

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

1.1. Product identifier

Product form	: Mixture		
Product name	: Extinguishing agent cylinder under pressure		
Product group	: Trade product		
Other means of identification	: Product code	Sales reference	CO2 filling
	S54476-C660-A4	CYF-40 30 CO2	30kg
	S54476-C660-A1	CYF-67 50 CO2	50kg
	S54476-C660-A2	CYF-80 60 CO2	60kg
	S54476-C660-A5	CYF-67 45 CO2	45kg
	S54476-C7-A2	Gas cyl. 30kg Sinorix CO2	30kg
	S54476-C4-A3	Gas cyl. 45kg Sinorix CO2	45kg
	S54476-C4-A6	Gas cyl. 50kg Sinorix CO2	50kg
	S54476-C4-A8	Gas cyl. 60kg Sinorix CO2	60kg
Reference number	: A6V12463076		

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

Relevant identified uses

Use of the substance/mixture : - Extinguishing agent
 Reserved for professional users

Uses advised against

Restrictions on use : Other consumer uses

1.3. Details of the supplier of the safety data sheet

Siemens Schweiz AG
 Theilerstrasse 1a
 CH-6300 Zug
 +41 58 724 24 24
 fs.support.sbt@siemens.com

1.4. Emergency telephone number

Emergency number : For the emergency telephone number for your own country, please contact the relevant local authorities and visit the ECHA (European Chemicals Agency) website:
http://echa.europa.eu/help/nationalhelp_contact_en.asp

Emergency contact (24/24) GBK / Infotrac ID 102973
 International phone (001) 352 323 3500

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Gases under pressure : Compressed gas H280

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

Adverse physicochemical, human health and environmental effects

Contains gas under pressure; may explode if heated.

Other hazards which do not result in classification None.

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2.2. Label elements

Labelling according to the 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)

: P403 - Store in a well-ventilated place.

Extra phrases

: EIGA-As: Asphyxiant in high concentrations.

2.3. Other hazards

Other hazards which do not result in classification : None.

Not classified in PBT.

Not classified in vPvB.

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

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	< 100	Press. Gas (Liq.), H280
(R)-p-mentha-1,8-diene ; d-limonene (substance with national workplace exposure limit(s))	CAS-No.: 5989-27-5 EC-No.: 227-813-5 EC Index-No.: 601-096-00-2	< 0,05	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 3, H412
propan-2-ol; isopropyl alcohol; isopropanol (substance with national workplace exposure limit(s))	CAS-No.: 67-63-0 EC-No.: 200-661-7 EC Index-No.: 603-117-00-0	< 0,05	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
ISOTRIDECAN-1-OL (substance with national workplace exposure limit(s))	CAS-No.: 27458-92-0 EC-No.: 248-469-2	< 0,005	Skin Irrit. 2, H315 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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

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SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Can cause asphyxia at high concentration. Symptoms may be loss of consciousness or motor control.
The victim may not realize the asphyxiation.
Wear isolating breathing apparatus and move the victim to an uncontaminated area.
Keep the victim warm and call a doctor.
Perform artificial respiration if breathing has stopped.
- First-aid measures after inhalation : Can cause asphyxia at high concentration. Symptoms may be loss of consciousness or motor control.
The victim may not realize the asphyxiation.
Wear isolating breathing apparatus and move the victim to an uncontaminated area.
Keep the victim warm and call a doctor.
Perform artificial respiration if breathing has stopped. Low concentrations of CO₂ cause an increase in respiratory rate and headaches.
- First-aid measures after skin contact : Contact with the evaporating liquid may cause frostbite or freezing of the skin.
- First-aid measures after eye contact : Flush eyes with water immediately. Remove contact lenses, if present and easy to remove. Continue rinsing. Rinse thoroughly with water for at least 15 minutes. Get immediate medical assistance. If medical assistance is not available immediately, flush for an additional 15 minutes.
- First-aid measures after ingestion : Ingestion is not considered a possible mode of exposure.

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

No additional information available

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

Respiratory arrest. Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling. Treatment: Thaw the frozen parts with warm water. Do not rub the affected area. Get medical advice / immediate medical attention.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : This product does not burn. In case of fire in the vicinity: Use a suitable fire extinguisher agent.
- Unsuitable extinguishing media : None.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : General Fire Hazards: Heat can cause containers to explode.
- Hazardous decomposition products when fire : None.

5.3. Advice for firefighters

- Firefighting instructions : Continue to spray with water from a protected area until the container is cold.
Use extinguishing agents to contain the fire. Isolate the source from the fire or let it burn.
- Protection when fire : Fire-fighters must wear standard protective equipment, including flame retardant clothing, face mask helmet, gloves, rubber boots and, in enclosed spaces, self-contained breathing apparatus.
Guideline: EN 469:2005: Protective clothing for fire-fighters.
Performance requirements for fire-fighting protective clothing.
EN 15090: Shoes for fire-fighters.
EN 659: Protective gloves for fire-fighters.
EN 443: Helmets for fire fighting in buildings and other structures.
EN 137: Respiratory protection devices - Independent open circuit compressed air breathing apparatus with full face mask - requirements, testing, marking.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Wear insulating breathing apparatus when entering the area, unless you have checked that the area is safe.
GUIDELINE, EN 137: Respiratory protection devices - Independent open circuit compressed air breathing apparatus with full face mask - requirements, testing, marking.
- Emergency procedures : Evacuate the area. Ensure effective ventilation.
Prevent discharge into sewers, basements, or anywhere where accumulation can be dangerous.

6.1.2. For emergency responders

- Protective equipment : Wear insulating breathing apparatus when entering the area, unless you have checked that the area is safe.
GUIDELINE, EN 137: Respiratory protection devices - Independent open circuit compressed air breathing apparatus with full face mask - requirements, testing, marking.
- Emergency procedures : Evacuate the area. Ensure effective ventilation.
Prevent discharge into sewers, basements, or anywhere where accumulation can be dangerous.

6.2. Environmental precautions

Stem the leak if it can be done safely.

6.3. Methods and material for containment and cleaning up

- Other information : Ensure effective ventilation.

6.4. Reference to other sections

See also sections 8 and 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processing

: Safety when handling the gas container:

Refer to the supplier's instructions for handling the container.

Do not allow products to rise in the container.

Protect the bottles from physical damage, do not pull, roll, slide or drop them.

To move the bottles, even over a short distance, use a trolley (bottle roller, etc.), designed for transporting bottles.

Leave the valve protection cap in place until the container is secured again either by a wall or a bracket or placed in a container or put into position for use.

Never attempt to repair or modify a container valve or its pressure relief devices.

Damaged taps must be reported immediately to the supplier. Keep tap outlets of containers clean and uncontaminated, especially with oil or water.

If the container has been equipped with it, as soon as it has been disconnected from the plant, replace the valve outlet cap or plug.

Never attempt to transfer gases from one cylinder/container to another.

Never use a direct flame or electric heating to increase the pressure in the container.

Do not remove or damage the labels provided by the supplier to identify the contents of the bottle.

Prevent water from being sucked into the container.

Precautions for safe handling

: To avoid the risk of electrostatic discharge, the system must be properly earthed.

The product must be handled in accordance with good industrial hygiene and safety procedures.

Only persons with experience and appropriate training may handle gases under pressure.

Consider adding pressure relief valve(s) to the plant.

Make sure that the entire gas plant has been (or is regularly) checked for leaks before use.

Do not smoke while handling the product.

Use only the specified equipment, appropriate for this product, its pressure and temperature of use. Contact your gas supplier in case of doubt.

Avoid backflow of water, acids and alkalis. Do not inhale the gas. Avoid exposing the product to the air.

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7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Observe all local regulations and requirements for the storage of containers.

Containers must not be stored under conditions that may aggravate corrosion.

Container valve guards or caps must be in place.

Containers must be stored in an upright position and secured to prevent them from falling out.

Containers in stock must be periodically checked for their general condition and the absence of leaks.

Store the container in a well-ventilated place at a temperature below 50°C.

Store containers in places not exposed to the risk of fire and away from sources of heat and ignition.

Keep away from combustible materials.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Carbon dioxide (124-38-9)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	Carbon dioxide
IOEL TWA [ppm]	5000 ppm
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC
France - Occupational Exposure Limits	
Local name	Carbone (dioxyde de)
VME (OEL TWA)	9000 mg/m ³
VME (OEL TWA) [ppm]	5000 ppm
Remark	Valeurs réglementaires indicatives
Regulatory reference	Arrêté du 30 juin 2004 modifié (réf.: INRS ED 984, 2016)
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Kohlenstoffdioxid
AGW (OEL TWA) [1]	9100 mg/m ³
AGW (OEL TWA) [2]	5000 ppm
Peak exposure limitation factor	2(II)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission); EU - Europäische Union (Von der EU wurde ein Luftgrenzwert festgelegt: Abweichungen bei Wert und Spitzenbegrenzung sind möglich)
Regulatory reference	TRGS900
United Kingdom - Occupational Exposure Limits	
Local name	Carbon dioxide
WEL TWA (OEL TWA) [1]	9150 mg/m ³
WEL TWA (OEL TWA) [2]	5000 ppm
WEL STEL (OEL STEL)	27400 mg/m ³

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Carbon dioxide (124-38-9)	
WEL STEL (OEL STEL) [ppm]	15000 ppm
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE
USA - ACGIH - Occupational Exposure Limits	
Local name	Carbon dioxide
ACGIH OEL TWA [ppm]	5000 ppm
ACGIH OEL STEL [ppm]	30000 ppm
Remark (ACGIH)	TLV® Basis: Asphyxia
Regulatory reference	ACGIH 2021

(R)-p-mentha-1,8-diene ; d-limonene (5989-27-5)	
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	(R)-p-Mentha-1,8-dien (D-Limonen)
AGW (OEL TWA) [1]	28 mg/m ³
AGW (OEL TWA) [2]	5 ppm
Peak exposure limitation factor	4(II)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission); H - hautresorptiv; Sh - Hautsensibilisierender Stoff; Y - Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden
Regulatory reference	TRGS900

propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)	
France - Occupational Exposure Limits	
Local name	Alcool isopropylique
VLE (OEL C/STEL)	980 mg/m ³
VLE (OEL C/STEL) [ppm]	400 ppm
Remark	Valeurs recommandées/admises
Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 984, 2016)
Germany - Occupational Exposure Limits (TRGS 900)	
AGW (OEL TWA) [1]	500 mg/m ³
AGW (OEL TWA) [2]	200 ppm
Peak exposure limitation factor	2(II)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission); Y - Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden
Regulatory reference	TRGS900
Germany - Biological limit values (TRGS 903)	
Local name	Propan-2-ol
Biological limit value	25 mg/l Parameter: Aceton - Untersuchungsmaterial: B = Vollblut, U = Urin - Probenahmezeitpunkt: b) Expositionsende, bzw. Schichtende - Festlegung/Begründung: 11/2012 DFG 25 mg/l Parameter: Aceton - Untersuchungsmaterial: U = Urin - Probenahmezeitpunkt: b) Expositionsende, bzw. Schichtende - Festlegung/Begründung: 11/2012 DFG
Regulatory reference	TRGS 903
United Kingdom - Occupational Exposure Limits	
Local name	Propan-2-ol

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propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)	
WEL TWA (OEL TWA) [1]	999 mg/m ³
WEL TWA (OEL TWA) [2]	400 ppm
WEL STEL (OEL STEL)	1250 mg/m ³
WEL STEL (OEL STEL) [ppm]	500 ppm
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

ISOTRIDECAN-1-OL (27458-92-0)	
Germany - Occupational Exposure Limits (TRGS 900)	
AGW (OEL TWA) [1]	21 mg/m ³
AGW (OEL TWA) [2]	2.56 ppm
Peak exposure limitation factor	2(II)
Remark	AGS - Ausschuss für Gefahrstoffe; 11 - Summe aus Dampf und Aerosolen; Y - Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden
Regulatory reference	TRGS900

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Apply a work permit system, for example for maintenance activities.

Ensure suitable air ventilation.

Ensure adequate ventilation, including suitable source vacuum ventilation to ensure that the occupational exposure limit is not exceeded.

Oxygen sensors should be used when asphyxiating gases can be released.

Pressurized systems should be tested regularly for leaks.

Preferably use permanent connections (e.g. welded pipes).

Do not eat, drink or smoke when using. CO₂ sensors must be used when CO₂ may be released.

8.2.2. Personal protection equipment

Personal protective equipment:

General information:

A risk evaluation must be held and documented in each working zone in order to evaluate the risks associated with using the product, and to choose the PPE which corresponds to these risks.

You must consider the following recommendations. Ensure access to autonomous breathing equipment, ready to use if necessary.

The choice of personal protection equipment for the body should be based on the task in question and the associated risks.

8.2.2.1. Eye and face protection

Eye protection:
Safety glasses, goggles or a face shield conforming to EN166 must be used to prevent exposure to liquid splashes. Wear eye protection conforming to EN 166 when using gas. Directive: EN 166 Personal eye protection.

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8.2.2.2. Skin protection

Skin and body protection:

No special requirements.

Hand protection:

Wear handling gloves when handling packages.

Guideline: EN 388: gloves.

Other skin protection

Materials for protective clothing:

Wear safety shoes when handling packages.

Guideline: EN ISO 20345: Personal protective equipment - Safety footwear.

8.2.2.3. Respiratory protection

Respiratory protection:

Not required.

8.2.2.4. Thermal hazards

Thermal hazard protection:

No precautions are necessary.

8.2.3. Environmental exposure controls

Environmental exposure controls:

For waste disposal, see SDS section 13.

Other information:

Hygiene measures: Specific risk management measures are not required provided occupational health and safety rules and procedures are followed.

Do not eat, drink or smoke when using.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Colour	: Colourless.
Appearance	: Liquefied gas.
Odour	: Odourless.
Odour threshold	: Detection of thresholds by odour is subjective and inappropriate for warning of overexposure.
Melting point	: -56.6°C (carbon dioxide)
Freezing point	: Not applicable
Boiling point	: -78.5°C (carbon dioxide)
Flammability	: This product is not flammable.
Explosive limits	: Not available
Lower explosion limit	: Not available

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Upper explosion limit	: Not available
Flash point	: Not applicable for gases and gas mixtures.
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
pH	: 3.2 - 3.7 pH of saturated CO ₂ solutions ranges from 3.7 to 101 kPa (1 ATM) to 3.2 to 2370 kPa ((23.4 ATM) (carbon dioxide)
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: 0.07 MPa.s (20°C) (carbon dioxide)
Solubility	: Water: 2.900 mg/L (25°C) (carbon dioxide)
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: 45.1 bar (10°C) (carbon dioxide)
Vapour pressure at 50 °C	: Not available
Density	: Not applicable
Relative density	: 1.512 (-56°C) (carbon dioxide)
Relative vapour density at 20 °C	: Not available
Particle size	: Not applicable
Particle size distribution	: Not applicable
Particle shape	: Not applicable
Particle aspect ratio	: Not applicable
Particle aggregation state	: Not applicable
Particle agglomeration state	: Not applicable
Particle specific surface area	: Not applicable
Particle dustiness	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Critical temperature : 31°C (carbon dioxide)

9.2.2. Other safety characteristics

Other properties : 44.01 g/mol (carbon dioxide)

Additional information : Gas or vapour heavier than air. Can accumulate in confined areas, especially at or below ground level.

SECTION 10: Stability and reactivity

10.1. Reactivity

No danger of reactivity other than the effects described in the sub-paragraphs below.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

None.

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10.5. Incompatible materials

No reaction with any common materials in dry or wet conditions.

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 (ORAL) : Not classified

ACUTE TOXICITY (DERMAL) : Not classified

ACUTE TOXICITY (INHALATION) : Not classified

ADDITIONAL INFORMATION : Based on the available data, the classification criteria are not met.

SKIN CORROSION/IRRITATION : Not classified

pH: 3.2 - 3.7 pH of saturated CO₂ solutions ranges from 3.7 to 101 kPa (1 ATM) to 3.2 to 2370 kPa ((23.4 ATM) (carbon dioxide)

Additional information : Based on the available data, the classification criteria are not met.

SERIOUS EYE DAMAGE/IRRITATION : Not classified

pH: 3.2 - 3.7 pH of saturated CO₂ solutions ranges from 3.7 to 101 kPa (1 ATM) to 3.2 to 2370 kPa ((23.4 ATM) (carbon dioxide)

Additional information : Based on the available data, the classification criteria are not met.

RESPIRATORY OR SKIN SENSITISATION : Not classified

Additional information : Based on the available data, the classification criteria are not met.

GERM CELL MUTAGENICITY : Not classified

Additional information : Based on the available data, the classification criteria are not met.

CARCINOGENICITY : Not classified

Additional information : Based on the available data, the classification criteria are not met.

(R)-p-mentha-1,8-diene ; d-limonene (5989-27-5)

IARC group	3 - Not classifiable
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REPRODUCTIVE TOXICITY : Not classified

Additional information : Based on the available data, the classification criteria are not met.

STOT-SINGLE EXPOSURE : Not classified

Additional information : Based on the available data, the classification criteria are not met.

propan-2-ol; isopropyl alcohol; isopropanol (67-63-0)

STOT-single exposure	May cause drowsiness or dizziness.
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STOT-REPEATED EXPOSURE : Not classified

Additional information : Based on the available data, the classification criteria are not met.

ASPIRATION HAZARD : Not classified

Additional information : Not applicable to gases and gas mixtures.

INFORMATION ON THE LIKELY ROUTES OF EXPOSURE :

Dermal contact : No data available

Eyes contact : No data available

Inhalation : No data available

Ingestion : No data available

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

No additional information available

11.2.2 Other information

Other information : At high concentrations, can cause rapid deterioration in blood circulation even at normal oxygen concentration levels. Symptoms include headache, nausea and vomiting, which can cause loss of consciousness and even death.

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

Not rapidly degradable

Additional information : No environmental damage caused by this product.

12.2. Persistence and degradability

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Additional information : Not applicable for gases and gas mixtures.

12.3. Bioaccumulative potential

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Bioaccumulative potential : The product is assumed to be biodegradable; its persistence in aquatic environments is expected to be low.

12.4. Mobility in soil

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Additional information : Because of its high volatility, the product is unlikely to cause pollution of the land or water.

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12.5. Results of PBT and vPvB assessment

Extinguishing agent cylinder under pressure
Not classified in PBT.
Not classified in vPvB.

12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : No environmental damage caused by this product.

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Do not release in any place where its accumulation could be dangerous. Discharge to the atmosphere and in a well ventilated place.

Additional information : Disposal methods:
Refer to the EIGA Code of Practice (Doc. 30 "Gas Layout", downloadable at <http://www.eiga.org>) for more advice on appropriate methods of use.
Have the cylinder collected up by the supplier only.
Release, treatment and disposal may be subject to national, regional or local laws.

European List of Waste (LoW) code : Container:
16 05 05: Gases in pressure receptacles other than those mentioned in 16 05 04.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

14.1. UN number or ID number

UN-No. (ADR) : UN 1013

UN-No. (IMDG) : UN 1013

UN-No. (IATA) : UN 1013

UN-No. (ADN) : UN 1013

UN-No. (RID) : UN 1013

14.2. UN proper shipping name

Proper Shipping Name (ADR) : CARBON DIOXIDE

Proper Shipping Name (IMDG) : CARBON DIOXIDE

Proper Shipping Name (IATA) : CARBON DIOXIDE

Proper Shipping Name (ADN) : CARBON DIOXIDE

Proper Shipping Name (RID) : CARBON DIOXIDE

Transport document description (ADR) : UN 1013 CARBON DIOXIDE, 2.2, (C/E)

Transport document description (IMDG) : UN 1013 CARBON DIOXIDE, 2.2

Transport document description (IATA) : UN 1013 CARBON DIOXIDE, 2.2

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Transport document description (ADN) : UN 1013 CARBON DIOXIDE, 2.2

Transport document description (RID) : UN 1013 CARBON DIOXIDE, 2.2

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 2.2

Danger labels (ADR) : 2.2

:



IMDG

Transport hazard class(es) (IMDG) : 2.2

Danger labels (IMDG) : 2.2

:



IATA

Transport hazard class(es) (IATA) : 2.2

Danger labels (IATA) : 2.2

:



ADN

Transport hazard class(es) (ADN) : 2.2

Danger labels (ADN) : 2.2

:



RID

Transport hazard class(es) (RID) : 2.2

Danger labels (RID) : 2.2

:



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14.4. Packing group

Packing group (ADR)	: Not applicable
Packing group (IMDG)	: Not applicable
Packing group (IATA)	: Not applicable
Packing group (ADN)	: Not applicable
Packing group (RID)	: Not applicable

14.5. Environmental hazards

Dangerous for the environment	: No
Marine pollutant	: No
Other information	: No supplementary information available

14.6. Special precautions for user

Special transport precautions	: Transport exclusively in vehicles where the transport compartment is separate from the driver's cab. Ensure that the driver of the vehicle is aware of the potential hazards of the load and what to do in the event of an accident. Before transporting containers make sure they are firmly secured. Make sure the cylinder valve is closed and not leaking. Guards or caps should be in place on the packages. Ensure proper air ventilation.
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Overland transport

Special provisions (ADR)	: 378, 584, 653, 660, 662
Classification code (ADR)	: 2A
Tunnel restriction code (ADR)	: C/E

Transport by sea

Special provisions (IMDG)	: 378
EmS-No. (Fire)	: F-C
EmS-No. (Spillage)	: S-V

Air transport

Special provisions (IATA)	: A202
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Inland waterway transport

Special provisions (ADN)	: 378, 584, 653, 662
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Rail transport

Special provisions (RID)	: 378, 584, 653, 660, 662
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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

15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

Reference code	Applicable on	Entry title or description
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3(a)	propan-2-ol; isopropyl alcohol; isopropanol	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F
3(b)	propan-2-ol; isopropyl alcohol; isopropanol	Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10
40.	propan-2-ol; isopropyl alcohol; isopropanol	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.

- Contains no substance on the REACH candidate list
- Contains no REACH Annex XIV substances
- 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.
- Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

15.1.2. National regulations

Council Directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers. Directive 89/686/EEC on personal protective equipment. Only products complying with food regulations (EC) 1333/2008 and (EU) 231/2012 and labelled as such may be used as food additives.

France

Occupational diseases

Code	Description
RG 66	Occupational rhinitis and asthma
RG 84	Conditions caused by liquid organic solvents for professional use: saturated or unsaturated aliphatic or cyclic liquid hydrocarbons and mixtures thereof; liquid halogenated hydrocarbons; nitrated derivatives of aliphatic hydrocarbons; alcohols; glycols, glycol ethers; ketones; aldehydes; aliphatic and cyclic ethers, including tetrahydrofuran; esters; dimethylformamide and dimethylacetamine; acetonitrile and propionitrile; pyridine; dimethylsulfone and dimethylsulfoxide

15.2. Chemical safety assessment

No chemical safety assessment has been performed.

SECTION 16: Other information

Abbreviations and acronyms:	
CAS-No.	Chemical Abstract Service number
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
LC50	Median lethal concentration
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
VOC	Volatile Organic Compounds
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)

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DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
ThOD	Theoretical oxygen demand (ThOD)
EN	European Standard
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
SDS	Safety Data Sheet
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
N.O.S.	Not Otherwise Specified
EC-No.	European Community number
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
R&Ds	"Scientific Research and Development": any scientific experimentation, analysis or chemical research activity carried out in controlled conditions and on quantities of less than 1 tonne per year.
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
STOT	Specific target organ toxicity
STP	Sewage treatment plant
TLM	Median Tolerance Limit
TRGS	Technical Rules for Hazardous Substances
BLV	Biological limit value
OEL	Occupational Exposure Limit
IOELV	Indicative Occupational Exposure Limit Value
vPvB	Very Persistent and Very Bioaccumulative
WGK	Water Hazard Class

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Data sources	: A variety of data sources have been used in compiling this SDS, but they are not exclusive: Agency for Toxic Substances and Disease Registration (ATSDR) (http://www.atsdr.cdc.gov/). European Chemicals Agency: Guidance on compiling Safety Data Sheets. European Chemicals Agency: Information on Registered Substances http://apps.echa.europa.eu/registered/register-ed-sub.aspx#search European Industrial Gases Association (EIGA) Doc 169/11 Classification, Labelling. International Chemical Safety Program (http://www.inchem.org/) ISO 10156:2010 gases and gas mixtures -- Determination of flammability and oxidation potential for the selection of valve outlet connections. Matheson Gas Data Book, 7th Edition. National Institute for Standards and Technology (NIST) Standard referring to database number 69. ESIS (European Chemicals 5 Information System) Platform of the former European Chemicals Bureau (ECB) ESIS (http://ecb.jrc.ec.europa.eu/esis/). European Chemical Industry Council (CEFIC) TOXNET, the Toxicology Data Network of the National Library of the United States of America (http://toxnet.nlm.nih.gov/index.html). American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit values (TLV). Substance specific supplier information. The information in this document is considered accurate at the time of printing.
Training advice	: Users of breathing apparatus must be trained. The risks of asphyxia are often underestimated and should be emphasized during operator training. Make sure that operators understand the risks.
Other information	: A compatibility and safety study must be performed before using this product for a new process. Ensure suitable air ventilation. Make sure that all national or local regulations are followed. Despite the care taken in its drafting, no liability can be accepted in case of damage or accident resulting from its use. This SDS was prepared by EDITIONS T.I. - Service QuickFDS Consulting.

Full text of H- and EUH-statements:	
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
Asp. Tox. 1	Aspiration hazard, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
H225	Highly flammable liquid and vapour.
H226	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.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Press. Gas (Comp.)	Gases under pressure : Compressed gas
Press. Gas (Liq.)	Gases under pressure : Liquefied gas
Skin Irrit. 2	Skin corrosion/irritation, Category 2

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Skin Sens. 1B	Skin sensitisation, category 1B
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:		
Press. Gas (Comp.)	H280	

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.