



SDS number: SDS/079001.0000/079001/2.1/EN
Issue date: 25-04-2023
Revision date: 15-12-2023
Version number: 2.1

SAFETY DATA SHEET

[According to Regulation (EC) No. 1907/2006 (REACH)]

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

1.1 Product identifier

Trade name: C2S, C5S, KS2AM, KS5AM, KS2SBS, KS5SE, KS2ST, KS5ST
Other name: B Class CO₂ Fire Extinguisher

(This SDS covers gas CO₂ in pressurized container.)

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

Relevant identified uses: Fire extinguisher for use on class B fires and electrical
Uses advised against: Not determined

1.3 Details of the supplier of the safety data sheet

Manufacturer / supplier: Carrier Manufacturing Poland Sp. z o.o.
Address: ul. Kolejowa 24, 39-100 Ropczyce, Poland
Telephone number: +48 17 221 02 02
Fax: +48 17 221 02 48
e-mail address of competent person responsible for the SDS: msds-rop@carrier.com

1.4 Emergency Telephone Number

European Union emergency phone number:
112 - in case of poisoning - ask for Poison Information (24 hours a day, 7 days a week).

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Press. Gas (Ref. Liq.), H281

2.1.2 Additional information

For full text of Hazard- and EU Hazard-statements: see SECTION 16.

2.2 Label elements

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

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Hazard pictograms:**Signal word:**

Warning

Hazard Statements:

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

Precautionary statements:

P282: Wear cold insulating gloves and either face shield or eye protection.

P336 + P315: Thaw frosted parts with lukewarm water. Do not rub affected area.

Get immediate medical advice/attention.

P403: Store in a well-ventilated place.

Further information:

Explosion risk in case of fire.

Supplemental Hazard information (EU):

Not applicable.

2.3 Other hazards

Product does not contain ingredients, which meet criteria for PBT or vPvB in accordance with Annex XIII of REACH Regulation.

Product does not contain substances identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100.

SECTION 3: Composition / information on ingredients**3.1 Substances**

CAS No	EC No	REACH Registration No	Concentration [%] (w/w)	Name	Classification according to Regulation (EC) No 1272/2008 (CLP)
124-38-9	204-696-9	Listed in Annex IV of Regulation (EC) No 1907/2006 (REACH) - exempted from registration	100	Carbon dioxide	Press. Gas (Liq.), H280

3.2 Mixtures

Not applicable.

Further information:

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

SVHC: Components of the pressurized container contains Lead CAS No: 7439-92-1 in a concentration greater than 0.1% (w/w). The identification of the Candidate List substance is sufficient to allow safe use of the article throughout the whole life cycle including**Material name:** B Class CO₂ Fire Extinguisher**Version number:** 2.1**Issue date:** 25-04-2023**Revision date:** 15-12-2023**SDS number:**

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service life, disassembly and waste/recycling stage. For more information please see: SCIP DATABASE <https://echa.europa.eu/pl/scip-database> (search by part number).

Product contains gas under pressure: carbon dioxide CO₂ CAS 124-38-9, with **national limit values**, for more information: see SECTION 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes: if you feel unwell, seek medical advice (show the Safety Data Sheet where possible).

Following inhalation: remove victim to fresh air, keep warm and rested. Apply artificial respiration if breathing stopped. Get immediate medical attention.

Following skin contact: if frostbite or freezing occurs, immediately flush with plenty of lukewarm water the affected area. Do not use hot water. Do not rub affected area. Get immediate medical attention.

Following eye contact: immediately flush eyes thoroughly with water for at least 15 minutes. In case of frostbite spray with water for at least 15 minutes. If irritation occurs, get medical assistance.

Following ingestion: ingestion is not considered a potential route of exposure.

Self-protection of the first aider: use personal protective equipment as required.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation: in high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Low concentrations of CO₂ cause increased respiration and headache.

4.3 Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: this product is not flammable. Use extinguishing agent suitable for type of surrounding fire, product is used for fire extinguishing.

Unsuitable extinguishing media: none, product is used for fire extinguishing.

5.2 Special hazards arising from the substance or mixture

Specific hazards: Exposure to fire may cause containers to rupture/explode.
Carbon dioxide. Carbon monoxide.

5.3 Advice for firefighters

Protection during firefighting: Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment. Use appropriate respiratory protection. Avoid direct contact with skin and eyes.

6.2 Environmental precautions

Try to stop release.

6.3 Methods and material for containment and cleaning up

Ventilate area.

6.4 Reference to other sections

Appropriate conduct with waste product – SECTION 13. Personal protection equipment – SECTION 8.

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handle in accordance with good occupational hygiene and safety practices. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. Do not breathe gas. Ensure adequate ventilation.

7.2 Conditions for safe storage, including any incompatibilities

Containers should not be stored in conditions likely to encourage corrosion. Keep container below +60°C. 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)

No information about uses other than mentioned in subsection 1.2.

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Biological limit values: no biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures: follow standard monitoring procedures.

Substance: Carbon dioxide (CAS number: 124-38-9)

Country	Limit value - Eight hours		Limit value - Short term		Legal basis
	ppm	mg/m ³	ppm	mg/m ³	
European Union	5000	9000	-	-	Directive 2006/15/EC of 7 February 2006.
Austria	5000	9000	10000	18000	Limits Ordinance 2011, version of 13.02.2017.
Belgium	5000	9131	30000	54784	Federal Public Service Employment - List of limit values for exposure to chemical agents.
Bulgaria	5000	9000	-	-	Ordinance No. 13 of 30 December 2003 to protect workers from the risks related to exposure to chemical agents at work.
Croatia	5000	9000	-	-	Occupational Exposure Limits. Pursuant to Article 12 Paragraph 1 of the Law on Protection at Work ("Official Gazette", Nos. 59/96, 94/96, 114/03, 100/04, 86/08 and 116/08), the Minister of Economy, Labour and Entrepreneurship. Exposure limits set forth Hazardous Substances At Work And A Biological Limit Values.
Cyprus	5000	9000	-	-	Safety and Health at Work (Chemical Agents) Regulations of 2001.
Czech Republic	-	9000	-	45000	2013 Government Regulation of 20 December 2012 amending Regulation no. 361/2007 establishing the conditions of health protection at work.
Denmark	5000	9000	-	-	Order on limit values for substances and materials no. 986 of 11 October 2012, which came into force on 12 October 2012.
Estonia	5000	9000	-	-	Government of the Republic on 18 September 2001. A Regulation No. 293 "Occupational exposure limits".
Finland	5000	9100	-	-	Ministry of Health publications - TWA 2016 Workplace exposure limits and Social Affairs.
France	5000	9000	-	-	The National Institute for Research and Safety for the Prevention of Occupational Accidents and Diseases (INRS) - Occupational Exposure Limits to Chemical Agents in France.
Germany	5000	9100	-	-	Technical rules for hazardous substances. Committee for Hazardous Substances (AGS) 1/2006 p. 41-55 last amended and supplemented: 4.11.2016.
Great Britain	5000	9150	15000	27400	Health and Safety Executive - EH40 (Second edition, published 2011) Workplace exposure limits.

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Greece	5000	9000	5000	54000	Occupational Exposure Limits.
Hungary	-	9000	-	-	25/2000 Chemical safety on the job. (IX. 30), the Minister of Health, Social and Family Affairs.
Iceland	5000	9000	-	-	Occupational Exposure Limits.
Ireland	5000	9000	15000	27000	Ireland's National Authority for Occupational Safety and Health in Schedule 1 to the 2002 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations, 2001.
Italy	5000	9000	-	-	Limit values Italy: Legislative Decree of the Government 277, the Decree of 15/08/1991, 25/02/2000, 26/02/2004 Ministerial Decree.
Latvia	5000	9000	-	-	Revised by the Ministry of Welfare Ministers of May 15th 2007, Annex 1 regulations No. 325 Chemical occupational exposure limits (WEL).
Lithuania	5000	9000	-	-	Lithuanian Hygiene Norm HN 23: 2011 Chemicals limit values . Hazard and Impact Assessment General Requirements for Occupational Exposure Limit values.
The Netherlands	-	9000	-	-	OEL Database of the Social and Economic Council of the Netherlands (SER).
Norway	5000	9000	-	-	Regulations on measures and limit values for physical and chemical factors in the work environment and contamination risk groups for biological factors (regulation about measures and limits).
Poland	-	9000	-	27000	Ordinance of the Minister of Labour and Social Policy on the Maximum Admissible Concentrations and Intensities of Harmful to Health Agents in the Working Environment.
Portugal	5000	9000	-	-	Law gazette, 1st series – No. 26 - February 6, 2012 ANNEX III Indicative occupational exposure limit values.
Romania	5000	9000	-	-	Occupational Exposure Limits.
Slovakia	5000	9000	-	-	Annex. 1. Government Decree no. 355/2006. Exposure limits of chemical agents in the workplace atmosphere.
Slovenia	5000	9000	-	-	Occupational Exposure Limits.
Spain	5000	9150	-	-	Ministry of Employment and Social Security Occupational exposure limits for chemical agents in Spain (2016).
Sweden	5000	9000	10000	18000	Occupational exposure limits (AFS 2015: 7) Work Environment.
Switzerland	5000	9000	-	-	SUVA - limits at the workplace 2016.
Turkey	5000	9000	-	-	The Ministry Of Labor And Social Security. Health In Work With Chemical Compounds. Regulation On Security Measures 2013.

For more information, please check any national occupational exposure limit values in your country.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas. Ensure exposure is below occupational exposure limits. Observe good occupational hygiene and safety practices. Do not eat, drink or smoke when using the product.

8.2.2 Personal protection equipment

Personal protective equipment must meet requirements of directive 89/686/CE. Employer is obliged to ensure equipment adequate to activities carried out, with quality demands, cleaning and maintenance.

Hand and body protection: under normal conditions of work is not required.

Eye and face protection: wear safety glasses with side shields (or goggles), if risk assessment indicates that it is necessary.

Respiratory protection: self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres.

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8.2.3 Environmental exposure controls

Avoid release to the environment, do not enter the sewage system. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Basic physical and chemical properties of:

	(CO ₂)
a) Physical state:	gas [20°C/101 kPa]
b) Colour:	colorless
c) Odour:	odorless
d) Melting point/freezing point:	-78.5°C
e) Boiling point or initial boiling point and boiling range:	-56.6°C (s)
f) Flammability:	not flammable
g) Lower and upper explosion limit:	not applicable
h) Flash point:	not applicable
i) Auto-ignition temperature:	not flammable
j) Decomposition temperature:	not applicable
k) pH:	not applicable
l) Kinematic viscosity:	not applicable
m) Solubility:	2000 mg/l soluble in water
n) Partition coefficient n-octanol/water:	0,83
o) Vapour pressure:	57,3 bar [20°C]
p) Density and/or relative density:	0,82 g/cm ³
q) Relative vapour density:	1,52
r) Particle characteristics:	not applicable

9.2 Other information

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

Product contains gas under pressure.

SECTION 10: Stability and reactivity

10.1 Reactivity

No reactivity hazard.

10.2 Chemical stability

The product is stable under normal conditions of handling and storage.

10.3 Possibility of hazardous reactions

No dangerous reactions are known.

10.4 Conditions to avoid

Avoid elevated temperatures, sources of fire and heat.

10.5 Incompatible materials

No additional information available.

10.6 Hazardous decomposition products

No additional information available.

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SECTION 11: Toxicological information

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

Acute toxicity: no known effects from this product.

Skin corrosion/irritation: based on available data, the classification criteria are not met.

Serious eye damage/irritation: based on available data, the classification criteria are not met.

Respiratory or skin sensitization: based on available data, the classification criteria are not met.

Germ cell mutagenicity: based on available data, the classification criteria are not met.

Carcinogenicity: based on available data, the classification criteria are not met.

Reproductive toxicity: based on available data, the classification criteria are not met.

STOT-single exposure: based on available data, the classification criteria are not met.

STOT-repeated exposure: based on available data, the classification criteria are not met.

Aspiration hazard: based on available data, the classification criteria are not met.

11.2 Information on other hazards

In high concentrations cause rapid circulatory insufficiency. Symptoms are headache, nausea and vomiting, which may lead to unconsciousness. Unlike simple asphyxiants, carbon dioxide has the ability to cause death even when normal oxygen levels (20-21%) are maintained. 5% CO₂ has been found to act synergistically to increase the toxicity of certain other gases (CO, NO₂). CO₂ 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.

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 Bio accumulative 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 Endocrine disrupting properties

The product does not contain ingredients entered in the list established in accordance with Art. 59 sec. 1 as having endocrine-disrupting properties or ingredients with endocrine-disrupting properties in accordance with the criteria set out in Regulation 2017/2100/EU or Regulation 2018/605/EU in a concentration equal to or greater than 0.1%.

12.7 Other adverse effects Propellant:

Effect on the ozone layer: none.

Global warming potential [CO₂=1]: 1.

Effect on global warming: when discharged in large quantities may contribute to the greenhouse effect. Contains greenhouse gas not covered by Regulation (EC) 842/2006.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

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Disposal methods for gas: discharge to atmosphere in large quantities should be avoided. Do not discharge into any place where its accumulation could be dangerous.

Disposal methods for used packing: package should be passed to a certified company. Do not mix with other wastes. Waste code should be assigned in place of formation. Waste code should be assigned in place of formation.

Legal basis: Directive 2008/98/EC, 94/62/EC.

SECTION 14: Transport information

14.1 UN Number

UN 1044

14.2 UN proper shipping name

Fire extinguisher

14.3 Transport hazard class(es)

2.2

14.4 Packing group

Not applicable.

14.5 Environmental hazards

Not applicable.

14.6 Special precautions for user

Land carriage:

- according to special regulation 594 free from GGVSE/ADR-regulations.

Sea carriage:

- IMDG/GGV sea: Class 2.2

- EMS: F-C,S-V

- PG: none,

- marine pollutant: no marking / label,

- danger marking No. 2.2

14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

SECTION 15: Regulatory information

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

Commission **Regulation (EU) 2020/878** of 18 June 2020 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization 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 as amended.

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 (Text with EEA relevance) as amended.

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives. European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste

15.2 Chemical safety assessment

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

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SECTION 16: Other information

Indication of changes:

Revision 2.1.:

Changing the format of the Safety Data Sheet.

Relevant H- and EUH-phrases (Number and full text):

H281: contains refrigerated gas; may cause cryogenic burns or injury
Press. Gas (Ref. Liq.) gases under pressure: refrigerated liquefied gas

Abbreviations and acronyms:

PBT: Persistent, Bioaccumulative and Toxic substance
vPvB: very Persistent, very Bioaccumulative substance

Trainings:

Before commencing working with the product, the user should learn the Health & Safety regulations, regarding handling chemicals, and in particular, undergo a proper workplace training.

Key literature references and sources of data:

This SDS was prepared on the basis of the CO₂ SDS, literature data, online databases as well as our knowledge and experience, taking into account current legislation.

Additional information:

The information above is based on a current available data concerning the product, but also on the experience and knowledge in this field of the producer. They are neither a quality description of the product nor a guarantee of particular features. They are to be treated as aid to safety in transport, storage and usage of the product. That does not free the user from the responsibility of improper usage of the information above and also of improper compliance with the law norms in the field.

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