

Date	2007.08.27.	Carbon dioxide supplied in cartridges	Site:	1/9
Date of revision:	2016.12.15.		Version nb:	4



SAFETY DATA SHEET

(According to Regulation 2015/830)



SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1. 1. Product identifier

Product name: **Carbon dioxide supplied in cartridges**

CAS number: 124-38-9

EINECS number 204-696-9

Registration number

Registration name:

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

industrial, food and/or medical application

1. 3. Details of the supplier of the safety data sheet

Manufacturer/ Supplier: Liss Patrongyártó, Töltő és Forgalmazó Kft.
Address: 9653 Répcelak, Carl von Linde u. 1.
Tel.: Fax: +36-95-588-114 Email: liss@liss.hu

Distributor: Liss Patrongyártó, Töltő és Forgalmazó Kft.
Address: 9653 Répcelak, Carl von Linde u. 1.
Tel.: Fax: +36-95-588-114 Email: liss@liss.hu

Importer/ Distributor: Liss Patrongyártó, Töltő és Forgalmazó Kft.
Address: 9653 Répcelak, Carl von Linde u. 1.
Tel.: Fax: +36-95-588-114 Email: liss@liss.hu

Responsible for the Safety Data Sheet: Liss Patrongyártó, Töltő és Forgalmazó Kft.
+36-95-588-100
liss@liss.hu

1. 4. Emergency telephone number

EGÉSZSÉGÜGYI TOXIKOLÓGIAI TÁJÉKOZTATÓ SZOLGÁLAT (ETTSZ)
1096 Budapest, Nagyvárad tér 2.
Tel: 06-80-20-11-99, 06-1-476-6464 (24 h, for emergency only)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification according to 1272/2008/EC

Gases under pressure, liquefied gas,
H280

2.2. Label elements

Label elements according to 1272/2008/EC directive



GHS04

ATTENTION

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.

P403 - Store in a well-ventilated place.




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Supplemental hazard information**2.3. Other hazards**

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.

The full text of H phrases see Section 16 point.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1. Substances**

Product identifiers	Designation and Classification of components	Amount
124-38-9	CARBON DIOXIDE	99.5 %
-	GHS04  H280	

3.2. Mixtures

The product is a substance.

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

SECTION 4: FIRST AID MEASURES**4.1. Description of first aid measures****4.1.1. Inhaling**

risk of suffocation, remove from exposure and move to fresh air immediately; if not breathing, give artificial respiration, if breathing is difficult, give oxygen; get medical aid;

4.1.2. Eyes

After contact with the eyes should be rinsed immediately under running water. If irritation persists, then the victim should receive immediate medical assistance.

4.1.3. Skin

Short contact with the dry ice is not cause problem, overcooling, prolonged contact is required for frostbite. Prolonged contact with the frozen area is loosely screwed into dry clothes. You need to protect the body from cooling down further. It should not rub the damaged area. Transport the patient to hospital.

4.1.4. Swallowed

Under occupational conditions, this intake pathway is toxicologically irrelevant.

4.2. Most important 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

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

Instructions for the doctor: symptomatic treatment,



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SECTION 5: FIREFIGHTING MEASURES

Fire class according to the National Fire Protection Code (54 / 2014. (XII. 5) BM)



Non-flammable class

5.1. Extinguishing media

use extinguishing material suitable to the near fire circumstances, the material is an extinguishing agent,

5.1.1. Unsuitable extinguishing materials

unknown,

5.2. Special hazards arising from the substance or mixture

no data

5.3. Advice for firefighters

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.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

put on the protective equipment, evacuate the area and close for the traffic, keep upwind,

6.2. Environmental precautions

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 and material for containment and cleaning up

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.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe 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. Conditions for safe storage, including any incompatibilities

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 ignition

7.2.2. Incompatible products

no data

7.2.3. Packaging materials

in retail boxes and/or in bulk

7.3. Specific end use(s)

no special measures,



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SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION**8.1. Control parameters**

Limit values of Joint Decree 25/2000 ACGIH TLV:

Component name:	AK value (mg/m ³)	CK value (mg/m ³)	MK value (mg/m ³)
1. CARBON DIOXIDE	9000	18000	

Other**8.2. Exposure controls**

ventilation 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. Appropriate engineering controls**8.2.2. Individual protection measures, such as personal protective equipment****8.2.2. a) Eye/face protection**

tightly closing protective goggles (EN 166),

8.2.2. b) Skin protection

safety shoes (MSZ EN 345-1, SB)

8.2.2. b)i. Hand protection

protective gloves, (MSZ EN388),

8.2.2. c) Respiratory protection

inadequate exhaust or ventilation use respiratory protection,

8.2.2. d) Thermal hazard

may cause frostbite,

8.2.3. Environmental exposure control

prevent that the substance in gutter, hole and collar gets,

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties****9.1. a) Appearance**

Consistence: gas, in objects,

Colour: greyish-coloured,

9.1. b) Odour odourless,

9.1. c) Odour Threshold no data

9.1. d) pH-value nem értelmezhető/not applicable

9.1. e) Melting point/freezing point nem értelmezhető/not applicable

9.1. f) Initial boiling point and boiling range nem értelmezhető/not applicable

9.1. g) Flash-point: nem értelmezhető/not applicable

9.1. h) Evaporation rate nem értelmezhető/not applicable

9.1. i) Flammability (solid, gas) no data



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9.1. j) Upper/lower Flammability or explosive limits

- lower: nem értelmezhető/not applicable
- upper: nem értelmezhető/not applicable

9.1. k) Vapour Pressure (20°C): 57,258 bar**9.1. l) Vapour Density:** 1,8474 kg/m³ (15°C), 1,9767 kg/m³ (0°C, 1013mbar)**9.1. m) Relative density** nem értelmezhető/not applicable**9.1. n) Solubility(ies)**

- Water: dissolves with water,
- Other solvents: no data

9.1. o) Partition coefficient (n-octanol/water): 0,83**9.1. p) Auto-ignition temperature** nincs adat**9.1. q) Decomposition Temperature:** nem értelmezhető/not applicable**9.1. r) Viscosity:** nem értelmezhető/not applicable**9.1. s) Explosive properties** no data**9.1. t) Oxidising properties** nem értelmezhető/not applicable**9.2. Other Informations**

Specific gravity (water=1), (20°C): nem értelmezhető/not applicable

Other items: Filling pressure: 8MPa (1,175psi) Pressure at 50 °C: 18 MPa (2,645 psi) Burst pressure: min. 52 MPa,

SECTION 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

SECTION 11: TOXICOLOGICAL INFORMATION**Actual material**

Carbon dioxide supplied in cartridges

11.1. Information on toxicological effects**11.1.a. Acute toxicity****Inhalation**not determined,
According to reports in animals**Oral**no data
According to reports in animals**Dermal**

no data



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According to reports in animals

11.1.b. Skin corrosion/ Skin irritation

no adverse effects anticipated,

11.1.c. Serious eye damage/ Eye irritation

no adverse effects anticipated,

11.1.d. Respiratory or skin sensitisation

not sensitizing,

11.1.e. Germ cell mutagenicity

not mutagenic,

11.1.f. Carcinogenicity

none carcinogen,

11.1.g. Reproductive toxicity

not cause reproductive toxicity,

11.1.h. Specific target organ toxicity — single

No information available.

11.1.i. Specific target organ toxicity — repeated exposure

No information available.

11.1.j. Aspiration hazard

Not considered an aspiration hazard.

11.2. Delayed and immediate effects as well as chronic effects from short and long-term exposure

Acute:

Effects to respiratory center, biotransformation, heart/circulatory system and CNS[07619]

Chronic:

Effects to the CNS and heart/circulatory system[07866]

11.3. Other informations

No information available.

SECTION 12: ECOLOGICAL INFORMATION

Actual material

Carbon dioxide supplied in cartridges

12.1. Toxicity

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. Persistence and degradability

12.2.1. General

12.2.2. In water

no data

12.2.3. In air

no data

12.2.4. In soils and sediments

no data

12.3. Bioaccumulative potential

no data

12.4. Mobility in soil

no data



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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,

SECTION 13: DISPOSAL CONSIDERATIONS**13.1. Disposal of Cylinders:**

If gas remains in cylinders, release gas with proper equipment and dispose of cylinders as incombustible waste. For empty cylinders, check for a puncture hole and dispose of as incombustible waste.

13.2. Package disposal

the packaging has to be used, like product

13.3. Waste identification codes

Packing: 15 01 05 packaging, composite packaging

Residue: 16 05 05 gases in pressure containers and other than those mentioned in 16 05 04

SECTION 14: TRANSPORT INFORMATION

14.1. UN number 2037

**ADR/ADN/RID**

14.2. Proper shipping name: Receptacles, small containing gas (Gas Cartridges)

14.3. Transport hazard class(es): 2

Labels: 2.2

Classification code 5A

14.4. Packing group: -

Hazard identification number: 20

14.5. Environmental hazards: NO

Tunnel restriction code: (E)

IMDG

14.2. Proper shipping name: Receptacles, small containing gas (Gas Cartridges)

14.3. Transport hazard class(es) 2

Labels 2.2

14.4. Packing group: -

EmS: F-D,S-U,

Marine pollutant: NO

IATA

14.2. Proper shipping name: Gas cartridges

14.3. Transport hazard class(es): 2.2

Labels 2.2

14.4. Packing group: -

PAX: Y203.203

CAO: 203

UN number: 2037

14.6. Special precautions for user

no data

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data



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SECTION 15: REGULATORY INFORMATION

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

REACH list of substances subject to authorization (Annex XIV): The product is not subject to REACH restrictions.

15.2. Chemical Safety

no information available,

15.3. Seveso category

(219/2011. (X.20.) Korm.rendelet szerint)

-

15.4. Storage category

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

15.5. WGK - German Water hazard classes

-

15.6. Other relevant national regulations

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) REGULATIONS REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 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

2000 XXV. law Chemical Safety

Decree No. 44/2000 (XII. 27.) of the Minister of Health on the detailed rules of certain procedures and activities related to hazardous substances and hazardous products, as amended by Decree No.

25/2000. (IX. 30.) Joint Decree of the Minister of Health, Ministry of Social and Family Affairs chemical safety of workplaces

1993. XCIII. law occupational protection

54/2014. (XII. 5) Minister of Interior on the National Fire Protection Regulations

Waste code numbers (VIII.27) No 72/2013 of wastes VM.

Road transport Class: 2015 LXXXIX. Law and the European Agreement concerning the International Carriage of Dangerous Goods 61/2013 "A" on certain issues and Annex "B" and the promulgation of the domestic application. NFM Regulation (X.17.).

Rail transport: 2015 LXXXIII. International Railway Act, the appendix, the Protocol dated 3 June 1999 amending Transport Convention (COTIF), adopted in Vilnius Annex C promulgation and application of certain aspects of the domestic and the domestic appl

SECTION 16: OTHER INFORMATION

16.1.a. The review affected this chapters:

1.2, 4.1, 5.1, 8.2.2.d), 11.6, 11.7, 9.2, 14.24, 14.25

16.1.b. The abbreviation and acronyms used in Safety data sheet

REACH Registration, Evaluation, Authorisation and restriction of Chemicals / A vegyszerek regisztrációja, értékelése, engedélyezése és korlátozása

16.1.c. Key literature references and sources for data

Liss Product Data Sheet,

16.1.d. H- phrases

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

16.2. Technical advisory services

Liss Patrongyártó, Töltő és Forgalmazó Kft.
Address: 9653 Répcelak, Carl von Linde u. 1.
Tel.: Fax: +36-95-588-114

16.3. Further information

Receptacles with a capacity not exceeding 50 ml containing only non-toxic constituents are not subject to the provisions of ADR/RID, IMDG Code, IATA DGR. (ADR/RID - 191, IMDG Code - 191, IATA DGR - A98)



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16.4. 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).

