

OK Befestigung GmbH & Co. KG  
47802 Krefeld

Date printed 22.09.2023, Revision 22.09.2023

Version 1.0

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

### 1.1 Product identifier

**UN 1950 Fuel Cell LP**  
**Fuel Cell 31,5 x 80 LP (UFI: 8U33-3J3C-VC0C-0QCD)**  
**Fuel Cell 31,5 x 115 LP (UFI: EFET-146K-R10T-7RDW)**  
**Fuel Cell 31,5 x 152 LP (UFI: J3TU-K47V-Y10S-YE0Y)**  
**Fuel Cell 31,5 x 165 LP (UFI: J3TU-K47V-Y10S-YE0Y)**  
**Fuel Cell 18g, Fuel Cell 25g, Fuel Cell 40g**  
**Article number: 400835 (18g); 400951 (25g); 401448 (40g)**

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

#### 1.2.1 Relevant uses

Gas cartridge

#### 1.2.2 Uses advised against

None known.

### 1.3 Details of the supplier of the safety data sheet

**Company** OK Befestigung GmbH & Co. KG  
Liesentorweg 19a  
47802 Krefeld / GERMANY  
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#### Address enquiries to

**Technical information** [vertrieb@okbefestigung.de](mailto:vertrieb@okbefestigung.de)

**Safety Data Sheet** [sdb@chemiebuero.de](mailto:sdb@chemiebuero.de) (No dispatch of safety data sheets)

Safety data sheets are available from the supplier.

### 1.4 Emergency telephone number

**Company** +49 177 3202922

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture [REGULATION (GB) CLP]

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

### 2.2 Label elements

The product is required to be labelled in accordance with regulation CLP.

#### Hazard pictograms



#### Signal word

DANGER

#### Hazard statements

H222 Extremely flammable aerosol.  
H229 Pressurised container: May burst if heated.

#### Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P211 Do not spray on an open flame or other ignition source.  
P251 Do not pierce or burn, even after use.  
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C / 122°F.

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### 2.3 Other hazards

<b>Physico-chemical hazards</b>	Vapours may form explosive mixture with air.
<b>Human health dangers</b>	Contact with product may cause cryogenic burns/frostbite. High concentrations can cause a suffocating. The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
<b>Environmental hazards</b>	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 3: Composition / Information on ingredients

### 3.1 Substances

not applicable

### 3.2 Mixtures

The product is a mixture.

Range [%]	Substance
0 - 50	Propane CAS: 74-98-6, EINECS/ELINCS: 200-827-9, EU-INDEX: 601-003-00-5, Reg-No.: 01-2119486944-21-XXXX GHS/CLP: Flam. Gas 1A: H220 - Press. Gas: H280
0 - 50	Butane CAS: 106-97-8, EINECS/ELINCS: 203-448-7, EU-INDEX: 601-004-00-0, Reg-No.: 01-2119474691-32-XXXX GHS/CLP: Flam. Gas 1A: H220 - Press. Gas: H280
0 - 50	1-Butene CAS: 106-98-9, EINECS/ELINCS: 203-449-2, EU-INDEX: 601-012-00-4 GHS/CLP: Flam. Gas 1A: H220 - Press. Gas: H280
0 - 50	Propene CAS: 115-07-1, EINECS/ELINCS: 204-062-1, EU-INDEX: 601-011-00-9 GHS/CLP: Flam. Gas 1A: H220 - Press. Gas: H280
0 - 50	Hydrocarbons, C3 CAS: 68606-26-8, EINECS/ELINCS: 271-735-4, Reg-No.: 01-2119521732-46-XXXX GHS/CLP: Flam. Gas 1A: H220 - Press. Gas: H280

**Comment on component parts** For full text of H-statements: see SECTION 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

<b>General information</b>	Remove affected person from danger area, lay down.
<b>Inhalation</b>	Ensure supply of fresh air. Remove the victim into fresh air and keep him calm. In the event of symptoms seek medical treatment.
<b>Skin contact</b>	In case of contact with skin wash off with warm water. In case of frostbite, rinse with plenty of water. Do not remove clothing. In the event of symptoms seek medical treatment.
<b>Eye contact</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
<b>Ingestion</b>	Rinse mouth. Seek medical advice.

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

None known.

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

Treat symptomatically.  
Forward this sheet to your doctor.

### SECTION 5: Fire-fighting measures

#### 5.1 Extinguishing media

Suitable extinguishing media Foam, dry powder, water spray jet, carbon dioxide

Extinguishing media that must not be used Full water jet

#### 5.2 Special hazards arising from the substance or mixture

Bursting aerosols can be forcibly projected from a fire.  
In the event of fire the following can be released:  
Carbon monoxide (CO)  
Carbon dioxide (CO<sub>2</sub>)

#### 5.3 Advice for firefighters

Use self-contained breathing apparatus.  
Do not inhale explosion and/or combustion gases.  
Do not extinguish, unless leak can be stopped safely.  
Cool containers at risk with water spray jet.  
Heat causes increase in pressure and risk of bursting - Keep away from the container.  
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

### SECTION 6: Accidental release measures

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

Keep away from all sources of ignition.  
Ensure adequate ventilation.  
Wear suitable protective equipment. For personal protection 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

Use explosion-proofed equipment/fittings and non-sparking tools.  
Ensure adequate ventilation.  
Dispose of absorbed material in accordance with the regulations.

#### 6.4 Reference to other sections

See SECTION 7+8+13

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**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Use only in well-ventilated areas.  
Avoid contact with eyes and skin.

Keep away from open flames, hot surfaces and sources of ignition.  
Do not smoke.  
Take precautionary measures against static discharges.  
Use explosion-proofed equipment/fittings and non-sparking tools.  
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C.  
Do not pierce or burn, even after use.

Do not eat, drink, smoke or take drugs at work.  
Wash hands before breaks and after work.

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

Keep container tightly closed.  
Store in a dry place.  
Protect from heat/overheating and from sun.  
Do not keep at temperatures above 50 °C.

**7.3 Specific end use(s)**

See product use, SECTION 1.2

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## SECTION 8: Exposure controls / personal protection

### 8.1 Control parameters

#### Ingredients with occupational exposure limits to be monitored (GB)

Substance
Hydrocarbons, C3
CAS: 68606-26-8, EINECS/ELINCS: 271-735-4, Reg-No.: 01-2119521732-46-XXXX
Long-term exposure: 1000 ppm, 1800 mg/m <sup>3</sup> , ACGIH (Propane)
Propane/Butane
CAS: 74-98-6/ 106-97-8, EINECS/ELINCS: 200-827-9/ 203-448-7, EU-INDEX: 601-003-00-5/ 601-004-00-0
Long-term exposure: -/600 ppm, -/1450 mg/m <sup>3</sup> , Propane/Butane
Short-term exposure (15-minute): -/750 ppm, -/1810 mg/m <sup>3</sup>

#### Ingredients with occupational exposure limits to be monitored EU (2004/37/EG)

not relevant

#### DNEL

Substance
Propane, CAS: 74-98-6
There are no DNEL values established for the substance.
Butane, CAS: 106-97-8
There are no DNEL values established for the substance.

#### PNEC

Substance
Propane, CAS: 74-98-6
There are no PNEC values established for the substance.
Butane, CAS: 106-97-8
There are no PNEC values established for the substance.

### 8.2 Exposure controls

<b>Additional advice on system design</b>	Ensure adequate ventilation on workstation.
<b>Eye protection</b>	Not required under normal conditions.
<b>Hand protection</b>	Not required under normal conditions. > 0.11 mm Butyl rubber, >240 min (EN 374-1/-2/-3).
<b>Skin protection</b>	Protective clothing (EN 340)
<b>Other</b>	Do not inhale aerosols. Avoid contact with eyes and skin. Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier.
<b>Respiratory protection</b>	Not required under normal conditions. In the event of occupational exposure limits being exceeded or of inadequate ventilation: wear appropriate respiratory protection. Short term: filter apparatus, filter AX (DIN EN 14387).
<b>Thermal hazards</b>	none
<b>Delimitation and monitoring of the environmental exposition</b>	Comply with applicable environmental regulations limiting discharge to air, water and soil.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state	gas
Form	aerosol
Color	No information available.
Odor	characteristic
Odour threshold	No information available.
pH-value	not applicable
pH-value [1%]	not applicable
Boiling point [°C]	No information available.
Flash point [°C]	not applicable
Flammability	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Oxidising properties	not applicable
Vapour pressure/gas pressure [kPa]	No information available.
Density [g/cm <sup>3</sup> ]	not applicable
Relative density	not applicable
Bulk density [kg/m <sup>3</sup> ]	not applicable
Solubility in water	insoluble
Solubility other solvents	No information available.
Partition coefficient [n-octanol/water]	not applicable
Kinematic viscosity	not applicable
Relative vapour density	No information available.
Evaporation speed	No information available.
Melting point [°C]	not applicable
Auto-ignition temperature [°C]	No information available.
Decomposition temperature [°C]	No information available.
Particle characteristics	not applicable

### 9.2 Other information

none

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No dangerous reactions known if used as directed.  
Heat causes increase in pressure and risk of bursting.

### 10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

### 10.3 Possibility of hazardous reactions

No dangerous reactions known if used as directed.

### 10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
Heat causes increase in pressure and risk of bursting.

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### 10.5 Incompatible materials

Oxidizing agent

### 10.6 Hazardous decomposition products

No decomposition if used and stored according to specifications.  
In the event of fire: See SECTION 5.

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## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute oral toxicity

Product

Based on the available information, the classification criteria are not fulfilled.

#### Acute dermal toxicity

Product

Based on the available information, the classification criteria are not fulfilled.

#### Acute inhalational toxicity

Product

Based on the available information, the classification criteria are not fulfilled.

Substance

Propane, CAS: 74-98-6

LC50, inhalative, Rat, > 1443 mg/l (15 min) (Lit.)

Butane, CAS: 106-97-8

LC50, inhalative, Rat, 1443 mg/L air (15min)

#### Serious eye damage/irritation

Based on the available information, the classification criteria are not fulfilled.

Substance

Propane, CAS: 74-98-6

Eye, non-irritating

Butane, CAS: 106-97-8

Eye, non-irritating

#### Skin corrosion/irritation

Based on the available information, the classification criteria are not fulfilled.

Substance

Propane, CAS: 74-98-6

dermal, non-irritating

Butane, CAS: 106-97-8

dermal, non-irritating

#### Respiratory or skin sensitisation

Based on the available information, the classification criteria are not fulfilled.

Substance

Propane, CAS: 74-98-6

inhalative, non-sensitizing

dermal, non-sensitizing

Butane, CAS: 106-97-8

dermal, non-sensitizing

inhalative, non-sensitizing

#### Specific target organ toxicity — single exposure

Based on the available information, the classification criteria are not fulfilled.

Substance

Propane, CAS: 74-98-6

inhalative, non-irritating

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Butane, CAS: 106-97-8

inhalative, non-irritating

**Specific target organ toxicity — repeated exposure** — Based on the available information, the classification criteria are not fulfilled.

Substance

Propane, CAS: 74-98-6

NOAEC, inhalative, Rat, 4437 mg/m<sup>3</sup>, The effects observed are not sufficient for classification.

Butane, CAS: 106-97-8

NOAEC, inhalative, Rat, 4437 mg/m<sup>3</sup>

**Mutagenicity** Based on the available information, the classification criteria are not fulfilled.

**Reproduction toxicity** Based on the available information, the classification criteria are not fulfilled.

**Carcinogenicity** Based on the available information, the classification criteria are not fulfilled.

**Aspiration hazard** Based on the available information, the classification criteria are not fulfilled.

**General remarks**

Toxicological data of complete product are not available.

## 11.2 Information on other hazards

**11.2.1 Endocrine disrupting properties** The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**11.2.2 Other information** none

## SECTION 12: Ecological information

### 12.1 Toxicity

Substance

Butane, CAS: 106-97-8

LC50, (48h), Invertebrates, 14.22 - 69.43 mg/L

LC50, (96h), fish, 24.11 - 147.54 mg/L

EC50, (96h), Algae, 7.71 - 19.37 mg/L

### 12.2 Persistence and degradability

**Behaviour in environment compartments** No information available.

**Behaviour in sewage plant** No information available.

**Biological degradability** No information available.

### 12.3 Bioaccumulative potential

Accumulation in organisms is not expected.

### 12.4 Mobility in soil

No information available.

### 12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

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### 12.6 Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 12.7 Other adverse effects

Ecological data of complete product are not available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

#### Product

Coordinate disposal with the authorities if necessary.  
Dispose of contents/container in accordance with local/national regulation.  
The disposal by sewage disposal systems is generally not allowed.

#### Waste no. (recommended)

160504\* gases in pressure containers (including halons) containing dangerous substances

#### Contaminated packaging

Packaging that cannot be cleaned should be disposed of as for product.

#### Waste no. (recommended)

150111\*

## SECTION 14: Transport information

### 14.1 UN number or ID number

Transport by land according to ADR/RID 1950

Inland navigation (ADN) 1950

Marine transport in accordance with IMDG 1950


Air transport in accordance with IATA 1950


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#### 14.2 UN proper shipping name

Transport by land according to ADR/RID Aerosols  
- Classification Code 5F  
- Label   
- ADR LQ 1 I  
- ADR 1.1.3.6 (8.6) Transport category (tunnel restriction code) 2 (D)

Inland navigation (ADN) Aerosols  
- Classification Code 5F  
- Label 

Marine transport in accordance with IMDG Aerosols  
- EMS F-D, S-U  
- Label   
- IMDG LQ 1 I

Air transport in accordance with IATA Aerosols, flammable  
- Label 

#### 14.3 Transport hazard class(es)

Transport by land according to ADR/RID 2  
Inland navigation (ADN) 2  
Marine transport in accordance with IMDG 2.1  
Air transport in accordance with IATA 2.1

#### 14.4 Packing group

Transport by land according to ADR/RID not applicable  
Inland navigation (ADN) not applicable  
Marine transport in accordance with IMDG not applicable  
Air transport in accordance with IATA not applicable

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#### 14.5 Environmental hazards

Transport by land according to ADR/RID no

Inland navigation (ADN) no

Marine transport in accordance with IMDG no

Air transport in accordance with IATA no

#### 14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

#### 14.7 Maritime transport in bulk according to IMO instruments

not applicable

### SECTION 15: Regulatory information

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

**EEC-REGULATIONS** 2008/98/EC 2000/532/EC; 2010/75/EU; 2004/42/EC; (EC) 648/2004; (EC) 1907/2006 (REACH); (EU) 1272/2008; 75/324/EEC ((EC) 2016/2037); (EU) 2020/878; (EU) 2016/131; (EU) 517/2014; (EU) 2019/1148

- **Comment on component parts** Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.

- **Annex I (REACH)** The product is not subject to Annex I restrictions.

- **Annex XIV (REACH)** According to Annex XIV of Regulation (EC) 1907/2006 (REACH) the product does not contain any substances  $\geq 0.1\%$  that are subject to authorisation.

- **Annex XVII (REACH)** According to Annex XVII of Regulation (EC) 1907/2006 (REACH) the product contains  $\geq 0.1\%$  of substances with the following restrictions. 40

According to Annex XVII of Regulation (EC) 1907/2006 (REACH) the product is not subject to any restrictions.

**TRANSPORT-REGULATIONS** ADR (2023); IMDG-Code (2023, 41. Amdt.); IATA-DGR (2023)

**NATIONAL REGULATIONS (GB):** EH40/2005 Workplace exposure limits (Second edition, published December 2011); UK REACH; GB CLP.

- **Observe employment restrictions for people** Observe employment restrictions for young people. SEVESO III ( Directive 2012/18/EU), Hazard categories in accordance with Regulation (EC) No 1272/2008:

P3a FLAMMABLE AEROSOLS

Named dangerous substances:

18. Liquefied flammable gases, Category 1 or 2 (including LPG) and natural gas.

- **VOC (2010/75/CE)** 97 - 99 %

#### 15.2 Chemical safety assessment

No information available.

### SECTION 16: Other information

#### 16.1 Hazard statements (SECTION 3)

H280 Contains gas under pressure; may explode if heated.

H220 Extremely flammable gas.

**16.2 Abbreviations and acronyms:**

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route  
 RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses  
 ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure  
 ATE = acute toxicity estimate  
 CAS = Chemical Abstracts Service  
 CLP = Classification, Labelling and Packaging  
 DMEL = Derived Minimum Effect Level  
 DNEL = Derived No Effect Level  
 EC50 = Median effective concentration  
 ECB = European Chemicals Bureau  
 EEC = European Economic Community  
 EINECS = European Inventory of Existing Commercial Chemical Substances  
 EL50 = Median effective loading  
 ELINCS = European List of Notified Chemical Substances  
 EmS = Emergency Schedules  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
 IC50 = Inhibition concentration, 50%  
 IMDG = International Maritime Code for Dangerous Goods  
 IUCLID = International Uniform Chemical Information Database  
 IVIS = In vitro irritation score  
 LC50 = Lethal concentration, 50%  
 LD50 = Median lethal dose  
 LC0 = lethal concentration, 0%  
 LOAEL = lowest-observed-adverse-effect level  
 LL50 = Median lethal loading  
 LQ = Limited Quantities  
 MARPOL = International Convention for the Prevention of Marine Pollution from Ships  
 NOAEL = No Observed Adverse Effect Level  
 NOEC = No Observed Effect Concentration  
 PBT = Persistent, Bioaccumulative and Toxic substance  
 PNEC = Predicted No-Effect Concentration  
 REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals  
 STP = Sewage Treatment Plant  
 TLV@TWA = Threshold limit value – time-weighted average  
 TLV@STEL = Threshold limit value – short-time exposure limit  
 VOC = Volatile Organic Compounds  
 vPvB = very Persistent and very Bioaccumulative

**16.3 Other information****Classification procedure**

Aerosol 1: H222 Extremely flammable aerosol. (Calculation method) H229 Pressurised container: May burst if heated. (Calculation method)

**Modified position**

none

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