mg/L</td>
<td>96h</td>
<td>Fish</td>
<td>OECD 203</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>EC50 &gt;29 mg/L</td>
<td>48h</td>
<td>Daphnia</td>
<td>OECD 202</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>EC50 0.29 mg/L</td>
<td>72h</td>
<td>Algae</td>
<td>OECD 201</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Persistence and degradability: Readily biodegradable.

Bioaccumulative potential: No bioaccumulation.

Mobility in soil: N/A

Section 13  Disposal considerations

13.1 Waste treatment methods
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

13.2 Product / Packaging disposal:
Product
Waste is hazardous. It must be disposed of in accordance with the regulations after consultation of the competent local authorities and the disposal company in a suitable and licensed facility.

Uncleaned packaging
Contaminated packaging should be emptied optimally and after appropriate professional cleansing may be taken for reuse. Packaging that cannot be cleaned should be disposed of professionally. Uncontaminated packaging may be taken for recycling.
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Section 14 Transport information

<table>
<thead>
<tr>
<th>Land transport (ADR/RID)</th>
<th>Sea transport (IMDG)</th>
<th>Air transport (ICAO/IATA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-Number:</td>
<td>2283</td>
<td>2283</td>
</tr>
<tr>
<td>UN Proper shipping name:</td>
<td>ISOBUTYL METHACRYLATE, STABILIZED</td>
<td>ISOBUTYL METHACRYLATE, STABILIZED</td>
</tr>
<tr>
<td>Transport hazard Class:</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Packaging group:</td>
<td>III</td>
<td>III</td>
</tr>
<tr>
<td>Environmental hazards:</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Special precautions for user:</td>
<td>See section 2.2</td>
<td>See section 2.2</td>
</tr>
</tbody>
</table>

Section 15 Regulation information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Whether be recorded by other nations chemicals directory:
EINECS: Listed
DSL/NDSL: Listed
TSCA: Listed
KECI: Listed
IECSC: Listed
ENCS: Listed
PICCS: Listed
AICS: Listed

15.2 Downstream users precautions:
Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

Section 16 Other information

16.1 Indication of changes
Version 1.3 Amended by GHS rev 4

16.2 Training instructions:
Not applicable.

16.3 Further information:
This information is based upon the present state of our knowledge. This MSDS has been compiled and is solely intended for this product.

16.4 Notice to reader:
Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment 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 Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.