Warning

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

1.1. Product identifier

Trade name : **Oxid uhličitý**
CO2 4.5 / CO2 4.8 / CO2 5.5
Messer Medical Carbon Dioxide LAP / CRYO
CO2 Technický
Gourmet C
Oxid uhličitý 4.5 / Oxid uhličitý 4.8 / Oxid uhličitý 5.5

SDS no : SK-CO2-018A
Other means of identification : Anhydrous ammonia
CAS-No. : 124-38-9
EC-No. : 204-696-9
EC Index-No. : ---

REACH registration No : Listed in Annex IV / V REACH, exempted from registration.

Chemical formula : CO_2

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

Relevant identified uses : Test gas/Calibration gas.
Purge gas, diluting gas, inerting gas.
Medical device.
Shield gas for welding processes.
Use for manufacture of electronic/photovoltaic components.
Laboratory use.
Food applications.
Industrial and professional uses.
Perform risk assessment prior to use.
Contact supplier for more information on uses.

Uses advised against : Consumer use.
Uses other than those listed above are not supported, contact your supplier for more information on other uses.
Attention: These products must not be applied to humans or animals unless they are expressly designated as medical or medicinal gases!.

1.3. Details of the supplier of the safety data sheet

Manufacturer
Messer Tatragas, spol. s r.o.
Chalupkova 9
P.O. Box SK- 819 44
SK– 81944 Bratislava
Slovenská republika
T +421 02 50254111
info.sk@messergroup.com - www.messer.sk

1.4. Emergency telephone number

Emergency telephone number : National Toxicology Information Centre Tel: + 421 2 5465 2307 Fax: + 421 2 5477 4605
Mobil: +421 911 166 066 E-mail: ntic@ntic.sk

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Physical hazards	Gases under pressure : Liquefied gas	H280

2.2. Label elements

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

Hazard pictograms (CLP) :

GHS04

Signal word (CLP) : Warning

Hazard statements (CLP) : H280 - Contains gas under pressure; may explode if heated.

Precautionary statements (CLP)

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

2.3. Other hazards

Asphyxiant in high concentrations.
Contact with liquid may cause cold burns/frostbite.
In high concentrations CO2 causes rapid circulatory insufficiency even at normal levels of oxygen concentration. Symptoms are headache, nausea and vomiting, which may lead to unconsciousness and death.
The substance/mixture has no endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.1. Substances

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 registration No: *1	100	Press. Gas (Liq.), H280

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.*

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

- Inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Perform cardiopulmonary resuscitation if breathing stopped.
- Skin contact : In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.
- Eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes.
- Ingestion : Ingestion is not considered a potential route of exposure.

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.
Low concentrations of CO2 cause increased respiration and headache.
See section 11.

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

None.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray or fog.
  Product does not burn, use fire control measures appropriate for the surrounding fire.
- Unsuitable extinguishing media : Do not use water jet to extinguish.

5.2. Special hazards arising from the substance or mixture

Specific hazards : Exposure to fire may cause containers to rupture/explode.
Hazardous combustion products : None.

5.3. Advice for firefighters

Specific methods : 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.
If possible, stop flow of product.
Use water spray or fog to knock down fire fumes if possible.
Move containers away from the fire area if this can be done without risk.

Special protective equipment for fire fighters : In confined space use self-contained breathing apparatus.
Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
Standard EN 469 - Protective clothing for firefighters. Standard EN 659 - Protective gloves for firefighters.
Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.

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.
Ensure adequate air ventilation.
Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
Stay upwind.
See section 8 of the SDS for more information on personal protective equipment.

For emergency responders : Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Oxygen detectors should be used when asphyxiating gases may be released.
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 cleaning up

Keep area evacuated and free from ignition sources until any spilled liquid has evaporated (ground free from frost).

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 : Containers, which contain or have contained flammable or explosive substances, must not be inerted with liquid carbon dioxide. Potential production of solid CO2 particles must be ruled out. In order to rule out potential electrostatic discharge production, the system must be adequately grounded.
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.
Do not breathe gas.
Avoid release of product into work area.

Safe handling of the gas receptacle : Refer to supplier's container handling instructions.
Do not allow backfeed into the container.
Protect containers from physical damage; do not drag, roll, slide or drop.
When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders.
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.
If user experiences any difficulty operating valve discontinue use and contact supplier.
Never attempt to repair or modify container valves or safety relief devices.
Damaged valves should be reported immediately to the supplier.
Keep container valve outlets clean and free from contaminants particularly oil and water.
Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment.
Close container valve after each use and when empty, even if still connected to equipment.
Never attempt to transfer gases from one cylinder/container to another.
Never use direct flame or electrical heating devices to raise the pressure of a container.
Do not remove or deface labels provided by the supplier for the identification of the content of the container.
Suck back of water into the container must be prevented.
Open valve slowly to avoid pressure shock.

7.2. Conditions for safe storage, including any incompatibilities

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.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Carbon dioxide (124-38-9)

EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Carbon dioxide
IOEL TWA	9000 mg/m³
IOEL TWA [ppm]	5000 ppm
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC
Austria - Occupational Exposure Limits	
Local name	Kohlenstoffdioxid
MAK (mg/m³)	9000 mg/m³
MAK (OEL TWA) [ppm]	5000 ppm
MAK (OEL STEL)	18000 mg/m³
MAK (OEL STEL) [ppm]	10000 ppm
Regulatory reference	BGBl. II Nr. 186/2015
Belgium - Occupational Exposure Limits	
Local name	Carbone (dioxyde de) # Koolstofdioxide
OEL TWA	9131 mg/m³
OEL TWA	5000 ppm
OEL STEL	54784 mg/m³
OEL STEL	30000 ppm
Remark	A: La mention A signifie que l'agent libère un gaz ou une vapeur qui n'ont en eux-mêmes aucun effet physiologique mais peuvent diminuer le taux d'oxygène dans l'air. Lorsque le taux d'oxygène descend en dessous de 17-18 % (vol/vol) le manque d'oxygène provoque des suffocations qu'aucun symptôme préalable n'annonce. # De vermelding A betekent dat dit agens gas of damp vrijgeeft dat of die op zich geen fysiologische werking heeft, maar het zuurstofgehalte in de lucht verlaagt. Wanneer het zuurstofgehalte daalt onder de 17-18 % (vol/vol), veroorzaakt het zuurstoftekort verstikking, die zich manifesteert zonder dat er een waarschuwing aan voorafgaat.
Regulatory reference	Koninklijk besluit/Arrêté royal 11/03/2002
Bulgaria - Occupational Exposure Limits	
Local name	Въглероден диоксид
OEL TWA	9000 mg/m³
OEL TWA	5000 ppm
Remark	• (Химични агенти, за които са определени гранични стойности във въздуха на работната среда за Европейската общност)
Regulatory reference	Наредба № 13 от 30.12.2003 г. за защита на работещите от рискове, свързани с експозиция на химични агенти при работа

Croatia - Occupational Exposure Limits	
Local name	Ugljikov dioksid
GVI (OEL TWA) [1]	9000 mg/m³
GVI (OEL TWA) [2]	5000 ppm
Remark	EU** (naznaka da se radi o tvarima za koje su utvrđene indikativne granične vrijednosti izloženosti prema Direktivi 2006/15/ EC (druga lista))
Regulatory reference	Pravilnik o izmjenama i dopunama Pravilnika o graničnim vrijednostima izloženosti opasnim tvarima pri radu i o biološkim graničnim vrijednostima (NN, br. 75/13)
Czech Republic - Occupational Exposure Limits	
Local name	Oxid uhli itý
PEL (OEL TWA)	9000 mg/m³
PEL (OEL TWA) [ppm]	5000 ppm
NPK-P (OEL C)	45000 mg/m³
NPK-P (OEL C) [ppm]	25020 ppm
Regulatory reference	Předpis 88/2016 Sb.
Denmark - Occupational Exposure Limits	
Local name	Carbondioxid (Kuldioxid; Kulsyre)
OEL TWA [1]	9000 mg/m³
OEL TWA [2]	5000 ppm
Regulatory reference	BEK nr 986 af 11/10/2012
Estonia - Occupational Exposure Limits	
Local name	Süsinikdioksiid
OEL TWA	9000 mg/m³
OEL TWA	5000 ppm
Regulatory reference	Vabariigi Valitsuse 18. septembri 2001. a määruse nr 293
Finland - Occupational Exposure Limits	
Local name	Hiilidioksidi
HTP (OEL TWA) [1]	9100 mg/m³
HTP (OEL TWA) [2]	5000 ppm
Regulatory reference	HTP-ARVOT 2014 (Sosiaali- ja terveysministeriö)
France - Occupational Exposure Limits	
Local name	Dioxyde de carbone
VME (OEL TWA)	9000 mg/m³
VME (OEL TWA) [ppm]	5000 ppm
Remark	Valeurs règlementaires indicatives
Regulatory reference	Arrêté du 30 juin 2004 modifié (réf.: INRS ED 984, 2012)

Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Kohlenstoffdioxid
AGW (OEL TWA) [1]	9100 mg/m³
AGW (OEL TWA) [2]	5000 ppm
Remark	DFG,EU
Regulatory reference	TRGS900
Greece - Occupational Exposure Limits	
OEL TWA	9000 mg/m³
OEL TWA	5000 ppm
OEL STEL	54000 mg/m³
Hungary - Occupational Exposure Limits	
Local name	SZÉN-DIOXID
AK (OEL TWA)	9000 mg/m³
Ireland - Occupational Exposure Limits	
Local name	Carbon dioxide
OEL TWA [1]	9000 mg/m³
OEL TWA [2]	5000 ppm
OEL STEL	27000 mg/m³
OEL STEL	15000 ppm
Regulatory reference	Code of Practice for the Chemical Agents Regulations 2016
Italy - Occupational Exposure Limits	
Local name	Anidride carbonica
OEL TWA	9000 mg/m³
OEL TWA	5000 ppm
Regulatory reference	Allegato XXXVIII del D.Lgs. 9 aprile 2008, n. 81 e s.m.i.
Latvia - Occupational Exposure Limits	
Local name	Oglekļadioksīds
OEL TWA	9000 mg/m³
OEL TWA	5000 ppm
Regulatory reference	Ministru kabineta 2007.gada 15.maija noteikumiem Nr.325
Lithuania - Occupational Exposure Limits	
Local name	Anglies dioksidas
IPRV (OEL TWA)	9000 mg/m³
IPRV (OEL TWA) [ppm]	5000 ppm
Regulatory reference	LIETUVOS HIGIENOS NORMA HN 23:2011
Luxembourg - Occupational Exposure Limits	
Local name	Dioxyde de carbone

OEL TWA	9000 mg/m³
OEL TWA	5000 ppm
Regulatory reference	Mémorial A Nº 96
Malta - Occupational Exposure Limits	
Local name	Carbondioxide
OEL TWA	9000 mg/m³
OEL TWA	5000 ppm
Regulatory reference	S.L.424.24
Netherlands - Occupational Exposure Limits	
Local name	Kooldioxide
TGG-8u (OEL TWA)	9000 mg/m³
Regulatory reference	Arbeidsomstandighedenregeling 2015
Poland - Occupational Exposure Limits	
Local name	Ditlenek węgla 7
NDS (OEL TWA)	9000 mg/m³
NDSCh (OEL STEL)	27000 mg/m³
Regulatory reference	Dz.U. 2014 poz. 817
Portugal - Occupational Exposure Limits	
Local name	Dióxido de carbono
OEL TWA	5000 ppm
OEL STEL	30000 ppm
Regulatory reference	Norma Portuguesa NP 1796:2014
Romania - Occupational Exposure Limits	
Local name	Bioxid de carbon
OEL TWA	9000 mg/m³
OEL TWA	5000 ppm
Regulatory reference	Legea 319/2006 privind Securitatea şi sănătatea în muncă şi HG nr. 1/2012 de modificare şi completare a HG 1218/2006
Slovakia - Occupational Exposure Limits	
Local name	Oxid uhličitý
NPHV (OEL TWA) [1]	9000 mg/m³
NPHV (OEL TWA) [2]	5000 ppm
Regulatory reference	Nariadenie vlády č. 355/2006 Z. z.
Slovenia - Occupational Exposure Limits	
Local name	ogljikov dioksid
OEL TWA	9000 mg/m³
OEL TWA	5000 ppm

Regulatory reference	Uradni list RS, št. 102/2010 z dne 17.12.2010
Spain - Occupational Exposure Limits	
Local name	Dióxido de carbono
VLA-ED (OEL TWA) [1]	9150 mg/m³
VLA-ED (OEL TWA) [2]	5000 ppm
Remark	VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo).
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2017. INSHT
Sweden - Occupational Exposure Limits	
Local name	Koldioxid
NGV (OEL TWA)	9000 mg/m³
NGV (OEL TWA) [ppm]	5000 ppm
KGV (OEL STEL)	18000 mg/m³
KGV (OEL STEL) [ppm]	10000 ppm
Regulatory reference	Hygieniska gränsvärden (AFS 2015:7)
United Kingdom - Occupational Exposure Limits	
Local name	Carbon dioxide
WEL TWA (OEL TWA) [1]	9150 mg/m³
WEL TWA (OEL TWA) [2]	5000 ppm
WEL STEL (OEL STEL)	27400 mg/m³
WEL STEL (OEL STEL) [ppm]	15000 ppm
Regulatory reference	EH40. HSE
Iceland - Occupational Exposure Limits	
Local name	Koldíoxíð (koltvísýringur, kolsýra)
OEL TWA	9000 mg/m³
OEL TWA	5000 ppm
Regulatory reference	Reglugerð um mengunarmörk og aðgerðir til að draga úr mengun á vinnustöðum (Nr. 390/2009)
Norway - Occupational Exposure Limits	
Local name	Karbondioksid
Grenseverdi (OEL TWA) [1]	9000 mg/m³
Grenseverdi (OEL TWA) [2]	5000 ppm
Regulatory reference	Arbeidstilsynet. Forskrift, best.nr. 704
Switzerland - Occupational Exposure Limits	
Local name	Kohlendioxid
MAK (OEL TWA) [1]	9000 mg/m³
MAK (OEL TWA) [2]	5000 ppm

Remark	Asphyxie - NIOSH
Regulatory reference	SUVA - Grenzwerte am Arbeitsplatz 2016
USA - ACGIH - Occupational Exposure Limits	
Local name	Carbon dioxide
ACGIH OEL TWA [ppm]	5000 ppm
ACGIH OEL STEL [ppm]	30000 ppm
Remark (ACGIH)	Asphyxia
Regulatory reference	ACGIH 2017

DNEL (Derived-No Effect Level) : None available.

PNEC (Predicted No-Effect Concentration) : None available.

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate general and local exhaust ventilation.
Systems under pressure should be regularily checked for leakages.
Ensure exposure is below occupational exposure limits (where available).
Oxygen detectors should be used when asphyxiating gases may be released.
Consider the use of a work permit system e.g. for maintenance activities.
CO2 detectors should be used when CO2 may be released.

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 goggles when transfilling or breaking transfer connections.
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 risks, performance level 1 or higher.
Wear cold insulating gloves when transfilling or breaking transfer connections.
Standard EN 511 - Cold insulating gloves.

- Other : Wear safety shoes while handling containers.
Standard EN ISO 20345 - Personal protective equipment - Safety footwear.

• Respiratory protection : Gas filters may be used if all surrounding conditions e.g. type and concentration of the contaminant(s) and duration of use are known.
Use gas filters with full face mask, where exposure limits may be exceeded for a short-term period, e.g. connecting or disconnecting containers.
Gas filters do not protect against oxygen deficiency.
Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres.
Self contained breathing apparatus is recommended, where unknown exposure may be expected, e.g. during maintenance activities on installation systems.
Standard EN 14387 - Gas filter(s), combined filter(s) and standard EN136, full face masks .
Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.

• Thermal hazards : None in addition to the above sections.

8.2.3. Environmental exposure controls

None necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance		
- Physical state at 20°C / 101.3kPa	:	Gas.
- Colour	:	Colourless.
Odour	:	No odour warning properties.
Melting point / Freezing point	:	-78.5 °C At atmospheric pressure dry ice sublimes into gaseous carbon dioxide.
Boiling point	:	-56.6 °C
Flammability	:	Non flammable.
Lower explosion limit	:	Not available
Upper explosion limit	:	Not available
Flash point	:	Not applicable for gases and gas mixtures.
Auto-ignition temperature	:	Non flammable.
Decomposition temperature	:	Not applicable.
pH	:	Not applicable for gases and gas mixtures.
Viscosity, kinematic	:	No reliable data available.
Water solubility [20°C]	:	2000 mg/l Completely soluble.
Partition coefficient n-octanol/water (Log Kow)	:	Not applicable for gas mixtures.
Vapour pressure [20°C]	:	57.3 bar(a)
Vapour pressure [50°C]	:	Not applicable.
Density and/or relative density	:	Not applicable.
Relative vapour density (air=1)	:	1.52
Particle characteristics	:	Not applicable for gases and gas mixtures.

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Explosive properties	:	Not applicable.
Explosion limits	:	Non flammable.
Oxidising properties	:	Not applicable.
Critical temperature [°C]	:	30 °C

9.2.2. Other safety characteristics

Molar mass	:	44 g/mol
Evaporation rate	:	Not applicable for gases and gas mixtures.
Gas group	:	Press. Gas (Liq.).
Other data	:	Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

None under recommended storage and handling conditions (see section 7).

10.4. Conditions to avoid

Avoid moisture in installation systems.

10.5. Incompatible materials

For additional information on compatibility refer to ISO 11114.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

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

Acute toxicity	:	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 dioxide's stimulatory effects on the respiratory and circulatory systems. For more information, see 'EIGA Safety Info 24: Carbon Dioxide, Physiological Hazards' at www.eiga.eu.
Skin corrosion/irritation	:	No known effects from this product.
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	:	No known effects from this product.
Toxic for reproduction : unborn child	:	No known effects from this product.
STOT-single exposure	:	No known effects from this product.
STOT-repeated exposure	:	No known effects from this product.
Aspiration hazard	:	Not applicable for gases and gas mixtures.

11.2. Information on other hazards

Other information	:	The substance/mixture has no endocrine disrupting properties.

SECTION 12: Ecological information

12.1. Toxicity

Assessment	:	No ecological damage caused by this product.
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 ecological damage caused by this product. Not expected to bioaccumulate due to the low log Kow (log Kow < 4). See section 9.

12.4. Mobility in soil

Assessment	:	Because of its high volatility, the product is unlikely to cause ground or water pollution. Partition into soil is unlikely.

12.5. Results of PBT and vPvB assessment

Assessment	:	No data available. Not classified as PBT or vPvB.

12.6. Endocrine disrupting properties

Assessment	:	The substance/mixture has no endocrine disrupting properties.

12.7. Other adverse effects

Other adverse effects	:	No known effects from this product.
Effect on the ozone layer	:	None.
Global warming potential [CO2=1]	:	1

Effect on global warming	:	When discharged in large quantities may contribute to the greenhouse effect. Contains greenhouse gas(es).

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Discharge to atmosphere in large quantities should be avoided.
Do not discharge into any place where its accumulation could be dangerous.
May be vented to atmosphere in a well ventilated place.
Return unused product in original container to supplier.

List of hazardous waste codes (from Commission Decision 2000/532/EC as amended)	:	16 05 05 : Gases in pressure containers other than those mentioned in 16 05 04.

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.	:	1013

14.2. UN proper shipping name

Transport by road/rail/inland waterways (ADR/RID/ADN)	:	CARBON DIOXIDE
Transport by air (ICAO-TI / IATA-DGR)	:	Carbon dioxide
Transport by sea (IMDG)	:	CARBON DIOXIDE

14.3. Transport hazard class(es)

Labelling :

2.2 : Non flammable, non-toxic gases.

Transport by road/rail/inland waterways (ADR/RID/ADN)

Class	:	2
Classification code	:	2A
Hazard identification number	:	20
Tunnel Restriction	:	C/E - Tank carriage : Passage forbidden through tunnels of category C, D and E. Other carriage : Passage forbidden through tunnels of category E

Transport by air (ICAO-TI / IATA-DGR)

Class / Div. (Sub. risk(s))	:	2.2

Transport by sea (IMDG)

Class / Div. (Sub. risk(s))	:	2.2
Emergency Schedule (EmS) - Fire	:	F-C
Emergency Schedule (EmS) - Spillage	:	S-V

14.4. Packing group

Transport by road/rail/inland waterways (ADR/RID/ADN)	:	Not applicable.
Transport by air (ICAO-TI / IATA-DGR)	:	Not applicable.
Transport by sea (IMDG)	:	Not applicable.

14.5. Environmental hazards

Transport by road/rail/inland waterways (ADR/RID/ADN)	:	None.
Transport by air (ICAO-TI / IATA-DGR)	:	None.
Transport by sea (IMDG)	:	None.

14.6. Special precautions for user

Packing Instruction(s)

Transport by road/rail/inland waterways (ADR/RID/ADN)	:	P200.
Transport by air (ICAO-TI / IATA-DGR)		
Passenger and Cargo Aircraft	:	200.
Cargo Aircraft only	:	200.
Transport by sea (IMDG)	:	P200.

Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment.
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.
Before transporting product containers:
- Ensure there is adequate ventilation.
- Ensure that containers are firmly secured.
- Ensure valve is closed and not leaking.
- Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
- Ensure valve protection device (where provided) is correctly fitted.

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.
Other information, restriction and prohibition regulations	:	Ensure all national/local regulations are observed. None. Not listed on the PIC list (Regulation EU 649/2012). Not listed on the POP list (Regulation EU 2019/1021).
Seveso Directive : 2012/18/EU (Seveso III)	:	Not covered.

National regulations

Water hazard class (WGK)	:	nwg - Non-hazardous to water.
Kenn-Nr.	:	256

15.2. Chemical safety assessment

A CSA does not need to be carried out for this product.

SECTION 16: Other information

Indication of changes : Revised safety data sheet in accordance with commission regulation (EU) No 2020/878.

Abbreviations and acronyms	:	ATE - Acute Toxicity Estimate. CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008. REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006. EINECS - European Inventory of Existing Commercial Chemical Substances. CAS# - Chemical Abstract Service number. PPE - Personal Protection Equipment. LC50 - Lethal Concentration to 50 % of a test population. RMM - Risk Management Measures. PBT - Persistent, Bioaccumulative and Toxic. vPvB - Very Persistent and Very Bioaccumulative. STOT- SE : Specific Target Organ Toxicity - Single Exposure. CSA - Chemical Safety Assessment. EN - European Standard. UN - United Nations. ADR - Agreement concerning the International Carriage of Dangerous Goods by Road. IATA - International Air Transport Association. IMDG code - International Maritime Dangerous Goods. RID - Regulations concerning the International Carriage of Dangerous Goods by Rail. WGK - Water Hazard Class. STOT - RE : Specific Target Organ Toxicity - Repeated Exposure. UFI : Unique Formula Identifier.
Training advice	:	The hazard of asphyxiation is often overlooked and must be stressed during operator training. For more guidance, refer to EIGA SL 01 “Dangers of Asphyxiation”, downloadable at http://www.eiga.eu..
Further information	:	Classification in accordance with the procedures and calculation methods of Regulation (EC) 1272/2008 (CLP). Key literature references and sources of data are maintained in EIGA doc 169 : 'Classification and Labelling Guide', downloadable at http://www.Eiga.eu .

Full text of H- and EUH-statements	
H280	Contains gas under pressure; may explode if heated.
Press. Gas (Liq.)	Gases under pressure : Liquefied gas

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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