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

1.1 Product identifier

Trade name

CARE 40

Substance name  propane
REACH registration no.  01-2119486944-21

Identification numbers

CAS no.  74-98-6
EC no.  200-827-9
Index no.  601-003-00-5

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

Relevant identified uses of the substance or mixture
Refrigerant for professional use in ultra-low temperature freezers

Uses advised against
No data available.

1.3 Details of the supplier of the safety data sheet

Address
Eppendorf AG
Barkhausenweg 1
D-22339 Hamburg

Telephone no.  +49 40 53801-0

Information provided by / telephone
Eppendorf Application-Hotline
Tel.: +49 1803 66 67 89
Fax: +49 4053 99 01 25
email: support@eppendorf.com
Advice on Safety Data Sheet
sdb_info@umco.de

1.4 Emergency telephone number
For medical advice (in German and English):
+49 (0)551 192 40 (Giftinformationszentrum Nord)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008 (CLP)
Flam. Gas 1; H220
Press. Gas liq.; H280

Classification information
This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:
Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP
Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3 and 4 of Annex I to CLP.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP Regulation)

Product identifier
74-98-6 (propane)
Hazard pictograms

GHS02

GHS04

Signal word
Danger

Hazard statements
H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.

Precautionary statements
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 Eliminate all ignition sources if safe to do so.
P403 Store in a well-ventilated place.

2.3 Other hazards
Vapours can form an explosive mixture with air.

PBT assessment
The product is not considered to be a PBT.

vPvB assessment
The product is not considered to be a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical characterization
Substance name propane
Formula C3 H8
Molecular weight 44.09

Identification numbers
CAS no. 74-98-6
EC no. 200-827-9
Index no. 601-003-00-5

3.2 Mixtures
Not applicable. The product is not a mixture.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information
If unconscious place in recovery position and seek medical advice.

After inhalation
Remove to fresh air, keep patient warm and at rest. Take medical treatment.

After skin contact
Do not attempt to remove any clothing that is frozen onto the skin. In case of frostbite: warm up frostbitten area by immersing the affected area in warm (but not hot) water. Remove contaminated clothing immediately and dispose of safely. Seek medical attention.

After eye contact
Remove contact lenses. Rinse eye thoroughly under running water keeping eyelids wide open and protecting the unaffected eye (at least 10 to 15 minutes). Seek medical assistance.

After ingestion
Seek medical advice.
4.2 **Most important symptoms and effects, both acute and delayed**
No data available.

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

### SECTION 5: Firefighting measures

5.1 **Extinguishing media**
- **Suitable extinguishing media**
  - Foam; Water mist; Extinguishing powder; Carbon dioxide
- **Unsuitable extinguishing media**
  - High power water jet

5.2 **Special hazards arising from the substance or mixture**
In case of fires, hazardous combustion gases are formed: Carbon monoxide (CO). In case of fire: danger of pressure build up, which could result in container rupture.

5.3 **Advice for firefighters**
Wear protective clothing. Use self-contained breathing apparatus. Cool endangered containers with water spray jet.

### SECTION 6: Accidental release measures

6.1 **Personal precautions, protective equipment and emergency procedures**
- **For non-emergency personnel**
  - Close leaks. Keep away sources of ignition. Refer to protective measures listed in sections 7 and 8.
- **For emergency responders**
  - No data available. Personal protective equipment (PPE) - see Section 8.

6.2 **Environmental precautions**
Do not discharge into the drains/surface waters/groundwater.

6.3 **Methods and material for containment and cleaning up**
Allow to evaporate.

6.4 **Reference to other sections**
No data available.

### SECTION 7: Handling and storage

7.1 **Precautions for safe handling**
- **Advice on safe handling**
  - Ensure adequate ventilation. Do not breathe steams or mist of the product. In case of accidental release: danger due to low temperature of the liquid product.
- **General protective and hygiene measures**
  - Do not eat or drink during work - no smoking. Avoid prolonged and/or repeated contact with skin.
- **Advice on protection against fire and explosion**
  - Keep away from ignition sources and provide for good ventilation. Take precautionary measures against static charges. No sparking tools should be used.

7.2 **Conditions for safe storage, including any incompatibilities**
- **Technical measures and storage conditions**
  - Protect from direct sunlight. Protect from temperatures over 50°C.
- **Requirements for storage rooms and vessels**
  - Keep container tightly closed. Keep only in the original container (with safety valve).
- **Advice on storage assembly**
  - Do not store together with oxidizing agents.
7.3 **Specific end use(s)**
No data available.

**SECTION 8: Exposure controls/personal protection**

### 8.1 Control parameters

#### Occupational exposure limit values

<table>
<thead>
<tr>
<th>No</th>
<th>Substance name</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>propane</td>
<td>74-98-6</td>
<td>200-827-9</td>
</tr>
</tbody>
</table>

#### List of approved workplace exposure limits (WELs) / EH40

#### Propane

### 8.2 Exposure controls

**Appropriate engineering controls**
Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL (=Occupational Exposure Limit), suitable respiratory protection must be worn.

**Personal protective equipment**

**Respiratory protection**
If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn.
Respiratory filter (gas) : AX

**Eye / face protection**
Tightly fitting safety glasses (EN 166).

**Hand protection**
Sufficient protection is given wearing suitable protective gloves checked according to i.e. EN 374, in the event of risk of skin contact with the product. Before use, the protective gloves should be tested in any case for its specific workstation suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer’s instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves.

**Other**
Normal chemical work clothing.

**Environmental exposure controls**
No data available.

**SECTION 9: Physical and chemical properties**

### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form/Colour</strong></td>
<td>liquified gas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>colourless</td>
<td></td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>odourless</td>
<td></td>
</tr>
<tr>
<td><strong>Odour threshold</strong></td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td><strong>pH value</strong></td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td><strong>Boiling point / boiling range</strong></td>
<td>-42.1</td>
<td>°C</td>
</tr>
<tr>
<td><strong>Melting point / melting range</strong></td>
<td>-187.6</td>
<td>°C</td>
</tr>
</tbody>
</table>
Decomposition point / decomposition range

<table>
<thead>
<tr>
<th>Value</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>650</td>
<td></td>
</tr>
</tbody>
</table>

Flash point

Not applicable

Auto-ignition temperature

<table>
<thead>
<tr>
<th>Value</th>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>472</td>
<td></td>
</tr>
</tbody>
</table>

Oxidising properties

No data available

Explosive properties

No data available

Flammability (solid, gas)

No data available

Lower flammability or explosive limits

<table>
<thead>
<tr>
<th>Value</th>
<th>% vol</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.7</td>
<td></td>
</tr>
</tbody>
</table>

Upper flammability or explosive limits

<table>
<thead>
<tr>
<th>Value</th>
<th>% vol</th>
</tr>
</thead>
<tbody>
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<td>12.5</td>
<td></td>
</tr>
</tbody>
</table>

Vapour pressure

<table>
<thead>
<tr>
<th>Value</th>
<th>kPa</th>
</tr>
</thead>
<tbody>
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<td>933.25</td>
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Reference temperature

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<td>25</td>
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Vapour density

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<tr>
<th>Value</th>
<th>°C</th>
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<tbody>
<tr>
<td>1.56</td>
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</table>

Reference temperature

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<thead>
<tr>
<th>°C</th>
</tr>
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<tbody>
<tr>
<td>0</td>
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</table>

Evaporation rate

No data available

Relative density

<table>
<thead>
<tr>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5853</td>
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</tbody>
</table>

Density

No data available

Solubility in water

<table>
<thead>
<tr>
<th>Value</th>
<th>mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>75</td>
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</tbody>
</table>

Solubility(ies)

No data available

Partition coefficient: n-octanol/water

<table>
<thead>
<tr>
<th>No</th>
<th>Substance name</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>propane</td>
<td>74-98-5</td>
<td>200-827-9</td>
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</tbody>
</table>

log Pow

<table>
<thead>
<tr>
<th>Source</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>2.36</td>
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</tbody>
</table>

Viscosity

<table>
<thead>
<tr>
<th>Value</th>
<th>mPa*s</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.08</td>
<td></td>
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</table>

Reference temperature

<table>
<thead>
<tr>
<th>°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.9</td>
</tr>
</tbody>
</table>

9.2 Other information

Other information

Critical Temp.: 96.7 °C
SECTION 10: Stability and reactivity

10.1 Reactivity
No data available.

10.2 Chemical stability
Stable under normal conditions of use.

10.3 Possibility of hazardous reactions
Vapours may form an explosive mixture with air.

10.4 Conditions to avoid
Heat, naked flames or other ignition sources, electrostatic charge and discharge, formation of vapours/aerosols.

10.5 Incompatible materials
Oxidizing agents; Formation of explosive gas/air mixtures.

10.6 Hazardous decomposition products
None, if handled according to intended use.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

<table>
<thead>
<tr>
<th>Acute oral toxicity</th>
<th>No data available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute dermal toxicity</td>
<td>No data available</td>
</tr>
<tr>
<td>Acute inhalational toxicity</td>
<td>No data available</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>No data available</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>No data available</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>No data available</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>No data available</td>
</tr>
<tr>
<td>Reproduction toxicity</td>
<td>No data available</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>No data available</td>
</tr>
<tr>
<td>STOT-single exposure</td>
<td>No data available</td>
</tr>
<tr>
<td>STOT-repeated exposure</td>
<td>No data available</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>No data available</td>
</tr>
</tbody>
</table>
SECTION 12: Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Toxicity to fish (acute)</th>
<th>Substance name</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>propane</td>
<td>74-98-6</td>
<td>200-827-9</td>
</tr>
<tr>
<td>LC50</td>
<td>49.9 mg/l</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duration of exposure</td>
<td>96 h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>fish</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>Manufacturer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Toxicity to fish (chronic) No data available

Toxicity to Daphnia (acute)

<table>
<thead>
<tr>
<th>Substance name</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>propane</td>
<td>74-98-6</td>
<td>200-827-9</td>
</tr>
<tr>
<td>EC50</td>
<td>27.1 mg/l</td>
<td></td>
</tr>
<tr>
<td>Duration of exposure</td>
<td>48 h</td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Daphnia magna</td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>Manufacturer</td>
<td></td>
</tr>
</tbody>
</table>

Toxicity to Daphnia (chronic) No data available

Toxicity to algae (acute)

<table>
<thead>
<tr>
<th>Substance name</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>propane</td>
<td>74-98-6</td>
<td>200-827-9</td>
</tr>
<tr>
<td>EC50</td>
<td>11.9 mg/l</td>
<td></td>
</tr>
<tr>
<td>Duration of exposure</td>
<td>72 h</td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Algae</td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>Manufacturer</td>
<td></td>
</tr>
</tbody>
</table>

Toxicity to algae (chronic) No data available

Bacteria toxicity No data available

12.2 Persistence and degradability No data available.

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Substance name</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>propane</td>
<td>74-98-6</td>
<td>200-827-9</td>
</tr>
<tr>
<td>log Pow</td>
<td>2.36</td>
<td></td>
</tr>
<tr>
<td>Source</td>
<td>Manufacturer</td>
<td></td>
</tr>
</tbody>
</table>

12.4 Mobility in soil No data available.

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment

- PBT assessment: The product is not considered to be a PBT.
- vPvB assessment: The product is not considered to be a vPvB.

12.6 Other adverse effects No data available.

12.7 Other information

- Do not allow to enter soil, waterways or waste water canal.
SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Waste code  16 05 04*  gases in pressure containers (including halons) containing hazardous substances

The listed waste code numbers, according to the European Waste Catalogue, are to be understood as a recommendation. A final decision must be made in agreement with the regional waste disposal company. Dispose of in accordance with local regulation.

Refer to the EIGA code of practice (Doc.30 "Disposal of Gases"; http://www.eiga.org).

Packaging

Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.

SECTION 14: Transport information

14.1 Transport ADR/RID/ADN

Class  2
Classification code  2F
Hazard identification no.  23
UN number  UN1978
Technical name  PROPANE
Tunnel restriction code  B/D
Label  2.1

14.2 Transport IMDG

Class  2.1
UN number  UN1978
Proper shipping name  PROPANE
EmS  F-D+S-U
Label  2.1

14.3 Transport ICAO-TI / IATA

Class  2.1
UN number  UN1978
Proper shipping name  Propane
Label  2.1
Remarks  Passenger aircraft: forbidden.

14.4 Other information

No data available.

14.5 Environmental hazards

Information on environmental hazards, if relevant, please see 14.1 - 14.3.

14.6 Special precautions for user

No data available.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not relevant
SECTION 15: Regulatory information

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

EU regulations

<table>
<thead>
<tr>
<th>Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In accordance with the Reach regulation (EC) 1907/2006, the product does not contain any substances that are</td>
</tr>
<tr>
<td>considered as subject to listing in annex XIV, inventory of substances requiring authorisation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REACH candidate list of substances of very high concern (SVHC) for authorisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>In accordance with article 57 and article 59 of the Reach regulation (EC) 1907/2006, this substance is not considered</td>
</tr>
<tr>
<td>as subject to listing in annex XIV, inventory of substances requiring authorisation (&quot;Authorization list&quot;).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, PREPARATIONS AND ARTICLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>The product is considered being subject to REACH regulation (EC) 1907/2006 annexe XVII. No 40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>This product is subject to Part I of Annex I, risk category: P2.</td>
</tr>
</tbody>
</table>

15.2 Chemical safety assessment

For this substance a chemical safety assessment has been carried out.

SECTION 16: Other information

Sources of key data used to compile the data sheet:

- National Threshold Limit Values of the corresponding countries as amended in each case.
- Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding chapter.

Department issuing safety data sheet

UMCO Umwelt Consult GmbH
Georg-Wilhelm-Str. 183, D-21107 Hamburg
Tel.: +49 40 / 79 02 36 300 Fax: +49 40 / 79 02 36 357 e-mail: umco@umco.de

This information is based on our present knowledge and experience.
The safety data sheet describes products with a view to safety requirements.
It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

Alterations/supplements:
Alterations to the previous edition are marked in the left-hand margin.

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