UMAREX GmbH & Co. KG
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MATERIAL SAFETY DATA SHEET

4.1698 / 4.1687-1 / 4.1693-1 / 4.1685 CO_2

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY

1. 1. Identification of the substance or preparation

Product /Készítmény name: ***Carbon dioxid supplied in cartridges***
CAS number: 124-38-9
EINECS number: 204-696-9
Registration number:
Registration name:

1. 2. Application of the materials/products

industrial, food and/or medical application

1. 3. Supplier

Manufacturer/ Supplier:	Umarex GmbH & Co. KG Donnerfeld 2 59757 Arnsberg, Germany	Website: https://www.umarex.de E-Mail: service@umarex.de Phone: +49 2932 / 638 01
Distributor:	Umarex GmbH & Co. KG Donnerfeld 2 59757 Arnsberg, Germany	Website: https://www.umarex.de E-Mail: service@umarex.de Phone: +49 2932 / 638 01
Responsible for safety data sheet:	+49 2932 / 638 01	

1. 4. Emergency telephone

Informationszentrale gegen Vergiftungen
Zentrum für Kinderheilkunde, Universitätsklinikum Bonn

Venusberg-Campus 1 Geb. 30 „ELKI“
53127 Bonn

Notruf: +49 228 192 40
Telefax: +49 228 287 332 78 oder +49 228 287 333 14

2. HAZARD IDENTIFICATION

2.1. Classification according to Regulation No 1272/2008/EC

GHS label elements

GHS04

ATTENTION

Category

Gases under pressure, liquefied gas,

Hazard Statements (H- phrases)

H280 - Contains gas under pressure; may explode if heated.

Precautionary Statements (P- phrases)

P102 - Keep out of reach of children
P315 - Get immediate medical advice/attention.
P410+P403 - Protect from sunlight. Store in a well-ventilated place.

Supplemental hazard infomation

2.2. Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Risk phrases

Danger signs

S1/2 - Keep locked up and out of the reach of children.
S9 - Keep container in a well-ventilated place.
S23 - Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.3. Other dangers

Oxygen levels below 19.5% may cause asphyxia. Carbon dioxide exposure can cause nausea and respiratory problems. High concentrations may cause vasodilation leading to circulatory collapse.

2.3.1. Health effects

risk of suffocation, risk of chilblain,

2.3.2. Environmental effects

risk of chilblain,

2.3.3. Physical and chemical danger

no data

2.3.4. Specific dangers

no data

3. COMPOSITION/INFORMATION ON INGREDIENTS

124-38-9	CARBON DIOXIDE	99.5 %

GHS04

H280

(You can see full text of R and H sentences at 16 point.)

4. FIRST AID MEASURES

Inhaling

risk of suffocation, remove the wounded to fresh air, when unconsious without delay artificial respiration or oxigen inhalation,

Eyes

risk of chilblain,

Skin

risk of chilblain,

Swallowed

no adverse effects anticipated,

Symptoms and effects, both acute and delayed

Carbon dioxide is the most powerful cerebral vasodilator known. Inhaling large concentrations causes rapid circulatory insufficiency leading to coma and death. Asphyxiation is likely to occur before the effects of carbon dioxide overexposure. Chronic, harmful effects are not known from repeated inhalation of low concentrations. Low concentrations of carbon dioxide cause increased respiration and headache.
Effects of oxygen deficiency resulting from simple asphyxiants may include: rapid breathing, diminished mental alertness, impaired muscular coordination, faulty judgement, depression of all sensations, emotional instability, and fatigue. As asphyxiation progresses, nausea, vomiting, prostration, and loss of consciousness may result, eventually leading to convulsions, coma, and death.
Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals

General

Instructions for the doctor: symptomatic treatment,

5. FIREFIGHTING MEASURES

Fire-hazard class:: **E** **Non-flammable**

5.1. Adequate extinguishing materials:
use extinguishing material suitable to the near fire circumstances, the material is an extinguishing agent,

5.2. Inadequate extinguishing materials
unknown,

5.3. Dangerous decomposition products
incombustible,

5.4. Special protection equipment for firemen
Wear self-contained breathing apparatus in enclosed space a respirator that is independent from the ambient air should be used, Use self-contained breathing apparatus.

5.5. Specific dangers
no data

5.6. Specific methods
no data

6. ACCIDENTAL RELEASE MEASURES

6.1. Measures for personel protection:
put on the protective equipment, evacuate the area and close for the traffic, keep upwind,

6.2. Measures for enriroment protection
if possible stop the leakage, prevent that the substance in gutter, hole and collar gets, when the substance gets in gutter or water,notify the local authorities,

6.3. Methods of decontamination
let's fresh air in the area, warn everybody, gather spreaded substance in closed vessel carry to destroying place, watch your own protection !!!

6.4. Reference to other sections
Find the personal protective equipments in the 8.

7. HANDLING AND STORAGE

7.1. Handling

7.1.1. Technical precautions

ventillation should be provided, it is recommended to use protective equipments,

7.1.2. Safe handling guidance

avoid the product getting on the skin, in the eyes, on the clothes, avoid breathing its fume, prevent that the substance comes in contact with water, equipment that is suitable for this product and for the designed pressure and temperature should be used.

7.2. Storage

7.2.1. Technical measures/storage conditions

Store in a cool, dry and well-ventilated area, in original, closed packing, keep away from heat, sources of ignation

7.2.2. Incompatible products

no data

7.2.3. Packaging materials

in retail boxes and/or in bulk

7.3. Special application

no data

8. EXPOSURE CONTROLS – PERSONAL PROTECTION

8.1. Exposure limit values

ingredients:	AK value (mg/m3)	CK value (mg/m3)	MK value (mg/m3)
1. CARBON DIOXIDE	9000	18000	

8.2. Exposure control

ventillation should be provided, it is recommended to use protective equipments, avoid breathing its fume, avoid the product getting on the skin, in the eyes, on the clothes,

8.2.1. Workplace exposure control

8.2.1.1. Respiratory protection:

inadequate exhaust or ventilation use respiratory protection,

8.2.1.2. Hand protection:

protective gloves, (MSZ EN388),

8.2.1.3. Eyes protection:

tigthly closing protective goggles (EN 166),

8.2.1.4. Protection of skin and body surface:
safety shoes (MSZ EN 345-1, SB)

8.2.2. Environmental exposure control
prevent that the substance in gutter, hole and collar gets,

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General informations

Appearance:	gas, in objects,
Colour:	greyish-coloured,
Odour:	odourless,

Information on basic physical and chemical properties

Ph:	not applicable
Boiling Point (°C):	not applicable
Ignition temperature (°C):	not applicable
Explosive limit:	
- lower:	not applicable
- upper:	not applicable
Oxidize facility:	not applicable
Vapor Pressure (20°C):	
Gravity (20°C):	not applicable
Specific gravity (water=1), (20°C):	not applicable
Solubility:	
- Water:	dissolves with water,
- Other solvents:	no data
Distribution coefficient (n-octanol/water)::	0,83
Viscosity:	not applicable
Vapor Density:	1,8474 kg/m3 (15°C), 1,9767 kg/m3 (0°C, 1013mbar)
Evaporation Rate:	not applicable
Decomposition Temperature:	not applicable
Other items:	Filling pressure: 8MPa (1,175psi) Pressure at 50 °C: 18 MPa (2,645 psi) Burst pressure: min. 52 MPa,

9.2. Other Informations

Melting Point (°C):	not applicable
Flash-point (°C):	not applicable

10. STABILITY AND REACTIVITY

10.1. Reactivity
stable under normal conditions,

10.2. Chemical stability
there is no decomposition under normal condition,

10.3. Possibility of hazardous reactions
no information available,

10.4. Conditions to avoid
stable substance,

10.5. Incompatible materials

Certain reactive metals, hydrides, moist cesium monoxide, or lithium acetylene carbide diammino may ignite. Passing carbon dioxide over a mixture of sodium peroxide and aluminum or magnesium may explode.

10.6. Hazardous decomposition products

no data

11. TOXICOLOGICAL INFORMATION

Actual material

Carbon dioxid supplied in cartridges

11.1. Acute toxicity

11.1.1. After inhaling

In animals:

not determined,

11.1.2. When swallowed

In animals:

no data

11.1.3. In case of contacting skin

In animals:

no data

11.2. Local effects

11.2.1. After inhaling

Carbon dioxide is the most powerful cerebral vasodilator known. Inhaling large concentrations causes rapid circulatory insufficiency leading to coma and death. Asphyxiation is likely to occur before the effects of carbon dioxide overexposure. Chronic, harmful effects are not known from repeated inhalation of low concentrations. Low concentrations of carbon dioxide cause increased respiration and headache.
Effects of oxygen deficiency resulting from simple asphyxiants may include: rapid breathing, diminished mental alertness, impaired muscular coordination, faulty judgement, depression of all sensations, emotional instability, and fatigue. As asphyxiation progresses, nausea, vomiting, prostration, and loss of consciousness may result, eventually leading to convulsions, coma, and death.
Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals

11.2.2. In case of contacting skin

no adverse effects anticipated,

11.2.3. In case contacting eyes

no adverse effects anticipated,

11.3. Sensibility

not sensitizing,

11.4. Chronic toxicity

no data

11.5. Specific effects

11.5.1. Genotoxicity

not mutagenic,

11.5.2. Carcinogenity

none carcinogen,

11.5.3. Reproductive toxicity

not cause genetic toxicity,

12. ECOLOGICAL INFORMATION

Actual material

Carbon dioxid supplied in cartridges

12.1. Ecotoxicity

12.1.1. Water toxicity

no data

12.1.2. Terrestrial toxicity

no data

12.1.3. Behaviour in waste water treatment plants

no data

12.2. Mobility

no data

12.3. Biological persistence

12.3.1. General

12.3.2. In water

no data

12.3.3. In air

no data

12.3.4. In soils and sediments

no data

12.4. Bioaccumulative potential

no data

12.5. Results of PBT and vPvB assessment

the substance does not contain polychlorinated hydrocarbons and heavy metals,

12.6. Other adverse effects

prevent that the substance in water,agricultural land and gutter gets, when the substance gets in gutter or water,notify the local authorities,

13. DISPOSAL CONSIDERATIONS

13.1. Material disposal

Any product originated from the use of the substance or preparation and unsuitable for further utilisation, as well as the tools and packing materi-als, should be delivered to an approved deposit for recy-cling or neutralisation.

13.2. Package disposal

the packaging has to be used, like product

13.3. EWC number

15 01 05

14. TRANSPORT INFORMATION

UN number

2037

ADR/ADN/RID

Proper shipping name:	Receptacles, small containing gas (Gas Cartridges)
Technical/Trade name:	Carbon dioxid supplied in cartridges
Hazard class:	2
Labels:	2.2
Classification code:	5A
Packing group:	-
Hazard identification number:	20
Hazard of environment:	NO
Tunnel restriction code:	(E)

IMDG

Proper shipping name:	Receptacles, small containing gas (Gas Cartridges)
Technical/Trade name:	Carbon dioxid supplied in cartridges
Hazard class:	2
Labels:	2.2
Packing group:	-
EmS:	F-D,S-U,
Marine pollutant:	NO

IATA

Proper shipping name:	Gas cartridges
Technical/Trade name:	Carbon dioxid supplied in cartridges
Hazard class:	2.2
Labels:	2.2
Packing group:	-
PAX:	Y203.203
CAO:	203
UN Number:	2037

15. REGULATORY INFORMATION

15.1. Seveso category

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15.2. Storage category

2A storage class: Compressed, liquefied or dissolved under pressure gases,

15.3. WGK

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15.4. Important national regulations related to the product

Act No. XCIII/1993 on work safety, and the related regulations
Act No. XLIII/2000 on waste management
Act No. XXV/2000 on chemical safety
Gov. Decree No. 98/2001 (VI. 15.) on the conditions of pursuing waste-related activities
Decree No. 25/1996 (VIII. 28.) of the Minister of Public Health on the general health requirements of working and work conditions without health risks

Decree No. 26/1996 (VIII. 28.) of the Minister of Public Health on the limitations of the (weekly, daily) exposure time of workers employed under certain health risks
Decree No. 28/2011. (IX. 6.) of the Minister of Internal Affairs on issuing the National Fire Protection Rules
Decree No. 44/2000. (XII. 20.) of the Minister of Health on the detailed rules of certain procedures and activities related to hazardous substances and hazardous products
Joint Decree No. 25/2000 (IX. 30.) of the Minister of Health and of the Minister of Social and Family Affairs on the chemical safety of workplaces,
EüM decree no.
The European Community and Regulation 1907/2006/EC on the registration, evaluation, approval and restriction of chemicals (REACH)

15.5. Other relevant national regulations

Joint Decree No. 25/2000 (IX. 30.) of the Minister of Health and of the Minister of Social and Family Affairs on the chemical safety of workplaces
EWC code numbers: Decree No. 16/2001 (VII. 18.) of the Minister for the Environment on the lists of waste, as amended by Decree No. 10/2002 (III. 26.) of the Minister for the Environment
Road Transport Department: Act 19 of 1979 and decree no. 71/2011 (XII.8.) amending KPM decree no. 20/1979 (IX. 18.) KPM on the promulgation of Annex "A" and "B" of the European Agreement on the International Road Transport of Hazardous Goods, and Annex C of Act LXXVII of 2006 (GKM decree no. 72/2011 (XII.8.) NFM on the promulgation of the domestic use of the annexes of the International Railway Goods Transport Convention
1272/2008/EC regulation on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

15.6. Chemical safety assessment

no information available,

16. OTHER INFORMATION

The review affected this chapters:

1.3, 3.3.3, 3.3.4, 4.2, 4.5, 4.6, 5.5, 5.6, 6.4, 7.2.2, 7.2.3, 7.3, 8.1, 8.2.1.1, 10.2, 10.5, 10.6, 10.7, 11.1.1, 11.1.2, 11.1.3, 11.2.3, 11.2.2, 11.2.1, 11.3, 11.4, 11.5.1, 11.5.2, 11.5.3, 12.1.1, 12.1.2, 12.1.3, 12.2, 12.3.1, 12.3.2, 12.3.3, 12.4, 12.6, 12.5, 14, 15.14, 15.11, 15.10, 16.3

Risk phrases

H- phrases

H280 - Contains gas under pressure; may explode if heated.

16.1. General information

This information relates TO THE PRODUCT AS SUCH and is in compliance with the specifications of the enterprise.
In case of products and mixtures, it should be ensured that no new risks arise.
The information on this data sheet is based on our best knowledge at the time of printing the safety data sheet and is provided in good faith. However, certain data are being reviewed.
Users should note the potential for additional risks in case of using the product for purposes other than the recommended application. This data sheet may be used and reproduced for prevention and safety purposes only. The references to legislation, regulations and practical rules, and documents should not be considered complete.
It is the responsibility of the person receiving the product to consult all documents related to the use and handling of the product.
The responsibility of parties handling the product also includes to pass on the whole of the information listed on the safety data sheet and necessary for work safety and for the protection of health and the environment, to the next person who may get in contact in any way with the product (use, storage, cleaning of containers, other operations).

16.2. Technical advisory services

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Donnerfeld 2
59757 Arnsberg, Germany

Website: https://www.umarex.de
E-Mail: d.wilke@umarex.de
Phone: +49 2932 / 638 553

16.3. Sources

Umarex Product Datasheet

16.4. Further information

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