

Safety Data Sheet

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

Reviewed on: 2026-05-20
Version number: 5.0
Revision number: 5
Date of revision: 2026-05-20

DRY ICE (CARBON DIOXIDE)

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name – *Dry Ice*

Chemical name – *Carbon dioxide (solid)*

Identification number – *not applicable*

EC No. – *204-696-9*

CAS No. – *124-38-9*

REACH registration number – *exempted from registration under Annex V of 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 for maintaining low temperatures during storage, transportation, and distribution of frozen food products. Used for cooling as food additive E290 according to EU Regulation No. 231/2012, for tank and metal cleaning, metal cooling, creative, artistic and entertainment activities, and in laboratories.*

1.2.2 Uses advised against: *None.*

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*

Tel.: *+370 349 56259*

Manufacturer/Supplier website: www.gaschema.lt

Competent person responsible for the SDS: *Z. Andriulaitienė, z.andriulaitiene@gaschema.lt*

1.4 Emergency telephone number

Poison Control and Information Bureau in the Republic of Lithuania: +370 52362052, mobile +370 687 53378, website apsinuodijau.lt or General Emergency Centre 112.

Emergency services operate 24 hours a day, 365 days a year.

Additional notes (language of assistance): assistance is provided in Lithuanian.

European poison control centres can be found online at:
<http://www.who.int/pcs/poisons/centre/directory/euro/en/>.

Poison control centre telephone numbers 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 (Prague) +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

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No. 1272/2008: *not regulated, not classified*

2.1.3 Additional information: *For the full text of precautionary statements, see Section 16.*

2.2 Label elements according to Regulation (EC) No. 1272/2008

Precautionary statements:

P282 "Wear cold insulating gloves/face shield/eye protection."

P403 "Store in a well-ventilated place."

2.3 Other hazards

As dry ice is an inorganic substance, 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

According to Regulation (EC) No. 1907/2006, the product is treated as a mono-constituent substance.

CAS No.	EC No.	REACH Registration No.	Wt %	Substance Name	Classification according to Regulation (EC) No. 1272/2008 (CLP) ATE, EUH, M-factors
124-38-9	204-696-9	Exempted from registration according to Annex V of Regulation (EC) No. 1907/2006	100	Carbon dioxide	Not applicable

No hazardous components.

4. FIRST AID MEASURES

4.1 Description of first aid measures

The substance may enter the body through:

Inhalation: *Remove the affected person exposed to carbon dioxide to fresh air, administer oxygen, and seek medical attention.*

Skin contact: *Cover frostbitten areas with a sterile dressing. Seek medical attention.*

Eye contact: *Rinse eyes thoroughly with water. Seek medical attention.*

Ingestion: *Seek immediate medical attention.*

4.2 Most important symptoms and effects, both acute and delayed

High concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. The victim may not be aware of asphyxiation.

Low CO₂ concentrations cause increased breathing rate and headache.

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4.3 Indication of any immediate medical attention and special treatment needed

Use self-contained breathing apparatus (SCBA).

Standard EN 137 — Self-contained open-circuit compressed air breathing apparatus with full face mask.

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

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: *Do not use water jet for extinguishing.*

Unsuitable extinguishing media: *None.*

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

5.3 Advice for firefighters

Use fire-fighting measures appropriate to the surrounding fire.

Special protective equipment for firefighters: In confined spaces use self-contained breathing apparatus (SCBA).

Standard protective clothing and equipment (self-contained breathing apparatus) for firefighters.

EN 469: Protective clothing for firefighters.

EN 659: Protective gloves for firefighters.

EN 15090: Footwear for firefighters.

EN 443: Helmets for firefighting in buildings and other structures.

Standard EN 137 — Self-contained open-circuit compressed air breathing apparatus with full face mask.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:

Avoid contact with the product. Wear personal protective equipment specified in Section 8.

Environmental precautions: *Not required.*

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

6.2 Environmental precautions: *Prevent entry into drains and sewers.*

6.3 Methods and material for containment and cleaning up: *Ventilate the storage area.*

6.4 Reference to other sections: *Personal protective equipment is specified in Section 8, and waste disposal methods are specified in Section 13.*

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Requirements and recommendations for use: Rooms where solid carbon dioxide is produced and stored must be equipped with supply and exhaust ventilation in accordance with STR 2.09.02 “Heating, Ventilation and Air Conditioning” requirements, as well as emergency ventilation.

Do not smoke while handling the product.

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*The product must be handled in accordance with good industrial hygiene and safety practices.
Do not inhale gas.*

Avoid release of the product into the working area.

Further information on safe use can be found in EIGA Doc.150 “Code of Practice Dry Ice”, available at <http://www.eiga.eu>, or by contacting your supplier.

Requirements for storage: *Dry ice shall be stored in special insulated storage containers at atmospheric pressure. Storage in tightly sealed containers without safety valves is prohibited.
Information on storage quantity limits under specified conditions: Not regulated.*

7.2 Conditions for safe storage, including any incompatibilities

Incompatible substances for storage together: *None.*

Requirements for packaging of the chemical substance/preparation:

Insulated containers must not be tightly sealed or must be fitted with safety valves.

7.3 Specific end use(s)

Used for maintaining low temperatures during storage, transportation and distribution of frozen food products, and for technical purposes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limit values:

Long-term exposure limit value (OEL) — 9000 mg/m³ CO₂, according to Lithuanian Hygiene Standard HN 23.

8.2 Exposure controls

8.2.1 Appropriate engineering controls: *Supply and exhaust ventilation.*

8.2.2 Individual protection measures:

Eye and face protection: *Safety goggles.*

Skin protection: *Work clothing.*

Hand protection: *Protective work gloves, gloves according to EN 388 standard.*

Other protection: *Heavy cotton protective suit (jacket and trousers), safety footwear according to EN ISO 20345.*

Respiratory protection: *Not necessary.*

Protection against thermal hazards: *Wear cold insulating gloves according to EN 511*



8.2.3 Environmental exposure controls: *Not necessary.*

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9. PHYSICAL AND CHEMICAL PROPERTIES	
9.1 Information on basic physical and chemical properties	
Appearance:	<i>colourless, odourless liquid</i>
pH:	<i>Not relevant for liquefied gas</i>
Melting point/freezing point:	<i>-78.5 °C / -57 °C</i>
Initial boiling point and boiling range:	<i>-78.5 °C</i>
Flash point:	<i>non-flammable</i>
Flammability (gas):	<i>non-flammable</i>
Explosive properties:	<i>non-explosive</i>
Oxidising properties:	<i>non-oxidising</i>
Vapour pressure:	<i>569 mmHg</i>
Relative density:	<i>761 kg/m³ (21.1 °C, pressure 5.8 MPa)</i>
Solubility in water:	<i>1.45 kg/m³</i>
Partition coefficient:	<i>n-octanol/water: not relevant for inorganic gaseous substances</i>
Viscosity:	<i>0.07 cP at -78 °C</i>
Vapour density:	<i>not determined</i>
Evaporation rate:	<i>no data available</i>
Viscosity:	<i>not relevant for gas</i>
9.2 Other information	
<i>None</i>	
10. STABILITY AND REACTIVITY	
10.1 Reactivity: <i>Dry ice sublimates, turning into gaseous carbon dioxide.</i>	
10.2 Chemical stability: <i>Dry ice sublimates, turning into gaseous carbon dioxide.</i>	
Stabilizers required: <i>none.</i>	
10.3 Possibility of hazardous reactions: <i>None.</i>	
10.4 Conditions to avoid: <i>Protect from sunlight, store in a well-ventilated area, avoid heating of the container.</i>	
10.5 Incompatible materials: <i>None.</i>	
10.6 Hazardous decomposition products: <i>Gaseous carbon dioxide.</i>	
11. TOXICOLOGICAL INFORMATION	
11.1 Information on toxicological effects (substance)	
11.1.1 Acute toxicity: <i>non-toxic</i>	
11.1.2 Skin corrosion/irritation: <i>not irritating</i>	
11.1.3 Respiratory or skin sensitisation: <i>non-sensitising</i>	
11.1.4 Germ cell mutagenicity: <i>no evidence of mutagenic effects</i>	
11.1.5 Carcinogenicity: <i>no carcinogenic potential</i>	
11.1.6 Reproductive toxicity: <i>non-toxic</i>	
11.1.7 Specific target organ toxicity (STOT) – single exposure: <i>non-toxic</i>	
11.1.8 Specific target organ toxicity (STOT) – repeated exposure: <i>non-toxic</i>	
11.1.9 Aspiration hazard: <i>none</i>	

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11.2 Information on other hazards

11.2.1 Endocrine disrupting properties: *No additional information available.*

11.2.2 Other information on hazards

Unlike simple asphyxiant gases, carbon dioxide may cause death even when normal oxygen levels (20–21%) are present. It has been found that CO₂ at 5% concentration may, through synergistic effects, increase the toxic effects of certain other gases (CO, NO₂). It has also been shown that exposure to CO₂ increases the formation of carboxy- 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, refer to EIGA Safety Info 24 “Carbon Dioxide – Physiological Hazards” at www.eiga.eu. The substance/mixture does not have endocrine-disrupting properties.

12. ECOLOGICAL INFORMATION

12.1 Toxicity: *Non-toxic.*

12.2 Persistence and degradability: *A natural substance that does not degrade.*

12.3 Bioaccumulative potential: *No bioaccumulation potential.*

12.4 Mobility in soil: *No data available; does not cause any ecological harm.*

12.5 Results of PBT and vPvB assessment: *According to Annex XIII of Regulation (EC) No. 1907/2006, PBT and vPvB assessment is not performed for inorganic substances.*

12.6 Other adverse effects: *None.*

13. DISPOSAL CONSIDERATIONS

Waste from residues

May be released to the environment only in a well-ventilated area. Do not dispose of in locations where accumulation of the substance may become hazardous. Follow EIGA Practice Code Doc.30 “Disposal of Gases”, available at EIGA for recommendations on appropriate disposal methods. If advice is required, contact the supplier.

General information: Do not dispose of in locations where accumulation of the substance may become hazardous. Release is permitted only in well-ventilated areas. Avoid large releases into the environment. If advice is required, contact the supplier.

Packaging waste

According to Regulation (EU) No. 1357/2014, classified as non-hazardous waste.

Dry ice is packaged in cardboard boxes. Used cardboard packaging (waste code 20 01 01) is handed over to waste management companies. These wastes must be managed in accordance with the Law on Packaging and Packaging Waste Management of the Republic of Lithuania, applicable waste management regulations, and in other countries in accordance with national legislation.

Until packaging is completely emptied, labeling according to Regulation (EC) No. 1272/2008 must not be removed.

14. TRANSPORT INFORMATION

Dry ice is transported in an insulated storage container at atmospheric pressure, or in an insulated container equipped with a safety valve.

14.1 UN number: 1845

14.2 UN proper shipping name: Carbon dioxide, solid (dry ice)

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14.3 Transport hazard class(es): 9



Inland waterway transport (ADN)

Rail transport (RID)

Classification code: M11

14.4 Packing group: *Not applicable*

14.5 Environmental hazards: *Not applicable*

14.6 Special precautions for users:

Air transport (ICAO-TI / IATA-DGR)

Passenger and cargo aircraft: 954

Cargo aircraft only: 954

Sea transport (IMDG): P0003

Transport precautions:

Avoid transporting in vehicles where the cargo compartment is not separated from the driver's cabin. Ensure that the driver is aware of the potential hazards of the cargo and the actions to take in the event of an accident or emergency.

Before transport of product containers:

- Ensure adequate ventilation.*
- Ensure containers are properly secured.*
-

14.7 Transport in bulk according to MARPOL 73/78 Annex II and the IBC Code: *Not applicable.*

15. REGULATORY INFORMATION

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

Legal acts regulating classification, labelling, restrictions of use, occupational safety and health requirements, occupational exposure limit values, waste management, etc.:

- Regulation (EC) No 1272/2008 of the European Parliament and of the Council 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;*
- Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH);*
- Commission Regulation (EU) No 453/2010 amending Regulation (EC) No 1907/2006 (REACH);*
- Commission Regulation (EU) No 1357/2014 replacing Annex III to Directive 2008/98/EC on waste;*
- Lithuanian Hygiene Standard HN 23 "Occupational exposure limit values for chemical substances."*

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General requirements for measurement and exposure assessment”;

- *Valid “Regulations on Protection of Workers from Chemical Agents at Work” and “Regulations on Protection of Workers from Carcinogens and Mutagens at Work”;*
- *Hygiene Standard HN 36 “Prohibited and Restricted Substances”;*
- *Valid “Law on Waste Management of the Republic of Lithuania”;*
- *Valid “Waste Management Rules”;*
- *Valid “Rules on Labelling and Indication of Prices of Goods (Products) of the Republic of Lithuania”;*
- *Valid “Temporary Rules for the Use of Seamless Cylinders”;*
- *Regulations concerning the international carriage of dangerous goods by rail (RID);*
- *International Maritime Dangerous Goods Code (IMDG);*

Ensure compliance with all national and local regulations.

Safety Data Sheet prepared in accordance with Commission Regulation (EU) 2020/878.

Council Directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers at work.

Directive 2016/425/EU on personal protective equipment.

Directive 2014/34/EU on equipment and protective systems intended for use in potentially explosive atmospheres (ATEX).

Only products complying with food regulations 95/2/EC and 2008/84/EC may be used as food additives and must be appropriately labelled.

The Safety Data Sheet is prepared in accordance with Regulation (EU) 2015/830.

15.2 Chemical safety assessment

Since carbon dioxide, which constitutes dry ice, is exempt from registration under Annex V of Regulation (EC) No 1907/2006, no chemical safety assessment has been carried out.

16. OTHER INFORMATION

Explanation of abbreviations used

P282 “Wear cold insulating gloves/use face shield/eye protection.”

P403 “Store in a well-ventilated place.”

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

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

SMGS – Agreement on International Goods Transport by Rail.

Asphyxiation hazard is often underestimated and should be emphasized during operator training. Further information is available in EIGA SL 01 “Dangers of Asphyxiation”, downloadable at [EIGA](#).

Other information: Key literature references and data sources are provided in EIGA Doc. 169 “Classification and Labelling Guide”, available at www.eiga.eu.

The information in this Safety Data Sheet should be made available to all persons handling this chemical substance/preparation. The data is based on our current knowledge and is intended to describe the product for the purpose of health, safety, and environmental protection.

This Safety Data Sheet will be updated as new information becomes available regarding the effects of the substance/preparation on health and the environment, as well as preventive measures to reduce or eliminate hazards.

The information in this SDS does not disclose other properties of the chemical substance/preparation.

End of Safety Data Sheet.