Isopentane (cas 78-78-4) MSDS

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product name : 2-Methylbutane
Product Number : 154911
Brand : Anonymous-Anonymous
Index-No. : 601-006-00-1
CAS-No. : 78-78-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]
- Flammable liquids (Category 1)
- Aspiration hazard (Category 1)
- Specific target organ toxicity - single exposure (Category 3)
- Chronic aquatic toxicity (Category 2)

Classification according to EU Directives 67/548/EEC or 1999/45/EC
- Extremely flammable. Harmful: may cause lung damage if swallowed. Repeated exposure may cause skin dryness or cracking. Vapours may cause drowsiness and dizziness. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram:
- Signal word: Danger
- Hazard statement(s):
  - H224: Extremely flammable liquid and vapour.
  - H304: May be fatal if swallowed and enters airways.
  - H336: May cause drowsiness or dizziness.
  - H411: Toxic to aquatic life with long lasting effects.

Precautionary statement(s):
- P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P261: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
- P273: Avoid release to the environment.
- P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
- P311: Do NOT induce vomiting.

Supplemental Hazard information (EU)

EUX066: Repeated exposure may cause skin dryness or cracking.


Hazard symbol(s):

R-phrase(s)
- R12: Extremely flammable.
- R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R65: Harmful: may cause lung damage if swallowed.
- R66: Repeated exposure may cause skin dryness or cracking.
- R67: Vapours may cause drowsiness and dizziness.

S-phrase(s)
- S9: Keep container in a well-ventilated place.
- S16: Keep away from sources of ignition - No smoking.
- S29: Do not empty into drains.
- S33: Take precautionary measures against static discharges.
2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms: Isopentane

Formula: C5H12

Molecular Weight: 72.15 g/mol

Component | Concentration
---|---
Isopentane | 78-78-4
EC-No. | 201-142-8
Index-No. | 601-006-00-1

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides
Nature of decomposition products not known.
Carbon oxides

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapours can accumulate in low areas.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections

For disposal see section 13.
7. **HANDLING AND STORAGE**

7.1 **Precautions for safe handling**
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

7.2 **Conditions for safe storage, including any incompatibilities**
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Refrigerate before opening. Handle and open container with care.

7.3 **Specific end uses**
no data available

8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

8.1 **Control parameters**

8.2 **Exposure controls**

**Appropriate engineering controls**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment**

**Eye/face protection**
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Immersion protection**
Material: Nitrile rubber
Minimum layer thickness: 0,4 mm
Break through time: > 480 min
Material tested: Camatril? (Anonymous Z677442, Size M)

**Splash protection**
Material: Nitrile rubber
Minimum layer thickness: 0,4 mm
Break through time: > 30 min
Material tested: Camatril? (Anonymous Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de,
test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) 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).

9. **PHYSICAL AND CHEMICAL PROPERTIES**

9.1 **Information on basic physical and chemical properties**
a) **Appearance** Form: liquid, clear
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<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>pH</td>
<td>No data available</td>
</tr>
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<td>Melting point/freezing point</td>
<td>No data available</td>
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<tr>
<td>Initial boiling point and boiling</td>
<td>30 °C - lit.</td>
</tr>
<tr>
<td>range</td>
<td></td>
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<tr>
<td>Flash point</td>
<td>-51 °C - closed cup</td>
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<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive</td>
<td>Upper explosion limit: 8.3 % (V)</td>
</tr>
<tr>
<td>limits</td>
<td>Lower explosion limit: 1.4 % (V)</td>
</tr>
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<td>Vapour pressure</td>
<td>769.92 hPa at 20 °C</td>
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<tr>
<td>Vapour density</td>
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</tr>
<tr>
<td>Relative density</td>
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<tr>
<td>Water solubility</td>
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</tr>
<tr>
<td>Partition coefficient: n-octanol/</td>
<td>No data available</td>
</tr>
<tr>
<td>water</td>
<td></td>
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<tr>
<td>Autoignition temperature</td>
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<tr>
<td>Decomposition temperature</td>
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<tr>
<td>Viscosity</td>
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<tr>
<td>Explosive properties</td>
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<tr>
<td>Oxidizing properties</td>
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<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
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</tbody>
</table>

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
No data available

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.

10.5 Incompatible materials
Oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available
Inhalation: Irritating to respiratory system.

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data 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
no data available

Specific target organ toxicity - single exposure
May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
May be fatal if swallowed and enters airways.

Potential health effects

Inhalation
May be harmful if inhaled. May cause respiratory tract irritation. Vapours may cause drowsiness and dizziness.

Ingestion
May be harmful if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage.

Skin
May be harmful if absorbed through skin. May cause skin irritation.

Eyes
May cause eye irritation.

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

Additional Information
RTECS: EK4430000

12. ECOLOGICAL INFORMATION

12.1 Toxicity
Toxicity to fish
LC50 - Pimephales promelas (fathead minnow) - 12,8 mg/l - 96 h
Remarks: The preceding data, or interpretation of data, was determined using Quantitative Structure Activity Relationship (QSAR) modeling.

Toxicity to daphnia and other aquatic invertebrates
EC50 - Daphnia magna (Water flea) - 2,3 mg/l - 48 h

12.2 Persistence and degradability
Biodegradability Result: 71,43 % - Readily biodegradable.

12.3 Bioaccumulative potential
Does not significantly accumulate in organisms.

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
no data available

12.6 Other adverse effects
Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number
ADR/RID: 1265
IMDG: 1265
IATA: 1265

14.2 UN proper shipping name
ADR/RID: PENTANES
IMDG: PENTANES
IATA: Pentanes

14.3 Transport hazard class(es)
ADR/RID: 3
IMDG: 3
IATA: 3
14.4 Packaging group
ADR/RID: I
IMDG: I
IATA: I

14.5 Environmental hazards
ADR/RID: yes
IMDG Marine pollutant: yes
IATA: no

14.6 Special precautions for user
no data available

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

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available

15.2 Chemical Safety Assessment
no data available

16. OTHER INFORMATION
Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information this document is based on the resent state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. guidechem shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.