Safety Data Sheet

A safety data sheet is not required for this product under Article 31 of REACH. This Product Safety Information Sheet has been created on a voluntary basis

Carbon dioxide (solid)

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reference: 018C

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

1.1. Product identifier

Trade name : Carbon dioxide (solid)

SDS no : 018C

Chemical description : Carbon dioxide (solid)

CAS-No. : 124-38-9

EC-No. : 204-696-9

EC Index-No. : ---

Registration-No. : Listed in Annex IV / V REACH, exempted from registration.

Chemical formula : CO_2

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

Relevant identified uses : Industrial and professional. Perform risk assessment prior to use.

Cooling (Food additive E290).

Blast cleaning.

Metal cooling.

Contact supplier for more information on uses.

Consumer use.

Uses advised against : In beverage for fogging effect, because of the risk of ingestion.

1.3. Details of the supplier of the safety data sheet

Company identification : Ice supply Limited .
Grange farm yard
Meadow way
Green Lane
Bovingdon
HP30LW

1.4. Emergency telephone number

Emergency telephone number

: ICE SUPPLY Numbers : 01442 834 200

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Not regulated.

2.2. Label elements

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

Not applicable

2.3. Other hazards

: Asphyxiant in high concentrations.

Refrigerated solidified gas. Contact with product may cause cold burns or frostbite.

In high concentrations CO_2 causes rapid circulatory insufficiency even at normal levels of oxygen concentration. Symptoms are headache, nausea and vomiting, which may lead to unconsciousness and death.

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Carbon dioxide (solid)	(CAS-No.) 124-38-9 (EC-No.) 204-696-9 (EC Index-No.) --- (Registration-No.) *1	100	Not classified

Contains no other components or impurities which will influence the classification of the product.

**1: Listed in Annex IV / V REACH, exempted from registration.*

**3: Registration not required: Substance manufactured or imported < 1t/y.*

3.2. Mixtures : Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

- Inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Perform cardiopulmonary resuscitation if breathing stopped.
- Skin contact : In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.
- Eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes.
- Ingestion : Get immediate medical attention.

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

: Low concentrations of CO_2 cause increased respiration and headache.

Refer to section 11.

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

: None.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Not applicable.
- Unsuitable extinguishing media : Not applicable.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products : None.

5.3. Advice for firefighters

Specific methods	:	Use fire control measures appropriate for the surrounding fire.
Special protective equipment for fire fighters	:	In confined space use self-contained breathing apparatus. Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters. Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

: Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
Ensure adequate air ventilation.
Act in accordance with local emergency plan.
Stay upwind.

6.2. Environmental precautions

: None.

6.3. Methods and material for containment and cleaning up

: Sweep up and collect in a suitable container .
Ventilate area.

6.4. Reference to other sections

: See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Safe use of the product	:	For more guidance on safe use, refer to the EIGA Doc.150 “Code of practice Dry Ice” downloadable at http://www.eiga.eu. and consult your supplier. The product must be handled in accordance with good industrial hygiene and safety procedures. Refer to supplier's container handling instructions. Do not smoke while handling product.

7.2. Conditions for safe storage, including any incompatibilities

: Keep only in the original container.
Observe all regulations and local requirements regarding storage of containers.
Store containers in location free from fire risk and away from sources of heat and ignition.
Keep away from combustible materials.

7.3. Specific end use(s)

: None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Carbon dioxide (solid) (124-38-9)		
OEL : Occupational Exposure Limits		
EU	TWA IOELV (EU) 8 h [mg/m³]	9000 mg/m³

	TWA IOELV (EU) 8 h [ppm]	5000 ppm
United Kingdom	WEL - LTEL - UK [mg/m³]	9150 mg/m³
	WEL - LTEL - UK [ppm]	5000 ppm
	WEL - STEL - UK [mg/m³]	27400 mg/m³
	WEL - STEL - UK [ppm]	15000 ppm
	Regulatory reference	EH40/2005 (Third edition, 2018). HSE
Ireland	OEL (IE)-(8-hour reference period) [mg/m3]	9000 mg/m³
	OEL (IE)-(8-hour reference period) [ppm]	5000 ppm
	OEL (IE)-(15min reference period) [mg/m3]	27000 mg/m³
	OEL (IE)-(15min reference period) [ppm]	15000 ppm
	Notes (IE)	IOELV (Indicative Occupational Exposure Limit Values)
	Regulatory reference	Code of Practice for the Chemical Agents Regulations 2018

DNEL (Derived-No Effect Level) : None available.

PNEC (Predicted No-Effect Concentration) : None available.

8.2. Exposure controls

8.2.1. Appropriate engineering controls

: Provide adequate general and local exhaust ventilation.
Ensure exposure is below occupational exposure limits (where available).
Consider the use of a work permit system e.g. for maintenance activities.
CO_2 detectors should be used when CO_2 may be released.

8.2.2. Individual protection measures, e.g. personal protective equipment

: A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered:
PPE compliant to the recommended EN/ISO standards should be selected.

• Eye/face protection : Wear safety glasses with side shields.
Standard EN 166 - Personal eye-protection - specifications.

• Skin protection

- Hand protection : Wear safety gloves.
Standard EN 388 - Protective gloves against mechanical risk.
Standard EN 511 - Cold insulating gloves.

- Other : Wear safety shoes while handling containers.
Standard EN ISO 20345 - Personal protective equipment - Safety footwear.

• Respiratory protection : None necessary.

• Thermal hazards : None in addition to the above sections.

8.2.3. Environmental exposure controls

: None necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

- Physical state : Refrigerated solidified gas

• Physical state at 20°C / 101.3kPa	:	Gas
• Colour	:	White.
Odour	:	Odourless.
Odour threshold	:	Odour threshold is subjective and inadequate to warn of overexposure.
pH	:	Not applicable.
Melting point / Freezing point	:	-78,5 °C At atmospheric pressure dry ice sublimes into gaseous carbon dioxide.
Boiling point	:	-56,6 °C
Flash point	:	Not applicable.
Evaporation rate	:	Not applicable.
Flammability (solid, gas)	:	Non flammable.
Explosive limits	:	Non flammable.
Vapour pressure [20°C]	:	57,3 bar(a)
Vapour pressure [50°C]	:	Not applicable.
Vapour density	:	Not applicable.
Relative density, liquid (water=1)	:	1,03
Relative density, gas (air=1)	:	1,52
Water solubility	:	2000 mg/l
Partition coefficient n-octanol/water (Log Kow)	:	0,83
Auto-ignition temperature	:	Non flammable.
Decomposition temperature	:	Not applicable.
Viscosity	:	No reliable data available.
Explosive properties	:	Not applicable.
Oxidising properties	:	Not applicable.

9.2. Other information

Molar mass	:	44 g/mol
Critical temperature [°C]	:	30 °C
Other data	:	Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

SECTION 10: Stability and reactivity

10.1. Reactivity

: No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

: Stable under normal conditions.

10.3. Possibility of hazardous reactions

: None.

10.4. Conditions to avoid

: None.

10.5. Incompatible materials

: None.

10.6. Hazardous decomposition products

: None.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Unlike simple asphyxiants, carbon dioxide has the ability to cause death even when normal oxygen levels (20-21%) are maintained. 5% CO_2 has been found to act synergistically to increase the toxicity of certain other gases (CO, NO2). CO_2 has been shown to enhance the production of carboxy- or met-hemoglobin by these gases possibly due to carbon dioxide's stimulatory effects on the respiratory and circulatory systems.
For more information, see 'EIGA Safety Info 24: Carbon Dioxide, Physiological Hazards' at www.eiga.eu.

Skin corrosion/irritation : No known effects from this product.

Serious eye damage/irritation : No known effects from this product.

Respiratory or skin sensitisation : No known effects from this product.

Germ cell mutagenicity : No known effects from this product.

Carcinogenicity : No known effects from this product.

Toxic for reproduction : Fertility : No additional information available

Toxic for reproduction : unborn child : No additional information available

STOT-single exposure : No known effects from this product.

STOT-repeated exposure : No known effects from this product.

Aspiration hazard : Not applicable.

SECTION 12: Ecological information

12.1. Toxicity

Assessment : No ecological damage caused by this product.

EC50 48h - Daphnia magna [mg/l] : No data available.
EC50 72h - Algae [mg/l] : No data available.
LC50 96 h - Fish [mg/l] : No data available.

12.2. Persistence and degradability

Assessment : No ecological damage caused by this product.

12.3. Bioaccumulative potential

Assessment : No ecological damage caused by this product.

12.4. Mobility in soil

Assessment : No ecological damage caused by this product.

12.5. Results of PBT and vPvB assessment

Assessment : Not classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects : No known effects from this product.
Effect on the ozone layer : None.
Global warming potential [CO2=1] : 1
Effect on global warming : Contains greenhouse gas(es).
When discharged in large quantities may contribute to the greenhouse effect.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Discharge to atmosphere in large quantities should be avoided.

Do not discharge into any place where its accumulation could be dangerous.

List of hazardous waste codes (from Commission Decision 2000/532/EC as amended) : None.

13.2. Additional information

: None.

SECTION 14: Transport information

14.1. UN number

UN-No. : 1845

14.2. UN proper shipping name

Transport by road/rail (ADR/RID) : Not subject to ADR except for section 5.5.3.

Transport by air (ICAO-TI / IATA-DGR) : Carbon dioxide, solid

Transport by sea (IMDG) : CARBON DIOXIDE, SOLID (DRY ICE)

14.3. Transport hazard class(es)

Transport by air (ICAO-TI / IATA-DGR)

Class / Div. (Sub. risk(s)) : 9

Transport by sea (IMDG)

Class / Div. (Sub. risk(s)) : 9

Emergency Schedule (EmS) - Fire : F-C

Emergency Schedule (EmS) - Spillage : S-V

14.4. Packing group

Transport by road/rail (ADR/RID) : Not applicable

Transport by air (ICAO-TI / IATA-DGR) : Not applicable

Transport by sea (IMDG) : Not applicable

14.5. Environmental hazards

Transport by road/rail (ADR/RID) : None.

Transport by air (ICAO-TI / IATA-DGR) : None.

Transport by sea (IMDG) : None.

14.6. Special precautions for user

Packing Instruction(s)

Transport by air (ICAO-TI / IATA-DGR)

Passenger and Cargo Aircraft : 954.

Cargo Aircraft only : 954.

Transport by sea (IMDG) : P003

Special transport precautions	:	Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

: Not applicable.

SECTION 15: Regulatory information

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

EU-Regulations

Restrictions on use	:	None.
Seveso Directive : 2012/18/EU (Seveso III)	:	Not covered.

National regulations

National legislation	:	Ensure all national/local regulations are observed.

15.2. Chemical safety assessment

: A CSA does not need to be carried out for this product.

SECTION 16: Other information

Abbreviations and acronyms	:	ATE - Acute Toxicity Estimate CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008 REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 EINECS - European Inventory of Existing Commercial Chemical Substances CAS# - Chemical Abstract Service number PPE - Personal Protection Equipment LC50 - Lethal Concentration to 50 % of a test population RMM - Risk Management Measures PBT - Persistent, Bioaccumulative and Toxic vPvB - Very Persistent and Very Bioaccumulative STOT- SE : Specific Target Organ Toxicity - Single Exposure CSA - Chemical Safety Assessment EN - European Standard UN - United Nations ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road IATA - International Air Transport Association IMDG code - International Maritime Dangerous Goods RID - Regulations concerning the International Carriage of Dangerous Goods by Rail WGK - Water Hazard Class
Training advice	:	The hazard of asphyxiation is often overlooked and must be stressed during operator training. For more guidance, refer to EIGA SL 01 “Dangers of Asphyxiation”, downloadable at http://www.eiga.eu..

DISCLAIMER OF LIABILITY : Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details given in this document are believed to be correct at the time of going to press.

Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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