

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH), Annex II with all subsequent amendments and additions, and Commission Regulation (EU) 2020/878

CARBON DIOXIDE

Review date: 2026.02.19

Version number: 1.0

Revision number: 1

Revision date: 2026-02-19

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1 Product identifier**Trade name: *Carbon dioxide*, *Karbodinas*, *Carbon dioxide E290*, *Carbon dioxide R744*

Substance name: carbon dioxide.

Identification number: N/A

EC No.: 204-696-9

CAS No.: 124-38-9

REACH Registration No.: exempt from registration under Annex V to the Regulation (EC) No. 1907/2006.

1.2 Relevant identified uses of the substance or mixture and uses advised against**1.2.1 Identified uses:**

Used as a food additive in accordance with **Commission Regulation (EU) No. 231/2012**, which lays down specifications for food additives listed in Annexes II and III of **Regulation (EC) No. 1333/2008** of the European Parliament and of the Council, for the production of carbonated beverages, beer, and other drinks.

Used for cooling, freezing, and storage of food products.

Used as a refrigerant: in industrial warehouses, merchant ships, mobile air-conditioning systems, heat extraction systems, and refrigerated systems. When used as a refrigerant (R744), refrigeration systems must be equipped with specially designed equipment.

Also used for technical purposes.

1.2.2 Uses advised against: No**1.3 Details of the supplier of the Safety Data Sheet**

Manufacturer/Supplier: UAB Gaschema,

Address: Jonalaukio k. 1, Jonavos sav. , Ruklos sen., LT 55259

Country: Republic of Lithuania

Telephone number: +370 349 56259

Website of the manufacturer/supplier: www.gaschema.lt.Competent person responsible for the SDS: Z. Andriulaitienė, z.andriulaitiene@gaschema.lt**1.4 Emergency telephone number**

Please contact: Poison Information and Control Office in the Republic of Lithuania by phone ++370 52362052, cell phone +370 687 53378, on site <http://www.apsinuodijau.lt/information-in-english/> or by the Common emergency Center by 112.

Helpdesk services work 24 hours a day, 365 days a year.

Other remarks (language in which assistance is provided): assistance is provided in Lithuanian.

Poison Control Centers in Europe are available on site <http://www.who.int/pcs/poisons/centre/directory/euro/en/>.

Telephone numbers of poison control centers in the European Economic Area: **IRELAND** (Dublin) +353 1 8379964; **AUSTRIA** (Vienna) +43 1 406 43 43; **BELGIUM** (Brussels) +32 70 245 245; **BULGARIA** (Sofia) +359 2 9154 409; **CZECH REPUBLIC** (Praha) +420 224 919 293; **DENMARK** (Copenhagen) 82 12 12 12; **ESTONIA** (Tallinn) 112; **GREECE** (Athens) +30 10 779 3777; **ICELAND** (Reykjavik) +354 525 111, +354 543 2222; **ITALY** (Rome) +39 06 305 4343; **LATVIA** (Riga) +371 704 2468; **MALTA** (Valletta) 2425 0000; **NORWAY** (Oslo) 22 591300; **NETHERLANDS** (Bilthoven) +31 30 274 88 88; **FRANCE** (Paris) +33 1 40 0548 48; **FINLAND** (Helsinki) +358 9 471 977; **HUNGARY** (Budapest) 06 80 20 11 99; **GERMANY** (Berlin) +49 30 19240.

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2. HAZARDS IDENTIFICATION

Refrigerated liquefied gas, H281 (for isothermal, cryogenic vessels and tanks only)

2.1.1 Classification according to Regulation (EC) No. 1272/2008:

Liquefied gas, H280 (only for cylinders and cylinder bundles).

Refrigerated liquefied gas, H281 (only for insulated, cryogenic containers and tanks).

2.1.3 Additional information: For full text of hazard statements: see Section 16.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008:



DHS04

Signal word: Warning

Hazard statements:

H280 Contains gas under pressure; may explode if heated. (For cylinders, cylinder packs only)

H281 Contains refrigerated gas; may cause cryogenic burns or injury (for isothermal, cryogenic vessels and tanks only)

Precautionary statements:

P250 Do not subject to shock

P282: Wear cold insulating gloves/face shield/eye protection (for isothermal, cryogenic vessels and tanks only)

P336: Thaw frosted parts with lukewarm water. Do not rub affected area (for isothermal, cryogenic vessels and tanks only)

P315 Get immediate medical advice/attention (for isothermal, cryogenic vessels and tanks only)

P403 Store in a well ventilated place (for isothermal, cryogenic vessels and tanks only)

2.3 Other hazards

High concentrations of CO₂ cause rapid circulatory insufficiency even when the oxygen concentration level is normal. Symptoms include headache, nausea, and vomiting, which may lead to loss of consciousness or death. Since carbon dioxide is an inorganic substance, the assessment of PBT or vPvB criteria according to Annex XIII of Regulation (EC) No. 1907/2006 has not been carried out.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

The product is classified as elementary substance according to Regulation (EC) No. 1907/2006.

Identification of hazardous components

CAS No.	EC No.	REACH registration No.	Weight % content	Name	Classification according to Regulation (EC) No 1272/2008 [CLP / GHS] requirements
124-38-9	204-696-9	Exempt from registration pursuant to Annex V of Regulation (EC) No. 1907/2006.	99.9-99.95	Carbon dioxide	Liquefied gas H280 (for cylinders, cylinder packs only), Refrigerated liquefied gas H281 (for isothermal, cryogenic vessels and tanks only)

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4. FIRST AID MEASURES

4.1 Description of first aid measures

Relevant routes of exposure:

Inhalation: *remove the person affected with carbon dioxide to fresh air, provide oxygen, get medical attention.*

Skin contact: *bind the frostbite affected areas with sterile dressing. Get medical attention.*

Eye contact: *rinse thoroughly with water. Get medical attention.*

Ingestion: *not required.*

4.2 Most important symptoms and effects, both acute and delayed *None known.*

4.3 Indication of any immediate medical attention and special treatment needed *None*

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: *carbon dioxide is non-flammable*

Extinguishing media, which must not be used for safety reasons: *none.*

Unsuitable extinguishing media: *none*

5.2 Special hazards arising from the substance or mixture: *None*

5.3 Advice for firefighters

Used insulating gas masks. EN 137 Respiratory protective devices, self-contained open-circuit compressed air breathing apparatus with full face mask- Requirements, testing, marking.

EN 469 Protective clothing for firefighters. EN 659 Protective gloves for firefighters

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures.

For non-emergency personnel:

Avoid contact with the product. Use personal protective equipment listed in Section 8.

Ecological protection measures: none needed.

For emergency responders: *Avoid contact with the product. Use personal protective equipment listed in Section 8.*

6.2 Environmental precautions *None needed.*

6.3 Methods and material for containment and cleaning up. *None*

6.4 References to other sections *See Section 8 for personal protective equipment and Section 13 for waste disposal methods.*

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Requirements and recommendations for use

Safe use of the product

Containers that contain or have previously contained flammable or explosive substances must not be inerted using liquid carbon dioxide. The possible formation of solid CO₂ particles should be avoided. In order to prevent possible electrostatic discharges, the system must be properly grounded.

Use only the specified equipment suitable for this product, its pressure, and temperature. Contact your gas supplier if in doubt.

Do not smoke while handling the product.

Avoid backflow of water, acids, and alkalis.

Only experienced and properly instructed persons should work with gases.

Ensure that the tightness of all gas systems is checked (or regularly checked) before use.

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

Use pressure-reducing device(s) in gas installations.

Do not inhale the gas.

Avoid releasing the product into the work area.

When using CO₂ fire extinguishers, be aware of the risk of static electricity generation. Do not use them in areas where a flammable atmosphere may be present.

In rooms where liquid carbon dioxide is produced and stored, supply and exhaust ventilation must be installed in accordance with the requirements of STR 2.09.02 “Heating, Ventilation and Air Conditioning”, and emergency ventilation must also be provided.

Safe handling of gas containers

Do not allow reverse flow of gas into the container.

Protect containers from physical damage; do not drag, roll, slide, or drop them.

When moving containers, even over short distances, use carts (manual, mechanical, etc.) intended for container transport.

Do not remove the valve protection cap until the container is secured against a wall or stand, placed in a cylinder holder, and ready for use.

If the user experiences difficulties operating the container valve, discontinue use and contact the supplier.

Never attempt to repair or modify container valves or pressure relief devices.

Damaged valves must be reported immediately to the supplier.

Keep the container valve outlet clean and free from contamination, especially oil and water.

Replace valve outlet caps or plugs and container caps (where provided) as soon as the container is disconnected from the equipment.

Close the container valve after each use and when empty, even if it is still connected to the equipment.

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

Never use direct flame or electrical heating devices to increase the pressure in the container.

Do not remove or damage the label provided by the supplier for identification of the container contents.

Ensure that water cannot flow back into the container.

Open the valve slowly to avoid pressure shock.

Storage requirements: *liquid carbon dioxide is stored in cylinders or isothermal tanks. Cylinders are stored in dedicated warehouses or enclosed sites covered with roof that protects the cylinders from exposure to atmospheric precipitations and direct sunlight.*

Instructions on limit amount of the substance/preparation to be stored under the conditions specified: *no regulations apply.*

7.2 Conditions for safe storage, including any incompatibilities

Incompatible substances for joint storage: none.

Further information on the safe storage of refrigerated carbon dioxide can be found in the document **EIGA Doc. 66 “Refrigerated CO₂ Storage at Users’ Premises”**, which can be downloaded from <http://www.eiga.eu>, or obtained from your supplier.

All regulations and local requirements regarding the storage of containers must be followed.

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

Valve protection devices or caps must be secured.

Containers must be stored in an upright position and properly secured to prevent falling.

The general condition of stored containers and possible leaks must be checked periodically.

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

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Store containers away from fire hazards and sources of heat and ignition.

Keep away from combustible materials.

Requirements for packaging of the chemical substance/preparation:

Cylinders and cryogenic tanks must comply with the requirements of pressure vessel regulations.

7.3 Specific end use(s)

Used as a **food additive** in accordance with **Commission Regulation (EU) No. 231/2012**, which establishes specifications for food additives listed in Annexes II and III of **Regulation (EC) No. 1333/2008**, for the production of carbonated beverages, beer, and other drinks.

Also used for **cooling, freezing, and storage of food products**, as well as for **technical purposes**.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limit values: *long-term exposure limit value (LTELV)*-9000 mg/m³ CO₂ according to the *Lithuanian Hygiene Norm HN 23*.

8.2 Exposure controls

8.2.1 Appropriate engineering controls: *exhaust-supply ventilation*

8.2.2 Individual protection measures:

Eye/face protection: *goggles, organic glass shields.*

Skin protection: *work clothing.*

Hand protection: *gloves.*

Other: *thick cotton fabric suit (blazer, pants), special work footwear.*

Respiratory protection: *Not required.*

Thermal hazards: *Not required.*

8.2.3 Environmental exposure controls: *Not required.*

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance: *colourless, odourless liquid*

pH *Not relevant for liquefied gas*

Melting point/freezing point *-78.5 °C/ -57 °C*

Initial boiling point and boiling range: *-78.5°C*

Flash point: *non-flammable*

Flammability (gas): *non-flammable*

Explosive properties: *non-explosive*

Oxidising properties: *non-oxidising*

Vapour pressure: *569 mmHg*

Relative density: *761 kg/m³ (21.1°C, pressure 5.8 MPa)*

Solubility in water: *1.45 kg/m³*

Partition coefficient: n-octanol/water: *not relevant for inorganic gaseous substances*

Viscosity: *0.07 cP at -78 °C*

Vapour density: *not determined*

Evaporation rate, *no data available*

Viscosity *Not relevant for gas*

9.2 Other information *None*

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10. STABILITY AND REACTIVITY

10.1 Reactivity

Liquid carbon dioxide turns into gaseous carbon dioxide during evaporation.

10.2 Chemical stability

Liquid carbon dioxide turns into gaseous carbon dioxide during evaporation.

Need for and presence of stabilizers: *not*

required **10.3 Possibility of hazardous reactions**

None.

10.4 Conditions to avoid

Protect from sunlight, store in a well-ventilated room, do not subject to shock.

10.5 Incompatible materials

None.

Materials such as carbon steel, low-alloy carbon steel, and plastics become brittle at low temperatures and may fracture. Use suitable materials compatible with the cryogenic conditions present in refrigerated liquefied gas systems.

For additional information on compatibility, refer to **ISO 11114**.

10.6 Hazardous decomposition products *Gaseous carbon dioxide*

11. TOXICOLOGICAL INFORMATION

The product is classified as a refrigerated liquefied gas according to Regulation (EC) No. 1272/2008.

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

Acute toxicity: Based on available data, the product does not meet the classification criteria according to Regulation (EC) No. 1272/2008.

Skin corrosion and/or irritation: Based on available data, the product does not meet the classification criteria according to Regulation (EC) No. 1272/2008.

Respiratory or skin sensitisation: Based on available data, the product does not meet the classification criteria according to Regulation (EC) No. 1272/2008.

Serious eye damage and/or eye irritation: Based on available data, the product does not meet the classification criteria according to Regulation (EC) No. 1272/2008.

Germ cell mutagenicity: Based on available data, the product does not meet the classification criteria according to Regulation (EC) No. 1272/2008.

Carcinogenicity: Based on available data, the product does not meet the classification criteria according to Regulation (EC) No. 1272/2008.

Reproductive toxicity: Based on available data, the product does not meet the classification criteria according to Regulation (EC) No. 1272/2008.

Specific target organ toxicity (STOT) – single exposure: Based on available data, the product does not meet the classification criteria according to Regulation (EC) No. 1272/2008.

Specific target organ toxicity (STOT) – repeated exposure: Based on available data, the product does not meet the classification criteria according to Regulation (EC) No. 1272/2008.

Aspiration hazard: *None.*

Information on likely routes of exposure: Inhalation, contact with skin and eyes.

Inhalation: Lack of oxygen in air due to excess carbon dioxide may cause severe symptoms and loss of consciousness after a few breaths.

Symptoms related to physical, chemical and toxicological characteristics: Eye irritation, inflammation, skin redness, and frostbite may occur.

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Delayed, acute and chronic effects from short- and long-term exposure: Frostbite of the skin. Excess carbon dioxide in air may cause loss of consciousness after a few breaths.

Interactive effects: No data available.

Lack of specific data: None.

11.2 Information on other hazards

11.2.1 Endocrine-disrupting properties: No data available for the product.

11.2.2 Other information:

Unlike simple asphyxiant gases, carbon dioxide can cause death even when the oxygen concentration remains normal (20–21%). It has been determined that CO₂ gas at a concentration of 5%, acting synergistically, may increase the toxic effects of certain other gases (CO, NO₂). It has also been shown that exposure to CO₂ increases the formation of carboxyhemoglobin or methemoglobin when exposed to these gases, possibly due to the stimulating effect of carbon dioxide on the respiratory and circulatory systems.

For more information, see “EIGA Safety Information 24: Carbon Dioxide – Physiological Hazards” available at www.eiga.eu.

The substance/mixture does not have endocrine-disrupting properties.

12. ECOLOGICAL INFORMATION

12.1 Toxicity: *nontoxic*

12.2 Persistence and degradability: *natural substance not degradable*

12.3 Bioaccumulative potential: *not characterised by bioaccumulative properties.*

12.4 Mobility in soil: *not determined*

12.5 Results of PBT and vPvB assessment

Inorganic substances are not subject to PBT or a vPvB assessment according to Annex XIII of Regulation (EC) No. 1907/2006.

12.6 Other adverse effects: None.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste from residues:

Carbon dioxide waste is classified as non-hazardous waste according to Regulation (EU) No. 1357/2014. It may be released into the environment only in a well-ventilated area. Do not discharge in places where accumulation of the substance could be dangerous. Follow the EIGA Code of Practice Doc. 30 “**Disposal of Gases**”, available at <http://www.eiga.org>, for recommendations on appropriate disposal methods. If necessary, contact the supplier for advice.

General:

Do not discharge in places where accumulation of the substance could be dangerous. It may be released into the environment only in well-ventilated areas. Avoid releasing large quantities into the environment. If necessary, contact the supplier for advice.

When using cylinders, the gas must not be completely emptied; the pressure in the cylinder must not be lower than 0.5 bar.

Packaging waste:

Cylinders intended for emptying whose valves are damaged must be returned to the BPS cylinder filling station. When releasing gas from such cylinders, the procedure approved by the company manager must be followed.

Users of gases supplied in cylinders must protect cylinders from heat sources and from mechanical, chemical, or other types of damage. After a cylinder is completely emptied and the valve removed, no carbon dioxide remains in the cylinder. A fully emptied cylinder is classified as non-hazardous waste according to Regulation (EU) No. 1357/2014.

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Packaging waste must be handed over to authorized waste management companies or scrap metal collectors. In Lithuania, this waste must be managed in accordance with the Law of the Republic of Lithuania on Packaging and Packaging Waste Management and applicable waste management regulations; in other countries, in accordance with national legal requirements.

Until the packaging is completely emptied, the labeling in accordance with Regulation (EC) No. 1272/2008 must not be removed.

Waste treatment methods:

Avoid releasing large quantities into the environment. Do not dispose of in places where the substance may accumulate and create a hazard. Return unused product in the original container to the supplier.

List of waste codes (according to amendments to Commission Decision 2000/532/EC):
16 05 05 – Gases in pressure containers other than those mentioned in 16 05 04.

14. TRANSPORT INFORMATION

14.1 UN number

1013 (for cylinders and cylinder packs only)

2187 (for isothermal, cryogenic vessels and tanks only)

14.2 UN proper shipping name

Carbon dioxide

Carbon dioxide, refrigerated, liquid

14.3 Transport hazard class(es): 2

Tunnel restriction code: C/E

Passage through category C and D tunnels is prohibited when transported in tanks. Passage through category E tunnels is prohibited.

Air transport (ICAO-TI / IATA-DGR)

Class/Division (subsidiary risk): **2.2**

Sea transport (IMDG):

Class/Division (subsidiary risk): **2.2**

14.4 Packing group: Not applicable

14.5 Dangerous cargo code:

20 Carbon dioxide

22 Carbon dioxide, refrigerated, liquid

14.6 Special precautions for users

Packing instruction: P203

Road/Rail transport (ADR/RID): P203

Air transport (ICAO-TI / IATA-DGR)

Transport by passenger and cargo aircraft: Allowed

Packing instruction for passenger and cargo aircraft: 202

Special precautions for users:

Avoid transporting in vehicles where the cargo space is not separated from the driver's cabin. Ensure that the vehicle driver is aware of the potential hazards of the cargo and knows what to do in case of an accident or emergency.

Before transporting product containers:

- Ensure adequate ventilation.
- Ensure that the containers are properly secured.
- Ensure that the container valve is closed and there is no leakage.
- Ensure that the outlet valve cap or plug (if provided) is properly fitted.
- Ensure that the valve protection device (if provided) is correctly installed.

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Additional transport information:

Avoid transporting in vehicles where the cargo space is not separated from the driver's cabin. Ensure that the vehicle driver is aware of the potential hazards of the cargo and knows what to do in case of an accident or emergency.

Before transporting product containers:

- Ensure that the containers are properly secured.
- Ensure that the container valve is closed and there is no leakage.
- Ensure that the outlet valve cap or plug (if provided) is properly fitted.
- Ensure that the valve protection device (if provided) is correctly installed.
- Ensure adequate ventilation.
- Ensure compliance with applicable regulations.

Liquid carbon dioxide in cylinders and cryogenic tanks may be transported by all means of transport in accordance with the applicable transport regulations.

Cylinders containing liquid carbon dioxide must be transported horizontally with partitions between cylinders, or vertically in special containers with protection to prevent tipping.

If the quantity of liquid carbon dioxide transported does not exceed **1000 kg per transport unit**, the ADR requirements specified in section % of the ADR regulations apply only partially.

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

Not applicable

15. REGULATORY INFORMATION %

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

EU legislation:

- 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, Commission Regulation (EC) No. 1488/94, Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (Official Journal of the European Union L 396/1, 2006), as amended.
- Commission Regulation (EU) 2020/878 amending Annex II to Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (OJ L 203, 26 June 2020).
- 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 (CLP), amending and repealing Directives 67/548/EEC and 1999/45/EC and amending Regulation (EC) No. 1907/2006 (OJ L 353/1, 2008), as amended.
- Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors, amending Regulation (EC) No. 1907/2006 and repealing Regulation (EU) No. 98/2013 (OJ L 186/1, 2019), as amended.
- Regulation (EC) No. 853/2004 of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs (OJ L 139/1, 2004), as amended.
- Commission Regulation (EU) No. 1357/2014 of 18 December 2014 replacing Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste (OJ L 365/89, 2014), as amended.
- Commission Regulation (EU) No. 231/2012 of 9 March 2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No. 1333/2008 (OJ L 83/1, 2012), as amended.
- Regulation (EU) No. 1169/2011 on the provision of food information to consumers, as amended.

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- Commission Regulation (EU) 2022/1396 of 11 August 2022 amending Regulation (EU) No. 231/2012 laying down specifications for food additives listed in Annexes II and III to Regulation (EC) No. 1333/2008.
- Regulation (EC) No. 1935/2004 of the European Parliament and of the Council of 27 October 2004 on materials and articles intended to come into contact with food, repealing Directives 80/590/EEC and 89/109/EEC.
- Regulation (EC) No. 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and procedures in matters of food safety.
- Commission Regulation (EC) No. 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs.
- Commission Notice on the implementation of food safety management systems covering good hygiene practices and procedures based on HACCP principles, including facilitation/flexibility of implementation in certain food businesses (2022/C 355/01).
- Directive 2011/91/EU of the European Parliament and of the Council of 13 December 2011 on indications or marks identifying the lot to which a foodstuff belongs.
- Commission Regulation (EC) No. 552/2009 amending Annex XVII to Regulation (EC) No. 1907/2006 (REACH) (OJ L 164, 2009), as amended.
- Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances (Seveso III) (OJ L 197/1, 2012), as amended.
- Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from risks related to chemical agents at work (OJ L 131/11, 1998), as amended.
- Directive 2004/37/EC of the European Parliament and of the Council of 29 April 2004 on the protection of workers from risks related to exposure to carcinogens or mutagens at work (OJ L 158/50, 2004), as amended.
- European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).
- Regulations concerning the International Carriage of Dangerous Goods by Rail (RID).
- International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code).
- International Maritime Dangerous Goods Code (IMDG Code).
- International Convention for the Prevention of Pollution from Ships (MARPOL 73/78).
- Guidance on the compilation of Safety Data Sheets and exposure scenarios (European Chemicals Agency, 2018, Reference: ECHA-18-G-07-LT).
- European Inventory of Existing Commercial Chemical Substances (EINECS) (OJ C 146 A, 1990).
- European List of Notified Chemical Substances (ELINCS) (EUR 22543 EN, 2006).

National legislation (Lithuania):

- Law on Chemical Substances and Preparations of the Republic of Lithuania (18 April 2000 No. VIII-1641), as amended.
- Law on the Control of Poisonous Substances of the Republic of Lithuania (12 July 2001 No. IX-456), as amended.
- Law on the Carriage of Dangerous Goods by Road, Rail and Inland Waterways of the Republic of Lithuania, as amended.
- Law on Waste Management of the Republic of Lithuania (16 June 1998 No. VIII-787), as amended.
- Law on Packaging and Packaging Waste Management of the Republic of Lithuania (25 September 2001 No. IX-517), as amended.

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- Lithuanian Hygiene Standard HN 23:2011 “Occupational exposure limit values for chemical substances, general requirements for measurement and exposure assessment”.
- Regulations on the protection of workers from chemical agents and carcinogens at work.
- Waste Management Rules approved by the Minister of Environment.
- Government Resolution No. 966 of 17 August 2004 on the prevention, response and investigation of industrial accidents.

Applicable standards:

- **LST EN 166** – Personal eye protection.
- **LST EN ISO 374-1** – Protective gloves against dangerous chemicals and micro-organisms.
- **LST EN 388** – Protective gloves against mechanical risks.
- **LST EN 402** – Respiratory protective devices.
- **LST EN 420** – Protective gloves – General requirements.
- **LST EN 469** – Protective clothing for firefighters.
- **LST EN 511** – Protective gloves against cold.
- **LST EN 1251-1** – Cryogenic vessels – Transportable vacuum insulated vessels.
- **LST EN ISO 13688** – Protective clothing – General requirements.
- **LST EN 14387** – Gas filters and combined filters.
- **LST EN ISO 20345** – Personal protective equipment – Safety footwear.
- **ISO 11114-1:2020** – Gas cylinders – Compatibility of cylinder and valve materials with gas contents.

Additional information:

The product is not subject to restrictions under Government Resolution No. 966 of 17 August 2004 on the prevention, control and investigation of industrial accidents involving dangerous substances or Directive 2012/18/EU.

Restrictions under Regulation (EU) 2019/1148: **No restrictions apply to carbon dioxide.**

15.2 Chemical safety assessment

Carbon dioxide is exempt from the registration requirement under Article 2(7)(b) and Annex V, Section 13 of Regulation (EC) No. 1907/2006 (REACH). Therefore, a chemical safety assessment has not been carried out.

16. OTHER INFORMATION

(a) Changes to the Safety Data Sheet compared to the previous version:

- SDS header: Commission Regulation (EU) No. 2015/830 has been replaced by Commission Regulation (EU) 2020/878;
- Section 15.1: Updated information on EU and Lithuanian legislation, newly added information stating that the product is not subject to restrictions under Regulation (EU) 2019/1148;
- Section 16: Revised SDS review and revision dates, and version number.

(b) Explanation of abbreviations and acronyms used in the Safety Data Sheet:

ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road

C&L – Classification and Labelling

CAS – Chemical Abstracts Service

CLP – Classification, Labelling and Packaging Regulation; Regulation (EC) No. 1272/2008

EC – European Community

EC No. – EINECS and ELINCS number

ECHA – European Chemicals Agency

EINECS – European Inventory of Existing Commercial Chemical Substances

EC – European Commission

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH), Annex II with all subsequent amendments and additions, and Commission Regulation (EU) 2020/878

CARBON DIOXIDE

ELINCS – European List of Notified Chemical Substances

EU – European Union

GHS – Globally Harmonised System

HN – Hygiene Standard

IMDG – International Maritime Dangerous Goods Code

REACH Regulation – Registration, Evaluation, Authorisation and Restriction of Chemicals (EC) No. 1907/2006

Refrigerated liquefied gas – Refrigerated liquefied gases

RID – Regulations concerning the International Carriage of Dangerous Goods by Rail

SDS – Safety Data Sheet

SMGS – Agreement on International Goods Transport by Rail

vPvB – Very Persistent and Very Bioaccumulative

(c) Key literature references and sources of data:

1. [GESTIS Substance Database](#)

2. EIGA Code of Practice Doc. 30 "Disposal of Gases", available at <http://www.eiga.org>

(d) List of relevant hazard and/or precautionary statements:

H281: Contains refrigerated gas; may cause cryogenic burns or injury.

P282: Wear cold-insulating gloves/face shield/eye protection.

P336: Thaw frosted parts with lukewarm water. Do not rub affected area.

P315: Get immediate medical advice/attention.

P403: Store in a well-ventilated place.

P250: Do not subject to shock.

(e) Recommendations for worker training required to ensure human health and environmental protection:

Persons handling, using, or storing this product must be trained in working with toxic chemical substances, hygiene practices when working with such substances, the product's properties and associated hazards, proper handling procedures, required personal protective equipment, principles of first aid, and emergency response procedures. Workers must be familiar with this Safety Data Sheet. Before working with the product, individuals must be properly instructed.

The data provided in this Safety Data Sheet must be available to all persons whose work involves the chemical substance or preparation. The information corresponds to our current knowledge and is intended to describe the chemical product in terms of occupational safety, health protection, and environmental protection.

The information in the Safety Data Sheet will be supplemented as new data become available regarding the effects of the chemical substance or preparation on human health and the environment, as well as preventive measures to reduce or completely avoid hazards.

The information provided in this Safety Data Sheet does not reveal other specific properties of the chemical substance or preparation.

This version replaces all previous documents.

The end of Safety Data Sheet