

Danger

# Safety Data Sheet

## 9 Component mix in Carbon dioxide

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878 Reference number: SDS 00929 Issue date: 1/11/2018 Revision date: 1/13/2023 Supersedes version of: 8/24/2022 Version: 3.0



		ixture and of the company/undertaking
1.1. Product identifier		
SDS no	: SDS	00929
1.2. Relevant identified u	ses of the substance or mixture	and uses advised against
Relevant identified uses Uses advised against	: Cons Uses	strial and professional uses. Perform risk assessment prior to use. sumer use. s other than those listed above are not supported, contact your supplier for more mation on other uses.
1.3. Details of the suppli	er of the safety data sheet	
Air Liquide UK Ltd. Station Road Coleshill B46 1JY Birmingham United Kingdom <u>safety.aluk@airliquide.com</u>		
1.4. Emergency telephor	e number	
Emergency telephone num	ber : 0167	5 462695 (Available 24/7)
SECTION 2: Hazard	s identification	
2.1. Classification of the	<u>substance or mixture</u>	
	<u>substance or mixture</u> to Regulation (EC) No. 1272/200	8 [CLP]
Classification according		8 [CLP] H221
Classification according	to Regulation (EC) No. 1272/200	H221
Classification according Physical hazards	to Regulation (EC) No. 1272/200 Flammable gases, Category 1B	H221
Physical hazards 2.2. Label elements	to Regulation (EC) No. 1272/200 Flammable gases, Category 1B	H221 H280
Classification according Physical hazards <u>2.2. Label elements</u> Labelling according to R	to Regulation (EC) No. 1272/200 Flammable gases, Category 1B Gases under pressure : Compres egulation (EC) No. 1272/2008 [CI	H221 H280
Classification according Physical hazards <u>2.2. Label elements</u> Labelling according to R Hazard pictograms (CLP)	to Regulation (EC) No. 1272/200 Flammable gases, Category 1B Gases under pressure : Compres egulation (EC) No. 1272/2008 [CI	H221 H280
Classification according Physical hazards <u>2.2. Label elements</u> Labelling according to R Hazard pictograms (CLP) Signal word (CLP)	to Regulation (EC) No. 1272/200 Flammable gases, Category 1B Gases under pressure : Compres egulation (EC) No. 1272/2008 [CI : : : : : : : : : : : : : : : : : : :	$H221 \\ H280$
Classification according Physical hazards 2.2. Label elements Labelling according to R Hazard pictograms (CLP) Signal word (CLP) Hazard statements (CLP)	to Regulation (EC) No. 1272/200 Flammable gases, Category 1B Gases under pressure : Compres egulation (EC) No. 1272/2008 [CI : : : : : : : : : : : : : : : : : : :	H221 H280 -P] $\overrightarrow{P}$ $\overrightarrow{P}$ $\overrightarrow{P}$ $\overrightarrow{P}$ $\overrightarrow{P}$ $\overrightarrow{P}$ $\overrightarrow{P}$ $\overrightarrow{P}$ $\overrightarrow{P}$ $\overrightarrow{P}$ $\overrightarrow{P}$ $\overrightarrow{P}$ $\overrightarrow{P}$ $\overrightarrow{P}$ $\overrightarrow{P}$ $\overrightarrow{P}$ $\overrightarrow{P}$
Classification according Physical hazards <u>2.2. Label elements</u> Labelling according to R Hazard pictograms (CLP) Signal word (CLP) Hazard statements (CLP) Precautionary statements	to Regulation (EC) No. 1272/200 Flammable gases, Category 1B Gases under pressure : Compres egulation (EC) No. 1272/2008 [CI : : : : : : : : : : : : :	H221 H280 -PJ W H280 -Flammable gas. - Flammable gas. - Contains gas under pressure; may explode if heated.
Classification according Physical hazards 2.2. Label elements	to Regulation (EC) No. 1272/200 Flammable gases, Category 1B Gases under pressure : Compres egulation (EC) No. 1272/2008 [CI : : : : : : : : : : : : :	H221 H280 H280 H280 H280 H280 H280 H280 H280



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### 2.3. Other hazards

Asphyxiant in high concentrations. These high concentrations are within the flammability range. Not classified as PBT or vPvB.

### **SECTION 3: Composition/information on ingredients**

#### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Carbon dioxide	CAS-No.: 124-38-9 EC-No.: 204-696-9 EC Index-No.: REACH-no: *1	40.47	Press. Gas (Liq.), H280
Methane	CAS-No.: 74-82-8 EC-No.: 200-812-7 EC Index-No.: 601-001-00-4 REACH-no: 01-2119474442-39	37.5	Flam. Gas 1A, H220 Press. Gas (Comp.), H280
Nitrogen	CAS-No.: 7727-37-9 EC-No.: 231-783-9 EC Index-No.: REACH-no: *1	20.1	Press. Gas (Comp.), H280
Ethane	CAS-No.: 74-84-0 EC-No.: 200-814-8 EC Index-No.: 601-002-00-X REACH-no: 01-2119486765-21	1.03	Flam. Gas 1A, H220 Press. Gas (Liq.), H280
Propane	CAS-No.: 74-98-6 EC-No.: 200-827-9 EC Index-No.: 601-003-00-5 REACH-no: 01-2119486944-21	0.4	Flam. Gas 1A, H220 Press. Gas (Liq.), H280
Butane n-	CAS-No.: 106-97-8 EC-No.: 203-448-7 EC Index-No.: 601-004-00-0 REACH-no: 01-2119474691-32	0.12	Flam. Gas 1A, H220 Press. Gas (Liq.), H280
n-hexane	CAS-No.: 110-54-3 EC-No.: 203-777-6 EC Index-No.: 601-037-00-0	0.12	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361f STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
Isobutane	CAS-No.: 75-28-5 EC-No.: 200-857-2 EC Index-No.: 601-004-00-0 REACH-no: 01-2119485395-27	0.12	Flam. Gas 1A, H220 Press. Gas (Liq.), H280
Isopentane	CAS-No.: 78-78-4 EC-No.: 201-142-8 EC Index-No.: 601-006-00-1	0.09	Flam. Liq. 1, H224 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411



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n-Pentane	CAS-No.: 109-66-0	0.05	Flam. Liq. 2, H225	
	EC-No.: 203-692-4		STOT SE 3, H336	
	EC Index-No.: 601-006-00-1		Asp. Tox. 1, H304	
			Aquatic Chronic 2, H411	

Full text of H- and EUH-statements: see section 16

Contains no other components or impurities which will influence the classification of the product.

\*1: Listed in Annex IV / V REACH, exempted from registration.

\*3: Registration not required: Substance manufactured or imported < 1t/y.

## **SECTION 4: First aid measures**

Adverse effects not expected from this product.

#### 4.1. Description of first aid measures

- Inhalation	
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- Skin contact
- Eye contact

- Ingestion

#### Adverse effects not expected from this product. Ingestion is not considered a potential route of exposure. :

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

In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. See section 11.

: Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Perform cardiopulmonary resuscitation if breathing

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

None.

stopped.

SECTION 5: Firefighting measures		
5.1. Extinguishing media		
<ul> <li>Suitable extinguishing media</li> <li>Unsuitable extinguishing media</li> </ul>	<ul><li>Shutting off the source of the gas is the preferred method of control.</li><li>Do not use water jet to extinguish.</li></ul>	
5.2. Special hazards arising from the substance of	or mixture	
Specific hazards Hazardous combustion products	<ul><li>Exposure to fire may cause containers to rupture/explode.</li><li>Incomplete combustion may form carbon monoxide.</li></ul>	
5.3. Advice for firefighters		
Specific methods	<ul> <li>Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems.</li> <li>If possible, stop flow of product.</li> <li>Use water spray or fog to knock down fire fumes if possible.</li> <li>Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.</li> <li>Move containers away from the fire area if this can be done without risk.</li> </ul>	
Special protective equipment for fire fighters	<ul> <li>In confined space use self-contained breathing apparatus.</li> <li>Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.</li> <li>Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.</li> <li>Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters.</li> </ul>	



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### **SECTION 6: Accidental release measures**

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

For non-emergency personnel	: Act in accordance with local emergency plan.
	Try to stop release.
	Evacuate area.
	Eliminate ignition sources.
	Ensure adequate air ventilation.
	Stay upwind.
	See section 8 of the SDS for more information on personal protective equipment.
For emergency responders	: Monitor concentration of released product.
	Consider the risk of potentially explosive atmospheres.
	Wear self-contained breathing apparatus when entering area unless atmosphere is proved
	to be safe.
	See section 5.3 of the SDS for more information.
6.2. Environmental precautions	
	Try to stop release.
6.3. Methods and material for containment and cle	eaning up
	Ventilate area.
6.4. Reference to other sections	

See also sections 8 and 13.

# SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Safe use of the product	: Do not breathe gas.
	Avoid release of product into atmosphere.
	The product must be handled in accordance with good industrial hygiene and safety procedures.
	Only experienced and properly instructed persons should handle gases under pressure.
	Consider pressure relief device(s) in gas installations.
	Ensure the complete gas system was (or is regularily) checked for leaks before use.
	Do not smoke while handling product.
	Use only properly specified equipment which is suitable for this product, its supply pressure
	and temperature. Contact your gas supplier if in doubt.
	Avoid suck back of water, acid and alkalis.
	Assess the risk of potentially explosive atmospheres and the need for explosion-proof equipment.
	Purge air from system before introducing gas.
	Take precautionary measures against static discharge.
	Keep away from ignition sources (including static discharges).
	Consider the use of only non-sparking tools.
	Ensure equipment is adequately earthed.



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Safe handling of the gas receptacle	<ul> <li>Refer to supplier's container handling instructions.</li> <li>Do not allow backfeed into the container.</li> <li>Protect containers from physical damage; do not drag, roll, slide or drop.</li> <li>When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders.</li> <li>Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use.</li> <li>If user experiences any difficulty operating valve discontinue use and contact supplier.</li> <li>Never attempt to repair or modify container valves or safety relief devices.</li> <li>Damaged valves should be reported immediately to the supplier.</li> <li>Keep container valve outlets clean and free from contaminants particularly oil and water.</li> <li>Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment.</li> <li>Close container valve after each use and when empty, even if still connected to equipment.</li> <li>Never attempt to transfer gases from one cylinder/container to another.</li> <li>Never use direct flame or electrical heating devices to raise the pressure of a container.</li> <li>Do not remove or deface labels provided by the supplier for the identification of the content of the container.</li> <li>Suck back of water into the container must be prevented.</li> </ul>
7.2. Conditions for safe storage, including any inc	Open valve slowly to avoid pressure shock.
	Observe all regulations and local requirements regarding storage of containers.         Containers should not be stored in conditions likely to encourage corrosion.         Container valve guards or caps should be in place.         Containers should be stored in the vertical position and properly secured to prevent them from falling over.         Stored containers should be periodically checked for general condition and leakage.         Keep container below 50°C in a well ventilated place.         Store containers in location free from fire risk and away from sources of heat and ignition.         Keep away from combustible materials.         Segregate from oxidant gases and other oxidants in store.         All electrical equipment in the storage areas should be compatible with the risk of a potentially explosive atmosphere.
7.3. Specific end use(s)	Nore

None.

### **SECTION 8: Exposure controls/personal protection**

#### 8.1. Control parameters

Carbon dioxide (124-38-9)	
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA) [1]	9150 mg/m³
WEL TWA (OEL TWA) [2]	5000 ppm
WEL STEL (OEL STEL)	27400 mg/m <sup>3</sup>
WEL STEL (OEL STEL) [ppm]	15000 ppm

### DNEL (Derived-No Effect Level)

: None established.

PNEC (Predicted No-Effect Concentration)

: None established.



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### 8.2. Exposure controls

8.2.1. Appropriate engineering controls	
	Provide adequate general and local exhaust ventilation.
	Product to be handled in a closed system.
	Systems under pressure should be regularily checked for leakages.
	Ensure exposure is below occupational exposure limits (where available).
	Gas detectors should be used when flammable gases/vapours may be released. Consider the use of a work permit system e.g. for maintenance activities.
8.2.2. Individual protection measures, e.g.	personal protective equipment
	A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered: PPE compliant to the recommended EN/ISO standards should be selected.
Eye/face protection	: Wear safety glasses with side shields.
	Standard EN 166 - Personal eye-protection - specifications.
Skin protection	
- Hand protection	: Wear working gloves when handling gas containers. Standard EN 388 - Protective gloves against mechanical risk, performance level 1 or higher.
- Other	<ul> <li>Consider the use of flame resistant anti-static safety clothing.</li> <li>Standard EN ISO 14116 - Limited flame spread materials.</li> <li>Standard EN 1149-5 - Protective clothing: Electrostatic properties.</li> <li>Wear safety shoes while handling containers.</li> <li>Standard EN ISO 20345 - Personal protective equipment - Safety footwear.</li> </ul>
Respiratory protection	<ul> <li>Gas filters may be used if all surrounding conditions e.g. type and concentration of the contaminant(s) and duration of use are known.</li> <li>Use gas filters with full face mask, where exposure limits may be exceeded for a short-term period, e.g. connecting or disconnecting containers.</li> <li>Gas filters do not protect against oxygen deficiency.</li> <li>Never use any kind of filtering respiratory protection equipment when working with this substance due to it having poor or no warning properties.</li> <li>Standard EN 14387 - Gas filter(s), combined filter(s) and standard EN136, full face masks .</li> </ul>
Thermal hazards	: None in addition to the above sections.
8.2.3. Environmental exposure controls	
	Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

### **SECTION 9: Physical and chemical properties**

Appearance	
- Physical state at 20°C / 101.3kPa	: Gas.
- Colour	: Colourless.
Odour	: Odour threshold is subjective and inadequate to warn of overexposure.
	Mixture contains one or more component(s) which have the following odour:
	Stenchant often added. Sweetish.
Melting point / Freezing point	: Not applicable for gas mixtures.
Boiling point	: Not applicable for gas mixtures.
	It is technically not possible to determine the boiling point or range of this mixture.
	Component with lowest boiling point: Nitrogen -196 °C
Flammability	: Flammability range not available.
	Flammable gas.
Lower explosion limit	: Calculated value: 10.66%
Upper explosion limit	: No test data or calculation method available.
Flash point	: Not applicable for gas mixtures.
Auto-ignition temperature	: Not known.
<b>o</b>	Auto ignition temperature for mixtures is not available. Component with lowest auto-ignition
	temperature : Butane n- 365 °C



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Decomposition temperature pH Viscosity, kinematic Water solubility [20°C] Partition coefficient n-octanol/water (Log Kow) Vapour pressure [20°C] Vapour pressure [50°C] Density and/or relative density Relative vapour density (air=1) Particle characteristics	<ul> <li>Not applicable.</li> <li>Not applicable for gas mixtures.</li> <li>Not applicable.</li> <li>Mixture is partially soluble in water</li> <li>Not applicable for gas mixtures.</li> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not applicable.</li> <li>Lighter or similar to air.</li> <li>Not applicable.</li> </ul>	
9.2. Other information 9.2.1. Information with regard to physical hazard classes		
Explosive properties Explosion limits Oxidising properties	<ul> <li>Not applicable.</li> <li>Flammability range not available.</li> <li>Not applicable.</li> </ul>	
9.2.2. Other safety characteristics		
Molar mass Evaporation rate Other data	<ul> <li>Not applicable for gas mixtures.</li> <li>Not applicable for gas mixtures.</li> <li>None.</li> </ul>	

SECTION 10: Stability and reactivity	
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#### 10.1. Reactivity

	No reactivity hazard other than the effects described in sub-sections below. Data for mixture are not available.
	This mixture contains components with the following reactivity : Can form explosive mixture with air. May react violently with oxidants.
10.2. Chemical stability	
	Stable under normal conditions.
10.3. Possibility of hazardous reactions	
	Can form explosive mixture with air.
	May react violently with oxidants.
10.4. Conditions to avoid	
	Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Avoid moisture in installation systems.
10.5. Incompatible materials	
	Air, Oxidisers.
	For additional information on compatibility refer to ISO 11114.
10.6. Hazardous decomposition products	
	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information		
11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008		
Acute toxicity	: Classification criteria are not met.	
Isobutane (75-28-5)		

 LC50 Inhalation - Rat [ppm]
 3125 ppm/4h



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dioxide's stimulatory effects on the respiratory and circulatory systems.

Propane (74-98-6)
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LC50 Inhalation - Rat [ppm]	20000 ppm/4h
Skin corrosion/irritation	: Classification criteria are not met.
Serious eye damage/irritation	: No known effects from this product.
Respiratory or skin sensitisation	: No known effects from this product.
Germ cell mutagenicity	: No known effects from this product.
Carcinogenicity	: No known effects from this product.
Toxic for reproduction : Fertility	: Classification criteria are not met.
Toxic for reproduction : unborn child	: No known effects from this product.
STOT-single exposure	: Classification criteria are not met.
STOT-repeated exposure	: Classification criteria are not met.
Aspiration hazard	: Not applicable for gases and gas mixtures.
11.2. Information on other hazards	
Other information	: For more information, see 'EIGA Safety Info 24: Carbon Dioxide, Physiological Hazards' at www.eiga.eu.
	Unlike simple asphyxiants, carbon dioxide has the ability to cause death even when normal oxygen levels (20-21%) are maintained. 5% CO2 has been found to act synergistically to increase the toxicity of certain other gases (CO, NO2). CO2 has been shown to enhance the production of carboxy- or met-hemoglobin by these gases possibly due to carbon

### **SECTION 12: Ecological information**

### 12.1. Toxicity

Assessment	: Classification criteria are not met.
EC50 48h - Daphnia magna [mg/l]	: No data available.
EC50 72h - Algae [mg/l]	: No data available.
LC50 96 h - Fish [mg/l]	: No data available.

Butane n- (106-97-8)	
EC50 48h - Daphnia magna [mg/l]	14.2 mg/l
EC50 72h - Algae [mg/l]	7.7 mg/l
LC50 96 h - Fish [mg/l]	24.1 mg/l

Ethane (74-84-0)	
EC50 48h - Daphnia magna [mg/l]	7.02 - 69.43 mg/l
EC50 72h - Algae [mg/l]	7.71 - 16.5 mg/l
LC50 96 h - Fish [mg/l]	24.11 - 147.54 mg/l

n-hexane (110-54-3)	
EC50 48h - Daphnia magna [mg/l]	No data available.
EC50 72h - Algae [mg/l]	No data available.
LC50 96 h - Fish [mg/l]	No data available.



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Isobutane (75-28-5)	
EC50 48h - Daphnia magna [mg/l]	14.22 - 69.43 mg/l
EC50 72h - Algae [mg/l]	7.71 - 19.37 mg/l
LC50 96 h - Fish [mg/l]	24.11 - 147.54 mg/l

Isopentane (78-78-4)	
EC50 48h - Daphnia magna [mg/l]	No data available.
EC50 72h - Algae [mg/l]	No data available.
LC50 96 h - Fish [mg/l]	No data available.

Methane (74-82-8)	
EC50 48h - Daphnia magna [mg/l]	69.4 mg/l
EC50 72h - Algae [mg/l]	19.4 mg/l
LC50 96 h - Fish [mg/l]	147.5 mg/l

Nitrogen (7727-37-9)	
EC50 48h - Daphnia magna [mg/l]	No data available.
EC50 72h - Algae [mg/l]	No data available.
LC50 96 h - Fish [mg/l]	No data available.

n-Pentane (109-66-0)	
EC50 48h - Daphnia magna [mg/l]	No data available.
EC50 72h - Algae [mg/l]	No data available.
LC50 96 h - Fish [mg/l]	No data available.

Propane (74-98-6)	
EC50 48h - Daphnia magna [mg/l]	27.1 mg/l
EC50 72h - Algae [mg/l]	11.9 mg/l
LC50 96 h - Fish [mg/l]	49.9 mg/l

Carbon dioxide (124-38-9)	
EC50 48h - Daphnia magna [mg/l]	No data available.
EC50 72h - Algae [mg/l]	No data available.
LC50 96 h - Fish [mg/l]	No data available.
12.2. Persistence and degradability	

Assessment

: No ecological damage caused by this product.

#### 12.3. Bioaccumulative potential

Assessment

: No data available.



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12.4. Mobility in soil	
Assessment	: No data available.
Assessment	: No ecological damage caused by this product.
12.5. Results of PBT and vPvB assessment	
Assessment	: Not classified as PBT or vPvB.
12.6. Endocrine disrupting properties	
Assessment	:
12.7. Other adverse effects	
Other adverse effects	: No known effects from this product.
Effect on the ozone layer	: No effect on the ozone layer.
Effect on global warming	: Contains greenhouse gas(es).

### **SECTION 13: Disposal considerations**

#### 13.1. Waste treatment methods

List of hazardous waste codes (from Commission Decision 2000/532/EC as amended)	<ul> <li>Contact supplier if guidance is required.</li> <li>Do not discharge into areas where there is a risk of forming an explosive mixture with air.</li> <li>Waste gas should be flared through a suitable burner with flash back arrestor.</li> <li>Do not discharge into any place where its accumulation could be dangerous.</li> <li>Ensure that the emission levels from local regulations or operating permits are not exceeded.</li> <li>Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at http://www.eiga.org for more guidance on suitable disposal methods.</li> <li>Return unused product in original container to supplier.</li> <li>16 05 04 *: Gases in pressure containers (including halons) containing hazardous substances.</li> </ul>
13.2. Additional information	
	External treatment and disposal of waste should comply with applicable local and/or

national regulations.

# SECTION 14: Transport information

14.1. UN number or ID number	
In accordance with ADR / RID / IMDG / IATA / ADN UN-No.	: 1954
14.2. UN proper shipping name	
Transport by road/rail (ADR/RID) Transport by air (ICAO-TI / IATA-DGR) Transport by sea (IMDG)	<ul> <li>COMPRESSED GAS, FLAMMABLE, N.O.S. (Methane, Isobutane)</li> <li>Compressed gas, flammable, n.o.s. (Methane, Isobutane)</li> <li>COMPRESSED GAS, FLAMMABLE, N.O.S. (Methane, Isobutane)</li> </ul>
14.3. Transport hazard class(es)	
Labelling	2.1 : Flammable gases.
Transport by road/rail (ADR/RID)	
Class	: 2
Classification code	: 1F
Hazard identification number	: 23



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Tunnel Restriction	: B/D - Tank carriage : Passage forbidden through tunnels of category B, C, D and E. Other carriage : Passage forbidden through tunnels of category D and E
Transport by air (ICAO-TI / IATA-DGR) Class / Div. (Sub. risk(s)) Transport by sea (IMDG) Class / Div. (Sub. risk(s)) Emergency Schedule (EmS) - Fire Emergency Schedule (EmS) - Spillage	: 2.1 : 2.1 : F-D : S-U
14.4. Packing group	
Transport by road/rail (ADR/RID) Transport by air (ICAO-TI / IATA-DGR) Transport by sea (IMDG)	<ul> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not applicable.</li> </ul>
14.5. Environmental hazards	
Transport by road/rail (ADR/RID) Transport by air (ICAO-TI / IATA-DGR) Transport by sea (IMDG)	: None. : None. : None.
14.6. Special precautions for user	
Packing Instruction(s) Transport by road/rail (ADR/RID) Transport by air (ICAO-TI / IATA-DGR) Passenger and Cargo Aircraft Cargo Aircraft only Transport by sea (IMDG)	<ul> <li>P200.</li> <li>Forbidden.</li> <li>200.</li> <li>P200.</li> </ul>
Special transport precautions	<ul> <li>Avoid transport on vehicles where the load space is not separated from the driver's compartment.</li> <li>Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.</li> <li>Before transporting product containers: <ul> <li>Ensure there is adequate ventilation.</li> <li>Ensure that containers are firmly secured.</li> <li>Ensure valve is closed and not leaking.</li> <li>Ensure valve outlet cap nut or plug (where provided) is correctly fitted.</li> </ul> </li> </ul>

#### 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

### EU-Regulations

Restrictions on use	: None. Contains no substance on the REACH candidate list.
Other information, restriction and prohibition regulations Seveso Directive : 2012/18/EU (Seveso III)	<ul> <li>Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.</li> <li>Covered.</li> </ul>
National regulations	
Regulatory reference	: Ensure all national/local regulations are observed.
15.2. Chemical safety assessment	
	A CSA does not need to be carried out for this product.



## 9 Component mix in Carbon dioxide

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878 Reference number: SDS 00929

Indication of changes	: Safety data sheet in accordance with commission regulation (EU) No 2020/878.
Abbreviations and acronyms	<ul> <li>ATE - Acute Toxicity Estimate.</li> <li>CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008.</li> <li>REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.</li> <li>EINECS - European Inventory of Existing Commercial Chemical Substances.</li> <li>CAS# - Chemical Abstract Service number.</li> <li>PPE - Personal Protection Equipment.</li> <li>LC50 - Lethal Concentration to 50 % of a test population.</li> <li>RMM - Risk Management Measures.</li> <li>PBT - Persistent, Bioaccumulative and Toxic.</li> <li>vPvB - Very Persistent and Very Bioaccumulative.</li> <li>STOT - SE : Specific Target Organ Toxicity - Single Exposure.</li> <li>CSA - Chemical Safety Assessment.</li> <li>EN - European Standard.</li> <li>UN - United Nations.</li> <li>ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road.</li> <li>IATA - International Air Transport Association.</li> <li>IMDG code - International Maritime Dangerous Goods.</li> <li>RID - Regulations concerning the International Carriage of Dangerous Goods by Road.</li> <li>IATA - International Air Transport Association.</li> <li>IMDG code - International Maritime Dangerous Goods.</li> <li>RID - Regulations concerning the International Carriage of Dangerous Goods by Road.</li> <li>IATA - International Air Transport Association.</li> <li>IMDG code - International Maritime Dangerous Goods.</li> <li>RID - Regulations concerning the International Carriage of Dangerous Goods by Rail.</li> <li>WGK - Water Hazard Class.</li> <li>STOT - RE : Specific Target Organ Toxicity - Repeated Exposure.</li> </ul>
Training advice Further information	<ul> <li>UFI : Unique Formula Identifier.</li> <li>Ensure operators understand the flammability hazard.</li> <li>Classification using data from databases maintained by the European Industrial Gases Association (EIGA). Data is maintained in EIGA doc 169 : 'Classification and Labelling Guide', downloadable at : http://www.eiga.eu.</li> <li>Classification in accordance with the procedures and calculation methods of Regulation (EC) 1272/2008 (CLP).</li> </ul>

Full text of H- and EUH-statements	
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Asp. Tox. 1	Aspiration hazard, Category 1
Flam. Gas 1A	Flammable gases, Category 1A
Flam. Gas 1B	Flammable gases, Category 1B
Flam. Liq. 1	Flammable liquids, Category 1
Flam. Liq. 2	Flammable liquids, Category 2
H220	Extremely flammable gas.
H221	Flammable gas.
H224	Extremely flammable liquid and vapour.
H225	Highly flammable liquid and vapour.
H280	Contains gas under pressure; may explode if heated.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.



## 9 Component mix in Carbon dioxide

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878 Reference number: SDS 00929

H411	Toxic to aquatic life with long lasting effects.
Press. Gas (Comp.)	Gases under pressure : Compressed gas
Press. Gas (Liq.)	Gases under pressure : Liquefied gas
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis

#### DISCLAIMER OF LIABILITY

: Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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