

## Safety data sheet

### according to 1907/2006/EC, Article 31

Printing date: 27.03.2014

Version: 1. 0

Revision: 27.03.2014

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

- **1.1 Product identifier**
- **Trade name:** **Fuelcell**
- **1.2 Relevant identified uses of the substance or mixture and uses advised against:**
- **Uses advised against:** -
- **Application of the substance / the preparation:** Fuel cell for cordless nailers
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier/Manufacturer:**  
Sympafix BV  
Fluorietweg 25E  
1812RR Alkmaar  
Netherland  
☎ 0031 72 30 30 500
- **Email competent person:** sds@kft.de
- **Information department:** See supplier/manufacturer
- **1.4 Emergency telephone number:**  
GIZ-Nord, Göttingen, Germany  
+49 551 19240

#### SECTION 2: Hazards identification

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



GHS02 flame

Flam. Aerosol 1 H222-H229 Extremely flammable aerosol. Pressurised container: May burst if heated.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



F+; Extremely flammable

R12: Extremely flammable.

- **Information concerning particular hazards for human and environment:**  
Based on the classification criteria for mixtures according to Regulation (EC) No. 1272/2008, the mixture is subject to labelling.  
Warning! Pressurized container.
- **Classification system:**  
The classification was made according to the latest editions of the EC-lists and expanded using company data and specialized literature.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS02

- **Signal word** Danger
- **Hazard statements**  
H222-H229 Extremely flammable aerosol. Pressurised container: May burst if heated.
- **Precautionary statements**  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P251 Do not pierce or burn, even after use.  
P211 Do not spray on an open flame or other ignition source.

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P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

· **Special labelling of certain preparations:** P102 Keep out of reach of children.· **2.3 Other hazards**· **Results of PBT and vPvB assessment**· **PBT:** Not applicable· **vPvB:** Not applicable

### SECTION 3: Composition/information on ingredients

· **3.2 Chemical characterization: Mixtures**· **Description:** Mixture of the substances listed below with nonhazardous additions.· **Dangerous components:**

CAS: 74-98-6	propane liquefied	25-50%
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EINECS: 200-827-9	F+ R12	
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Index number: 601-003-00-5	Flam. Gas 1, H220; Press. Gas, H280	
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CAS: 106-97-8	butane, pure	25-50%
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EINECS: 203-448-7	F+ R12	
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Index number: 601-004-00-0	Flam. Gas 1, H220; Press. Gas, H280	
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CAS: 75-28-5	isobutane	10-20%
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EINECS: 200-857-2	F+ R12	
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Index number: 601-004-01-8	Flam. Gas 1, H220; Press. Gas, H280	
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· **Additional information:** For the wording of the listed risk phrases refer to section 16.

### SECTION 4: First aid measures

· **4.1 Description of first aid measures**· **General information:**

If symptoms persist or in case of doubt, seek medical advice.

On direct contact with gas escaping from compressed gas cylinders, frostbites are possible.

· **After inhalation:** Supply fresh air; consult a doctor in case of pain.· **After skin contact:**

Rinse with warm water.

In cases of frost bites, rinse with plenty of water. Do not remove clothing.

If symptoms persist, consult a doctor.

· **After eye contact:**

Rinse opened eye for several minutes under running water.

If symptoms persist, consult a doctor.

· **After swallowing:** Rather unlikely if used appropriately.· **4.2 Most important symptoms and effects, both acute and delayed** Frost bites· **4.3 Indication of any immediate medical attention and special treatment needed** Symptomatic treatment

### SECTION 5: Firefighting measures

· **5.1 Extinguishing media**· **Suitable extinguishing agents:**CO<sub>2</sub>, sand, extinguishing powder. Do not use water.

Use fire fighting measures that suit the environment.

· **For safety reasons unsuitable extinguishing agents:** Water

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- **5.2 Special hazards arising from the substance or mixture**

In case of fire, the following can be released:

Vapours are heavier than air.

Vapours spread on the ground to a distant ignition source and flash back.

Can form explosive gas-air mixtures.

Carbon monoxide (CO)

- **5.3 Advice for firefighters**

- **Protective equipment:** Wear self-contained respiratory protective device.

- **Additional information:**

Seal off area and allow fire to burn out.

Heating leads to pressure increase entailing danger of bursting and explosion. Immediately cool neighbouring packages and containers with sprayed water and, if possible, remove them out of the danger zone

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**



Wear protective equipment. Keep unprotected persons away.

Move uninvolved persons towards the weather side (windward); remove all ignition sources.

Do not breathe vapors and mists.

- **6.2 Environmental precautions:** No special measures required.

- **6.3 Methods and material for containment and cleaning up:**

Ensure adequate ventilation.

Allow to evaporate.

- **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.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**

Open and handle receptacle with care.

Avoid contact with eyes and skin.

- **Information about protection against explosions and fires:**



Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Observe the general rules of industrial fire protection.

- **7.2 Conditions for safe storage, including any incompatibilities**

- **Storage:**

- **Requirements to be met by storerooms and receptacles:**

Store in a cool location.

Observe official regulations on storing packagings with pressurized containers.

Unsuitable container material:

Various plastics

- **Information about storage in one common storage facility:**

Store away from foodstuffs.

Store away from feed.

Do not store with oxygen bottles.

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- Store away from strong oxidizers.
- Refer to national regulations for storing hazardous chemicals.
- **Further information about storage conditions:**
- Keep receptacle tightly sealed.
- Do not seal receptacle gas-tight.
- Store under cool, dry conditions in well sealed receptacles.
- Protect from heat and direct sunlight.
- Avoid temperatures > 40 °C
- **Storage class:** 2B: Aerosol dispensers and lighters
- **7.3 Specific end use(s)** Follow the directions!

### SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:**
- Mechanical ventilation/exhaustion is strongly recommended.
- No further data; see section 7.
- **8.1 Control parameters**
- **Components with limit values that require monitoring at the workplace:**
- 106-97-8 butane, pure**
- WEL (Great Britain) Short-term value: 1810 mg/m<sup>3</sup>, 750 ppm
- Long-term value: 1450 mg/m<sup>3</sup>, 600 ppm
- Carc (if more than 0.1% of buta-1.3-diene)
- **Additional information:** The lists that were valid during the creation were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
- The usual precautionary measures should be adhered to when handling chemicals.
- Avoid contact with eyes and skin.
- Wash hands before breaks and at the end of work.
- The following instructions regarding the protective equipment refer to the industrial use of larger quantities.
- **Breathing equipment:** Not required
- **Protection of hands:**
- Chemical resistant gloves (EN 374)
- The glove material has to be impermeable and resistant to the product/substance/preparation.
- Due to missing tests no recommendation to the glove material can be given for the product / preparation / chemical mixture.
- Selection of the glove material in consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves:**
- The selection of suitable gloves depends upon the material, and also upon the quality of the gloves. The degree of protection will vary from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material:**
- The exact penetration time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Tightly sealed goggles
- **Body protection:** Protective work clothing

### SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **General Information:**
- **Appearance:**
- Form: Aerosol
- Colour: Colourless
- **Odour:** Characteristic

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· <b>Odour threshold:</b>	Not determined
· <b>pH-value:</b>	Not applicable
· <b>Change in condition:</b>	
<b>Melting point/Melting range:</b>	Not applicable, as pressurized gas container
<b>Boiling point/Boiling range:</b>	Not applicable, as aerosol
· <b>Flash point:</b>	Not applicable, as aerosol
· <b>Flammability (solid, gaseous):</b>	Not applicable
· <b>Ignition temperature:</b>	
<b>Decomposition temperature:</b>	Not determined
· <b>Self ignition temperature:</b>	Product is not self-igniting.
· <b>Danger of explosion:</b>	Aerosol Pressurized container Do not pierce.
· <b>Explosion limits:</b>	
<b>Lower:</b>	Not determined
<b>Upper:</b>	Not determined
· <b>Vapour pressure:</b>	Not determined
· <b>Density:</b>	Not determined
· <b>Relative density:</b>	Not determined
· <b>Vapour density:</b>	Not determined
· <b>Evaporation rate:</b>	Not applicable
· <b>Solubility in / Miscibility with</b>	
<b>Water:</b>	Practically insoluble
· <b>Partition coefficient (n-octanol/water):</b>	Not determined
· <b>Viscosity:</b>	
<b>dynamic:</b>	Not determined
<b>kinematic:</b>	Not determined
· <b>9.2 Other information</b>	No further relevant information available

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications
- **10.3 Possibility of hazardous reactions** Forms explosive gas mixtures with air.
- **10.4 Conditions to avoid**  
Temperatures > 40 °C  
Heat
- **10.5 Incompatible materials:** Strong oxidants
- **10.6 Hazardous decomposition products:**  
No hazardous decomposition products if instructions for storage and handling are followed

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:** No toxicity data are available for the product itself.

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- **Primary irritant effect:**
- **on the skin:**  
No irritating effect  
Frostbites depending on the time of exposition
- **on the eye:**  
No irritating effect  
Tissue damage because of frostbite is possible.
- **Sensitization:** No sensitizing effects known
- **Other information (about experimental toxicology):**
- **Carcinogenic, mutagenic effects and adverse effects on reproduction:**  
Presently available data show no carcinogenic, mutagenic or teratogenic effects.
- **Subacute to chronic toxicity:**
- **STOT-single exposure** No classification
- **STOT-repeated exposure:** No classification

### 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:** 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

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.  
Disposal according to instructions of local authorities  
Must be recycled or disposed of according to the regulations. Waste has to be classified according to the European Waste Catalogue based on the identification of the waste generating source.
- **European waste catalogue:**  
16 00 00 WASTES NOT OTHERWISE SPECIFIED IN THE LIST  
16 05 00 gases in pressure containers and discarded chemicals  
16 05 04\* gases in pressure containers (including halons) containing dangerous substances
- **Uncleaned packagings:**
- **Recommendation:**  
Disposal must be made according to official regulations.  
Empty containers may contain harmful, ignitable/flammable or explosive residues and vapours. Do not cut, grind, puncture, weld on, reuse or dispose of containers until appropriate safety measures have been taken. Do not remove labels until containers have been cleaned.

### SECTION 14: Transport information

- **14.1 UN-Number**
- **ADR, IMDG, IATA** UN1950

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<ul style="list-style-type: none"> <li>· 14.2 UN proper shipping name</li> <li>· ADR</li> <li>· IMDG</li> <li>· IATA</li> </ul>	<p>1950 AEROSOLS AEROSOLS AEROSOLS, flammable</p>
<ul style="list-style-type: none"> <li>· 14.3 Transport hazard class(es)</li> <li>· ADR</li> </ul>	<p></p> <ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>
<ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>	<p>2 5F Gases 2.1</p>
<ul style="list-style-type: none"> <li>· IMDG, IATA</li> </ul>	<p></p> <ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>
<ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>	<p>2.1 2.1</p>
<ul style="list-style-type: none"> <li>· 14.4 Packing group</li> <li>· ADR, IMDG, IATA</li> </ul>	<p>Void</p>
<ul style="list-style-type: none"> <li>· 14.5 Environmental hazards:</li> <li>· Marine pollutant:</li> </ul>	<p>No</p>
<ul style="list-style-type: none"> <li>· 14.6 Special precautions for user</li> <li>· Danger code (Kemler):</li> <li>· EMS Number:</li> </ul>	<p>Warning: Gases - F-D,S-U</p>
<ul style="list-style-type: none"> <li>· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</li> </ul>	<p>Not applicable</p>
<ul style="list-style-type: none"> <li>· Transport/Additional information:</li> </ul>	<p>-----</p> <ul style="list-style-type: none"> <li>· ADR</li> <li>· Limited quantities (LQ):</li> <li>· Transport category:</li> <li>· Tunnel restriction code:</li> </ul>
<ul style="list-style-type: none"> <li>· IATA</li> <li>· Remarks:</li> </ul>	<p>Packing Instructions: For Limited Quantities: Y203(Max Net Qty/Pkg: 30 kg G) Passenger and Cargo Aircraft: 203 (Max Net Qty/Pkg: 75 kg) Cargo Aircraft only: 203 (Max Net Qty/Pkg: 150 kg)</p>
<ul style="list-style-type: none"> <li>· UN "Model Regulation":</li> </ul>	<p>UN1950, AEROSOLS, 2.1</p>

### SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- National regulations
- Water hazard class: Generally not hazardous for water

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

### SECTION 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.

- **Department issuing MSDS:**

KFT Chemieservice GmbH

Im Leuschnerpark. 3 64347 Griesheim

Postfach 1451 64345 Griesheim

Germany

Phone: +49 6155 86829-0

Fax: +49 6155 86829-25

Safety Data Sheet Service: +49 6155 86829-22

- **Contact:** Dr. Sonja Fischer

- **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)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

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

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Flam. Gas 1: Flammable gases, Hazard Category 1

Flam. Aerosol 1: Flammable aerosols, Hazard Category 1

Press. Gas: Gases under pressure: Compressed gas