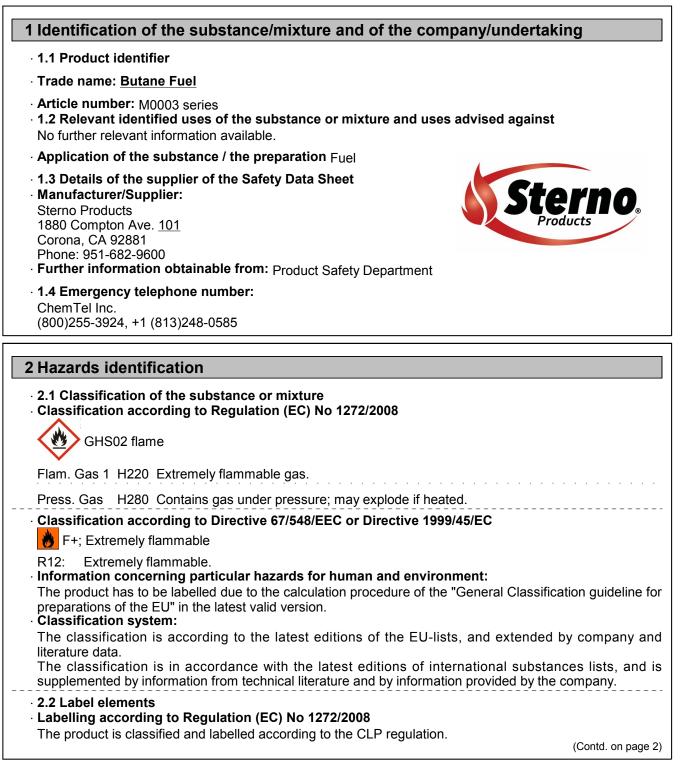
GHS

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| Trade name: Butane Fuel   |                    |
|---|--------------------|
| · Hazard pictograms   | (Contd. of page 1) |
|   |                    |
|   |                    |
| GHS02   |                    |
| · Signal word Danger  |                    |
| Hazard statements   |                    |
| H220 Extremely flammable gas.   |                    |
| H280 Contains gas under pressure; may explode if heated.  |                    |
| Precautionary statements<br>P101 If medical advice is needed, have product container or label at hand.            |                    |
| P101 If medical advice is needed, have product container or label at hand.<br>P102 Keep out of reach of children. |                    |
| P103 Read label before use.   |                    |
| P210 Keep away from heat/sparks/open flames/hot surfaces 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.   |                    |
| P410+P403 Protect from sunlight. Store in a well-ventilated place.  |                    |
| P403 Store in a well-ventilated place.<br>• Additional information: N/A   |                    |
| · Hazard description:   |                    |
| · WHMIS-symbols:  |                    |
| A - Compressed gas  |                    |
| B1 - Flammable gas  |                    |
| $\frown \frown$   |                    |
|   |                    |
|   |                    |
| NFPA ratings (scale 0 - 4)  |                    |
| Health = 0  |                    |
| Fire = 4  |                    |
| Reactivity = 0  |                    |
| · HMIS-ratings (scale 0 - 4)  |                    |
| HEALTH I Health = 0   |                    |
| FIRE $4$ Fire = 4   |                    |
| Reactivity = 0  |                    |
| · HMIS Long Term Health Hazard Substances   |                    |
| None of the ingredients is listed.  |                    |
| · 2.3 Other hazards   |                    |
| <ul> <li>Results of PBT and vPvB assessment</li> </ul>  |                    |
| • <b>PBT:</b> Not applicable.   |                    |
| vPvB: Not applicable.   |                    |
|   | (Contd. on page 3) |

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### 3 Composition/information on ingredients

#### · 3.2 Mixtures

· Description: Mixture of substances listed below with nonhazardous additions.

| <ul> <li>Dangerous components:</li> </ul>                        |                                     |   |         |
|--|-------------------------------------|---|---------|
| CAS: 106-97-8<br>EINECS: 203-448-7<br>Index number: 601-004-00-0 | butane                              | <ul> <li>♦ F+ R12</li> <li>♦ Flam. Gas 1, H220</li> <li>Press. Gas, H280</li> </ul> | 50-100% |
| CAS: 75-28-5<br>EINECS: 200-857-2<br>Index number: 601-004-00-0  | isobutane                           | <ul> <li>♦ F+ R12</li> <li>♦ Flam. Gas 1, H220</li> <li>Press. Gas, H280</li> </ul> | 25-50%  |
| CAS: 74-98-6<br>EINECS: 200-827-9<br>Index number: 601-003-00-5  | propane                             | <ul> <li>♦ F+ R12</li> <li>♦ Flam. Gas 1, H220</li> <li>Press. Gas, H280</li> </ul> | 2,5-10% |
| · Additional information: For                                    | the wording of the listed risk phra | ases refer to section 16.   |         |

### 4 First aid measures

#### · 4.1 Description of first aid measures

- · After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Generally the product does not irritate the skin.

#### · After eye contact:

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· After swallowing: If symptoms persist consult doctor.

- 4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

- 4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

### **5** Firefighting measures

· 5.1 Extinguishing media

· Suitable extinguishing agents:

- CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- · For safety reasons unsuitable extinguishing agents: Water with full jet
- 5.2 Special hazards arising from the substance or mixture No further relevant information available.
- 5.3 Advice for firefighters
- · Protective equipment: No special measures required.
- Additional information Cool endangered receptacles with water spray.

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### 6 Accidental release measures

#### · 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

6.2 Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

• 6.3 Methods and material for containment and cleaning up: 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 disposal information.

### 7 Handling and storage

· 7.1 Precautions for safe handling Open and handle receptacle with care.

Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke. Protect against electrostatic charges.

# • 7.2 Conditions for safe storage, including any incompatibilities

Storage:

- · Requirements to be met by storerooms and receptacles: Store in a cool location.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions:

Store in cool, dry conditions in well sealed receptacles.

Keep container tightly sealed.

Do not seal receptacle gas tight.

Protect from heat and direct sunlight.

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

### 8 Exposure controls/personal protection

· Additional information about design of technical facilities: No further data; see item 7.

|   | 8.1 | Control | parameters |
|---|-----|---------|------------|
| • | 0.1 | CONTROL | parameters |

| · Ingredients v | with limit values that require monitoring at the workplace: |       |
|-----------------|---|-------|
| 106-97-8 but    | tane  |       |
| REL (USA)       | 1900 mg/m³, 800 ppm   |       |
| TLV (USA)       | Varies mg/m <sup>3</sup> , 1000 ppm                         |       |
| EL (Canada)     | Short-term value: 750 ppm<br>Long-term value: 600 ppm       |       |
| EV (Canada)     | 800 ppm   |       |
| 75-28-5 isobi   | utane   |       |
| REL (USA)       | 1900 mg/m³, 800 ppm   |       |
|                 | (Contd. on page   | je 5) |

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|   | (Contd. of page 4)  |
|---|---|
| TLV (USA)   | Varies mg/m <sup>3</sup> , 1000 ppm   |
| EV (Canada)   |   |
| 74-98-6 prop  |   |
| PEL (USA)   | 1800 mg/m³, 1000 ppm  |
| REL (USA)   | 1800 mg/m³, 1000 ppm  |
| TLV (USA)   | Varies mg/m³, 1000 ppm  |
| EL (Canada)   | 1000 ppm  |
| EV (Canada)   | 1,000 ppm   |
| · Additional in   | formation: The lists valid during the making were used as basis.  |
| General prote<br>Respiratory p<br>Protection of<br>The glove ma<br>Due to missi<br>preparation/tt<br>Selection of<br>degradation<br>Material of gl<br>The selection<br>quality and v<br>substances, tt<br>checked prior<br>Penetration t<br>The exact bre<br>be observed.<br>Eye protection | terial has to be impermeable and resistant to the product/ the substance/ the preparation.<br>ng tests no recommendation to the glove material can be given for the product/ the<br>ne chemical mixture.<br>the glove material on consideration of the penetration times, rates of diffusion and the<br><b>oves</b><br>of the suitable gloves does not only depend on the material, but also on further marks of<br>aries from manufacturer to manufacturer. As the product is a preparation of several<br>ne resistance of the glove material can not be calculated in advance and has therefore to be<br>to the application.<br><b>ime of glove material</b><br>ak through time has to be found out by the manufacturer of the protective gloves and has to |
| 9 Physical a  | nd chemical properties  |
| General Infor<br>Appearance:<br>Form:<br>Colour:<br>Odour:<br>Odour thresh  | Compressed liquefied gas<br>Colourless<br>Like rotten eggs (mercaptans)<br>Not determined.  |
| · pH-value:   | Not determined.   |

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|   | (Contd. of page  |
|---|--|
| <ul> <li>Change in condition</li> <li>Melting point/Melting range:</li> <li>Boiling point/Boiling range:</li> </ul> | Undetermined.<br>-11 °C  |
| · Flash point:  | < 0 °C   |
| · Flammability (solid, gaseous):  | Not determined.  |
| · Ignition temperature:   | 365 °C   |
| · Decomposition temperature:  | Not determined.  |
| · Self-igniting:  | Product is not self-igniting.  |
| · Danger of explosion:  | Product is not explosive. However, formation of explosive ai vapour mixtures are possible. |
| Explosion limits:   |  |
| Lower:  | 1,5 Vol %  |
| Upper:  | 8,5 Vol %  |
| · Vapour pressure at 20 °C:   | 3000 hPa   |
| · Density at 20 °C:   | 0,55 g/cm³   |
| Relative density  | Not determined.  |
| · Vapour density  | Not determined.  |
| · Evaporation rate  | Not applicable.  |
| · Solubility in / Miscibility with  |  |
| water:  | Not miscible or difficult to mix.  |
| · Partition coefficient (n-octanol/wa   | ter): Not determined.  |
| · Viscosity:  |  |
| Dynamic:  | Not determined.  |
| Kinematic:  | Not determined.  |
| · Solvent content:  |  |
| Organic solvents:   | 70,0 %   |
| <ul> <li>9.2 Other information</li> </ul>   | No further relevant information available.   |

### 10 Stability and reactivity

10.1 Reactivity

10.2 Chemical stability

Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

• 10.3 Possibility of hazardous reactions No dangerous reactions known.

• **10.4 Conditions to avoid** No further relevant information available.

• 10.5 Incompatible materials: No further relevant information available.

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· 10.6 Hazardous decomposition products: Carbon monoxide

### 11 Toxicological information

- 11.1 Information on toxicological effects
- Acute toxicity:
- Primary irritant effect:
- on the skin: No irritant effect.
- on the eye: No irritating effect.
- · Sensitization: No sensitizing effects known.

### **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: Generally not hazardous for water
- 12.5 Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- **vPvB:** Not applicable.
- 12.6 Other adverse effects No further relevant information available.

### 13 Disposal considerations

#### · 13.1 Waste treatment methods

Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- · Uncleaned packaging:
- Recommendation: Disposal must be made according to official regulations.

| 14 Transport information                         |                                 |
|--|---------------------------------|
| · 14.1 UN-Number                                 |                                 |
| · DOT, ADR, IMDG, IATA                           | UN1075                          |
| <ul> <li>14.2 UN proper shipping name</li> </ul> |                                 |
| DOT, IMDG, IATA                                  | PETROLEUM GASES, LIQUEFIED      |
| ADR  | 1075 PETROLEUM GASES, LIQUEFIED |
|  | (Contd. on page                 |

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|   | (Contd. of pag                          |
|---|---|
| 14.3 Transport hazard class(es)   |   |
| DOT   |   |
|   |   |
| Class   | 2.1                                     |
| Label   | 2.1                                     |
| ADR   |   |
|   |   |
| Class   | 2 2F Gases.                             |
| Label   | 2.1                                     |
| IMDG, IATA  |   |
|   |   |
| Class   | 2.1                                     |
| Label   | 2.1                                     |
| • 14.4 Packing group<br>• DOT, ADR, IMDG, IATA                          | N/A                                     |
| 14.5 Environmental hazards:<br>Marine pollutant:                        | No                                      |
| 14.6 Special precautions for user                                       | Warning: Gases.                         |
| Danger code (Kemler):<br>EMS Number:                                    | 20                                      |
|   | <u>F-D</u> ,S-U                         |
| 14.7 Transport in bulk according to Ann<br>MARPOL73/78 and the IBC Code | ex II of Not applicable.                |
| Transport/Additional information:                                       |   |
| ADR   |   |
| Limited quantities (LQ)   | 0                                       |
| Transport category<br>Tunnel restriction code                           | 2                                       |
|   | B/D                                     |
| UN "Model Regulation":  | UN1075, PETROLEUM GASES, LIQUEFIED, 2.1 |

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# 15 Regulatory information

| <ul> <li>United Stat</li> <li>SARA</li> </ul>                               |  |
|---|--|
| Section 35  | 5 (extremely hazardous substances):  |
| None of the   | ingredients is listed.   |
| Section 313   | 3 (Specific toxic chemical listings):  |
| None of the   | ingredients is listed.   |
| · TSCA (Tox   | ic Substances Control Act):  |
| All ingredier   | nts are listed.  |
| Note: There<br>container m<br>of California<br>Increased ri<br>chemical for | <b>n 65 (California):</b><br>e are no Proposition 65 substances listed in this chemical formulation. However, the may contain trace amounts (less than 0.1% by weight) of lead, a substance known to the Sa to cause reproductive toxicity (males and females), developmental toxicity, and/or car sk of lead toxicity is not anticipated with normal use of this product. Notes below reference rmulation only. |
| · Chemicals   | known to cause cancer:   |
| None of the   | ingredients is listed.   |
| - Chemicals   | known to cause reproductive toxicity for females:  |
| None of the   | ingredients is listed.   |
| - Chemicals   | known to cause reproductive toxicity for males:  |
| None of the   | ingredients is listed.   |
| - Chemicals   | known to cause developmental toxicity:   |
| None of the   | ingredients is listed.   |
| -   | nic Categories   |
| •   | onmental Protection Agency)  |
|   | ingredients is listed.   |
| •   | national Agency for Research on Cancer)  |
| None of the   | ingredients is listed.   |
| · TLV (Thres  | hold Limit Value established by ACGIH)   |
| None of the   | ingredients is listed.   |
| · NIOSH-Ca  | (National Institute for Occupational Safety and Health)  |
| None of the   | ingredients is listed.   |
| · OSHA-Ca (   | Occupational Safety & Health Administration)   |
|   | ingredients is listed.   |
| - Canada  |  |
|   | Domestic Substances List (DSL)   |
| All ingredier   | nts are listed.  |

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#### Canadian Ingredient Disclosure list (limit 0.1%)

None of the ingredients is listed.

#### Canadian Ingredient Disclosure list (limit 1%)

106-97-8 butane

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

#### **16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

#### · Relevant phrases

H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

R12 Extremely flammable.

# 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)

International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association GHS: Globally Harmonized System of Classification and Labelling of Chemicals ACGIH: American Conference of Governmental Industrial Hygienists NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) WHMIS: Workplace Hazardous Materials Information System (Canada) Sources SDS Prepared by: ChemTel Inc. 1305 North Florida Avenue Tampa, Florida USA 33602-2902 Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573 Website: www.chemtelinc.com