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

1.1 Product identifier

UN 2037 Fuel Cell HP
Fuel Cell 31,5 x 80 HP
Fuel Cell 31,5 x 115 HP
Fuel Cell 31,5 x 140 HP
Fuel Cell 31,5 x 152 HP
Fuel Cell 31,5 x 165 HP
Fuel Cell 31,5 x 165 HP JP
Fuel Cell 31,5 x 165 HP Superfuel
Fuel Cell 30ml, Fuel Cell 45ml, Fuel Cell 80ml
Article number: 400835 (30ml); 400836 (45ml, 80ml);
401445 (80ml); 401446 (80ml); 401447 (45ml); 401538 (80ml)

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
Phone +49-(0)2151-953639
Fax +49-(0)2151-953649
Homepage www.okbefestigung.de
E-mail vertrieb@okbefestigung.de

Address enquiries to

Technical information vertrieb@okbefestigung.de

Safety Data Sheet 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]

Flam. Gas 1A: H220 Extremely flammable gas.
Press. Gas (Liquefied gas): H280 Contains gas under pressure; may explode 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
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.
P403 Store in a well-ventilated place.
P410 Protect from sunlight.

2.3 Other hazards

Physico-chemical hazards Vapours may form explosive mixture with air.

Human health dangers
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.

Environmental hazards
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	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	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	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

General information
Remove affected person from danger area, lay down.

Inhalation
Ensure supply of fresh air.
Remove the victim into fresh air and keep him calm.
In the event of symptoms seek medical treatment.

Skin contact
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.

Eye contact
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.

Ingestion
Rinse mouth.
Seek medical advice.

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 gas cylinder can be forcibly projected from a fire.
In the event of fire the following can be released:
Carbon monoxide (CO)
Carbon dioxide (CO2)

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 within 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-sparkling tools.
Ensure adequate ventilation.
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 7+8+13

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-sparkling 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

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/m³, ACGIH (Propane)

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.

PNEC

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

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation.
Eye protection	Not required under normal conditions.
Hand protection	Not required under normal conditions. > 0.11 mm Butyl rubber, >240 min (EN 374-1/-2/-3).
Skin protection	Protective clothing (EN 340)
Other	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.
Respiratory protection	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).
Thermal hazards	none
Delimitation and monitoring of the environmental exposition	Comply with applicable environmental regulations limiting discharge to air, water and soil.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	gas Liquefied gas
Form	Gas cartridge
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/cm³]	not applicable
Relative density	not applicable
Bulk density [kg/m³]	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

Pressure (propellant gas): 8.6 bar (21°C)

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.

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.

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.)

Serious eye damage/irritation Based on the available information, the classification criteria are not fulfilled.

Substance
Propane, CAS: 74-98-6
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

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

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

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/m³, The effects observed are not sufficient for classification.

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

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.

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	2037
Inland navigation (ADN)	2037
Marine transport in accordance with IMDG	2037
Air transport in accordance with IATA	not applicable

14.2 UN proper shipping name

Transport by land according to ADR/RID	RECEPTACLES, SMALL CONTAINING GAS (GAS CARTRIDGES)
- Classification Code	5F
- Label	
- ADR LQ	1 l
- ADR 1.1.3.6 (8.6)	Transport category (tunnel restriction code) 2 (D)
Inland navigation (ADN)	RECEPTACLES, SMALL CONTAINING GAS (GAS CARTRIDGES)
- Classification Code	5F
- Label	
Marine transport in accordance with IMDG	RECEPTACLES, SMALL CONTAINING GAS (GAS CARTRIDGES)
- EMS	F-D, S-U
- Label	
- IMDG LQ	1 l
Air transport in accordance with IATA	FORBIDDEN

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	not applicable

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

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 ≥ 0.1% that are subject to authorisation.
- Annex XVII (REACH)	According to Annex XVII of Regulation (EC) 1907/2006 (REACH) the product contains ≥ 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: P2 FLAMMABLE GASES Named dangerous substances: 18. Liquefied flammable gases, Category 1 or 2 (including LPG) and natural gas.
- VOC (2010/75/CE)	ca. 98 %

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

Flam. Gas 1A: H220 Extremely flammable gas. (Calculation method)
Press. Gas (Liquefied gas): H280 Contains gas under pressure; may explode if heated. (Calculation method)

Modified position

none

Copyright: Chemiebüro®