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

1.1 Product identifier

Trade name	**FUEL CELL**
Registration number (REACH)	not relevant (mixture)
Other means of identification	
article number	9GASFONE 91GASA

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

Relevant identified uses	professional use industrial use
Uses advised against	do not use for products which come into contact with the food stuffs do not use for private purposes (household)

1.3 Details of the supplier of the safety data sheet

CELO Fijaciones SL
c/ Rosselló 7
Castellar del Vallés SPAIN

telephone: + (34) 93 715 83 83
e-mail: info@celofixings.es
website: www.celofixings.com

1.4 Emergency telephone number

Emergency information service	(Giftnotruf München, 24/7, Deutsch und Englisch) +49 (0) 89 19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Section	Hazard class	Cat-egory	Hazard class and category	Hazard state-ment
2.2	flammable gas	Cat. 1	(Flam. Gas 1)	H220
2.5	gas under pressure	Cat. L	(Press. Gas L)	H280

Remarks

For full text of H-phrases: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

Contains gas under pressure; may explode if heated.

2.2 Label elements

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

Signal word **Danger**

Pictograms

GHS02, GHS04

Hazard statements

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

Precautionary statements

Precautionary statements - prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Precautionary statements - response

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 In case of leakage, eliminate all ignition sources.

Precautionary statements - storage

P410+P403 Protect from sunlight. Store in a well-ventilated place.

2.3 Other hazards

There is no additional information.

SECTION 3: Composition / Information on ingredients

3.1 Substances

not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of substance	Identifier	wt%	Classification acc. to 1272/2008/EC	Pictograms
But-1-ene	CAS No 106-98-9 EC No 203-449-2 REACH Reg. No 01-2119456615-34-xxxx	50 – < 75	Flam. Gas 1 / H220 Press. Gas L / H280	
Propene	CAS No 115-07-1 EC No 204-062-1 REACH Reg. No 01-2119447103-50-xxxx 01-2119860639-24-xxxx	25 – < 50	Flam. Gas 1 / H220 Press. Gas C / H280	
Poly[oxy(methyl-1,2-ethanediyl)],α-butyl-ω-hydroxy-	CAS No 9003-13-8 EC No 500-003-1 REACH Reg. No 01-2119492302-43-xxxx	1 – < 5	Acute Tox. 4 / H302 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319	

For full text of abbreviations: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Thaw frosted parts with lukewarm water. Do not rub affected area.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

water spray, BC-powder

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Contact with the product can cause burns and/or frostbite. Contains gas under pressure; may explode if heated.

Hazardous combustion products

nitrogen oxides (NOx), carbon monoxide (CO), carbon dioxide (CO2)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill

Covering of drains.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

• Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

• Flammability hazards

Keep away from sources of ignition - No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Protect from sunlight.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice

• Packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

No information available.

Relevant DNELs/DMELs/PNECs and other threshold levels

• relevant DNELs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Poly[oxy(methyl-1,2-ethanediyl)],α-butyl-ω-hydroxy-	9003-13-8	DNEL	2.9 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
Poly[oxy(methyl-1,2-ethanediyl)],α-butyl-ω-hydroxy-	9003-13-8	DNEL	0.83 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

• relevant PNECs of components of the mixture

Name of sub-stance	CAS No	End-point	Threshold level	Organism	Environ-mental com-partment	Exposure time
Poly[oxy(methyl-1,2-ethanediyl)],α-butyl-ω-hydroxy-	9003-13-8	PNEC	3.33 mg/l	aquatic organisms	water	intermittent release
Poly[oxy(methyl-1,2-ethanediyl)],α-butyl-ω-hydroxy-	9003-13-8	PNEC	100 mg/l	aquatic organisms	sewage treat-ment plant (STP)	short-term (single in-stance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Personal protective equipment shall be used when the risks cannot be avoided or sufficiently limited by technical means of collective protection or by measures, methods or procedures of work organization.

Eye/face protection

Wear eye/face protection.

Skin protection

• hand protection

Wear suitable gloves. Check leak-tightness/impermeability prior to use. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

• other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

[In case of inadequate ventilation] wear respiratory protection.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	gaseous (liquefied)
Colour	various
Odour	characteristic

Other physical and chemical parameters

pH (value)	
Melting point/freezing point	-185 °C
Initial boiling point and boiling range	-48 °C at 760 mmHg
Flash point	not determined
Evaporation rate	not determined
Flammability (solid, gas)	Flammable gas in accordance with GHS criteria
Explosive limits	
• lower explosion limit (LEL)	1.6 vol%
• upper explosion limit (UEL)	11 vol%
Vapour pressure	0.076 Pa at 20 °C

Density	not determined
Vapour density	Not determined
Relative density	Information on this property is not available.
Solubility(ies)	not determined
Partition coefficient	
n-octanol/water (log KOW)	This information is not available.
Auto-ignition temperature	350 °C (auto-ignition temperature (liquids and gases)) 385 °C (relative self-ignition temperature for solids)
Viscosity	not relevant (gaseous)
Explosive properties	none
Oxidising properties	

9.2 Other information

Solvent content	1.76 %
Solid content	0 %

SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". The mixture contains reactive substance(s): gas under pressure, risk of ignition

• if heated

danger of explosion - (gas under pressure) - danger of bursting container

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Physical stresses which might result in a hazardous situation and have to be avoided

strong shocks

10.5 Incompatible materials

oxidisers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Shall not be classified as acutely toxic.

• Acute toxicity of components of the mixture

Name of substance	CAS No	Exposure route	ATE
Poly[oxy(methyl-1,2-ethanediyl)],α-butyl-ω-hydroxy-	9003-13-8	oral	500 $^{mg}/_{kg}$
Poly[oxy(methyl-1,2-ethanediyl)],α-butyl-ω-hydroxy-	9003-13-8	dermal	2,000 $^{mg}/_{kg}$

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant.

Specific target organ toxicity (STOT)

Shall not be classified as a specific target organ toxicant.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
But-1-ene	106-98-9	LC50	19 $^{mg}/_{l}$	fish	96 h
But-1-ene	106-98-9	EC50	6.5 $^{mg}/_{l}$	algae	96 h
Propene	115-07-1	LC50	51.7 $^{mg}/_{l}$	fish	96 h
Propene	115-07-1	EC50	12.1 $^{mg}/_{l}$	algae	96 h
Poly[oxy(methyl-1,2-ethanediyl)],α-butyl-ω-hydroxy-	9003-13-8	LC50	564 $^{mg}/_{l}$	fish	96 h
Poly[oxy(methyl-1,2-ethanediyl)],α-butyl-ω-hydroxy-	9003-13-8	EC50	<320 $^{mg}/_{l}$	fish	96 h
Poly[oxy(methyl-1,2-ethanediyl)],α-butyl-ω-hydroxy-	9003-13-8	EL50	>100 $^{mg}/_{l}$	aquatic invertebrates	48 h

Aquatic toxicity (chronic)

Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Poly[oxy(methyl-1,2-ethanediyl)],α-butyl-ω-hydroxy-	9003-13-8	EL50	358 $^{mg}/_{l}$	algae	24 h
Poly[oxy(methyl-1,2-ethanediyl)],α-butyl-ω-hydroxy-	9003-13-8	EC50	>1,000 $^{mg}/_{l}$	microorganisms	10 min

12.2 Persistence and degradability

Degradability of components of the mixture

Name of substance	CAS No	Process	Degradation rate	Time
Poly[oxy(methyl-1,2-ethanediyl)],α-butyl-ω-hydroxy-	9003-13-8	oxygen depletion	79 %	28 d
Poly[oxy(methyl-1,2-ethanediyl)],α-butyl-ω-hydroxy-	9003-13-8	DOC removal	95 %	28 d

12.3 Bioaccumulative potential

Data are not available.

Bioaccumulative potential of components of the mixture

Name of substance	CAS No	BCF	Log KOW	BOD5/COD
But-1-ene	106-98-9		2.4	
Propene	115-07-1		1.77 (pH value: 7, 20 °C)	
Poly[oxy(methyl-1,2-ethanediyl)],α-butyl-ω-hydroxy-	9003-13-8		>1.18 – <4.37 (28 °C)	

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1	UN number	**2037**
14.2	UN proper shipping name	**RECEPTACLES, SMALL, CONTAINING GAS**
14.3	Transport hazard class(es)	
	Class	2 (gases)
	Subsidiary risk(s)	2.1 (flammability)
14.4	Packing group	not assigned to a packing group
14.5	Environmental hazards	none (non-environmentally hazardous acc. to the dangerous goods regulations)

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

• Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

UN number	2037
Proper shipping name	RECEPTACLES, SMALL, CONTAINING GAS
Class	2
Classification code	5F
Danger label(s)	2.1

Special provisions (SP)	191, 303, 344
Excepted quantities (EQ)	E0
Limited quantities (LQ)	1 L
Transport category (TC)	2
Tunnel restriction code (TRC)	D

• International Maritime Dangerous Goods Code (IMDG)

UN number	2037
Proper shipping name	RECEPTACLES, SMALL, CONTAINING GAS
Class	2.1
Danger label(s)	2.1

Special provisions (SP)	191, 277, 303, 344
Excepted quantities (EQ)	E0
Limited quantities (LQ)	1 L
EmS	F-D, S-U
Stowage category	B

• International Civil Aviation Organization (ICAO-IATA/DGR)

UN number	2037
Proper shipping name	Receptacles, small, containing gas
Class	2.1
Danger label(s)	2.1

Special provisions (SP)	A167
Excepted quantities (EQ)	E0
Limited quantities (LQ)	1 kg

SECTION 15: Regulatory information

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

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

16.1 Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
1.3		e-mail (competent person): sdb@aerochemica.de	yes
2.1		Classification according to Regulation (EC) No 1272/2008 (CLP): change in the listing (table)	yes
2.1	The most important adverse physicochemical, human health and environmental effects: Contains gas under pressure; may explode if heated. Spillage and fire water can cause pollution of watercourses.	The most important adverse physicochemical, human health and environmental effects: Contains gas under pressure; may explode if heated.	yes
2.2		Hazard statements: change in the listing (table)	yes
2.2		Precautionary statements - prevention: change in the listing (table)	yes
2.2	Precautionary statements - disposal		yes
2.2		Precautionary statements - disposal: change in the listing (table)	yes
3.2		Description of the mixture: change in the listing (table)	yes
6.2	Environmental precautions: Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.	Environmental precautions: Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.	yes
9.1	Colour: different	Colour: various	yes
9.1	Vapour pressure: 0.0757 Pa at 20 °C	Vapour pressure: 0.076 Pa at 20 °C	yes
12.1	Toxicity: Harmful to aquatic life with long lasting effects.	Toxicity: Shall not be classified as hazardous to the aquatic environment.	yes
12.1	Aquatic toxicity (chronic): May cause long-term adverse effects in the aquatic environment.	Aquatic toxicity (chronic)	yes
16		Abbreviations and acronyms: change in the listing (table)	yes
16		List of relevant phrases (code and full text as stated in chapter 2 and 3): change in the listing (table)	yes

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
Acute Tox.	Acute toxicity
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BOD	Biochemical Oxygen Demand
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
CMR	Carcinogenic, Mutagenic or toxic for Reproduction
COD	Chemical oxygen demand
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
Flam. Gas	Flammable gas
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
log KOW	n-Octanol/water
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
Press. Gas	Gas under pressure
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

- Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU
- Regulation (EC) No. 1272/2008 (CLP, EU GHS)

Classification procedure

Physical and chemical properties: The classification is based on tested mixture.
Health hazards/environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.