

SAFETY DATA SHEET

in accordance with Regulation (EC) 1907/2006 (REACH) amended with
Commission Regulation (EU) 2015/830

▣ **V7** – amendments in this revision ▣

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

1.1 Product identifier

Trade name	CARBON DIOXIDE – BEVERAGE QUALITY E290
EC number:	204-696-9
CAS number:	124-38-9
REACH registration number	This substance is exempted from Registration according to the provisions of Article 2(7)(A) and Annex IV of REACH
NEOCHIM PLC code	17-01▣

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

Relevant identified uses:	At Industrial site and by professional workers. Risk assessment to be performed prior use. Production of carbonated drinks. Production of chemicals. Packaging gas for food. Calibration gas. Plants growth promoter. Fire-extinguishers. Organic compounds solvent. Refrigerant in food industry. Shielding gas in welding. Inert gas.
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Uses advised against: customer

1.3 Details of the supplier of the safety data sheet

Manufacturer: Address: ▣ V7 Tel.: URL website: E-mail:	NEOCHIM PLC East Industrial Zone, Himkombinatska Str. 6403 Dimitrovgrad, Bulgaria +359 391 65 205▣ http:// www.neochim.bg neochim@neochim.bg
e-mail address of competent person responsible for the SDS	reach-neochim@neochim.bg

1.4 Emergency telephone number

▣ V7 National Toxicology Center Hospital for Active Medical Treatment and Emergency Medicine “N.I.Pirogov”	+ 359 2 9154 233	24/24 h	7/7 d ▣
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SECTION 2: HAZARDS IDENTIFICATION

Physical and chemical hazards	Carbon dioxide slowed brain activity. Concentration between 2% and 10% may cause nausea, dizziness, headache, reduced concentration, high blood pressure and accelerated breathing. Concentration above 8% causes nausea and vomiting. Concentration above 10% may cause burns and 20% - paralysis of the respiratory tract. Air humidity forms carbonic acid, which causes eye irritation. All forms of carbon dioxide are non flammable. The gas is heavier than air and may accumulate in low-rise rooms, causing lack of oxygen. Static electricity comes in case of high volume rates and can ignite the available explosive mixtures.
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2.1 Classification of the substance or mixture

Classification of the substance or mixture according to Regulation (EC) 1272/2008 and its amendments at the date of the issue of the document

Gases under pressure: refrigerated liquefied gas (Press. Gas.), H281 - Contains refrigerated gas; may cause cryogenic burns or injury.

2.2 Label elements

Labelling in accordance with Regulation 1272/2008 (CLP) and its amendments at the date of the issue of the document

Hazard pictogram(s):



Signal word

Warning

Hazard statement(s):

H281

Contains refrigerated gas; may cause cryogenic burns or injury.

Precautionary statement(s):

P282
P336
P315
P403
P411

Wear cold insulating gloves, safety goggles or full-face mask.
Thaw frosted parts with lukewarm water. Do not rub affected area.
Get immediate medical advice/attention.
Store indoor in a well ventilated place
Keep at a temperatures not exceeding 50 °C.

2.3 Other hazards

PBT or vPvB criteria.

Endocrine disrupting properties

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

▣ V7 3.1 Substances

CAS №	Name	Content, % (v/v)	SCL, M – factor/ATE
124-38-9	Carbon dioxide	min. 99.95	- ▣

SECTION 4: FIRST- AID MEASURES

4.1 Description of first aid measures

- general notes	Speed is essential. If unconscious, place casualty in a recovery position with head sideways to avoid choking. In all cases of doubt or if symptoms persist, seek medical attention. Always call for help prior to helping the casualty.
- following inhalation:	Immediately remove casualty to fresh air. Low concentrations of carbon dioxide cause rapid breathing and headache. High concentrations cause suffocation. The casualty may not be aware of suffocation. If breathing has stopped, apply artificial resuscitation. If breathing is difficult qualified person to apply oxygen. Seek medical advice immediately.
- following skin contact:	Contact with the vapour-liquid can cause frostbite. If clothes are soaked with the liquid and are stuck to the skin, first warm the affected area with lukewarm water and then remove clothing. DO NOT USE HOT WATER. Seek medical attention immediately.

- following eye contact:	Immediately rinse eyes for at least 15 minutes with plenty of water. Remove contact lenses if safe and easy to do so and continue rinsing. Open eyelids wide to allow for the liquid to evaporate. If the person cannot tolerate light, protect the eyes with a light bandage. Seek medical advice immediately. If medical help is not available immediately continue flushing for 15 minutes.
- following ingestion:	The ingestion is not considered a potential route of exposure.
- self-protection of the first aider	The first aider must observe and apply all collective and personal protective equipment .
4.2 Most important symptoms and effects, both acute and delayed	
Respiratory arrest. Injury / frostbite of the skin due to rapid cooling by evaporation.	
4.3 Indication of any immediate medical attention and special treatment needed	
To implement general supportive measures and treat symptomatically	
SECTION 5: FIRE - FIGHTING MEASURES	
5.1 Extinguishing media	
Suitable extinguishing media:	The product is not flammable and not combustible. Use appropriate extinguishing media for surrounding fire. Cool tanks and bottles with water from a safety distance because exposure to fire tanks may rupture/explode
Unsuitable extinguishing media :	unknown
5.2 Special hazards arising from the substance or mixture	
Incombustible. Stop leaking if safety to do. Move away or cool tanks and bottles with water from safety distance.	
5.3 Advice for firefighters	
Heat resistant personal protective equipment, gloves, boots and self-contained breathing apparatus.	
SECTION 6: ACCIDENTAL RELEASE MEASURES	
6.1 Personal precautions, protective equipment and emergency procedures	
6.1.1 For non-emergency personal	
Protective equipment: Wear suitable personal protective equipment (listed in Section 8 on the safety data sheet)	
Emergency procedures: All activities should be carried out by well-trained staff. Do not allow untrained and unprotected personnel in the area or personnel not involved in the elimination of an incident and its consequences. Eliminate all possible sources of fire and provide adequate ventilation. Stop the leakage if possible. Isolate every leaking bottle. Prevent entry into sewers, basements, and other areas where accumulation may be hazardous. Stay upwind. Act in accordance with emergency plan	
6.1.2 For emergency responders	
Especially resistant to high temperature clothing, gloves, boots, self-contained breathing apparatus.	
6.2 Environmental precautions	
Try to stop leaking without risk. Inform local authority if some environmental compartment have been contaminated.	
6.3 Methods and material for containment and cleaning up	
Provide adequate ventilation.	
6.4 Reference to other sections	
See Section 8 for personal protective equipment and Section 13 for waste disposal and Section 1 for emergency	

telephone number.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

7.1.1 Protective measures

Only experienced and properly instructed persons should handle gases under pressure. Prevent water entering the container. Do not allow back feed in the vessel. Use only properly specified equipment which is suitable for this product, its supply temperature and pressure. Comply with the residual pressure requirement of 0.05 MPa. Protect cylinders from damage. Use a suitable handcart or trucks to move the bottles - no dragging, rolling, skating, and/or knocking the bottles. Never lift cylinders without safety caps. Never put objects inside the cap (eg. wrench, screwdriver, etc.) - this can cause damage to the valve. Open valve slowly to avoid pressure release. As soon as the container is disconnected from equipment place valve outlet caps and container caps. After each use and when container is empty close container valve even it still connected to equipment. Never attempt to transfer gases from one cylinder/container to another. Keep labels. When working provide grip the bottle to a stationary object or trolley.

7.1.2 Advice on general occupational hygiene

Work under a high standard of personal hygiene. Do not eat, drink or smoke in work areas. Wash hands after handling with the product. Remove clothing and protective equipment before visiting the catering.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

Store away from sources of ignition and heat. Heating of bottles increases gas pressure. Store indoor in a well ventilated place at a temperature not exceeding 50°C. Protect cylinders from physical damage. Keep away from direct sunlight. Full and empty containers should be stored separately and should be well secured. Full bottles with supports should be kept upright, securing against falling through suitable devices. In the areas of storage and use, signs should be affixed: "No smoking and no light the fire". Do not transport bottles indoors (eg car trunk) .

▣ **V7 7.3 Specific end use(s):** no information ▣

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Regulated occupational exposure limit values:

EU – 9000 mg/m³ for 8 hours exposure
Directive 2006/15/EC

8.2 Exposure controls

8.2.1 Appropriate engineering controls:

Providing an adequate ventilation is a good industrial practice. Pressure systems should be periodically inspected for leaks.

8.2.2 Individual protection measures, such as personal protective equipment

Depending on the risk and on the work performed, adequate protective equipment should be selected and approved by a specialist Please follow the supplier's instructions about conditions of use and expiration date.

Eye/face protection:

Chemical goggles or full face mask according to EN 166

Skin and body protection:	Working clothes, boots and cold insulating gloves
Respiratory protection:	Gas filter; self-contained breathing apparatus at high concentrations
■ V7 Thermal hazard:	All protective equipment to be suitable for very low temperatures if there is a risk of contact with the liquid. ■
8.2.3 Environmental exposure controls	
Greenhouse gas	
SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES	
9.1 Information on basic physical and chemical properties	
a) Physical state	Liquid that evaporates as a colourless gas
b) Colour	Colourless
c) Odour	Odourless
d) Freezing point	-56.6 °C (5 at.)
e) Boiling point	-78.5 °C (sublimates at atmospheric pressure)
f) Flammability	Non flammable
g) Lower and upper exposure limit	Not applicable
h) Flash-point	Not applicable
i) Auto-ignition temperature	Not applicable
j) Decomposition temperature	1200°C
k) pH	Not applicable
l) Viscosity	Not applicable
m) Solubility	1.45 g/l at 20°C
n) Partition coefficient n-octanol/water:	0.83
o) Vapour pressure:	5720 кPa
p) Density and/or relative density	770 kg/m ³ при 20оС и 0,1МПа –течност 1,977 kg/m ³ при 0оС и 0,1МПа –газ
q) Relative vapour density (air = 1) Relative density, liquid (water = 1)	1.529 при 0оС и 0,1МПа 1.03
r) Particle characteristics	Not applicable
9.2 Other information	
9.2.1 Information with regard to physical hazard classe	
a) Explosives	Not explosive
b) Flammable gases	Not flammable gas
c) Oxidising gases	Not oxidizer
d) Gases under pressure	Gases under pressure: Refrigerated liquefied gas
9.2.2 Other safety characteristics	
a) Critical temperature	31.3 °C
b) Critical preassure	7.29 MPa

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Stable under recommended storage and handling conditions (see section 7, handling and storage).

10.2 Chemical stability

Stable under recommended storage and handling conditions (see section 7, handling and storage).

10.3 Possibility of hazardous reactions

There is no possibility of hazardous reactions to occur

10.4 Conditions to avoid

High temperatures and confined spaces.

10.5 Incompatible materials

Strong bases and alkaline metals. Different metal powder such as: magnesium, zirconium, titanium, aluminium, chrome and manganese are combustible and explosive when they are dispersed and heated in carbon dioxide atmosphere.

10.6 Hazardous decomposition products

Carbon dioxide decomposes into carbon monoxide and oxygen at about 1200 °C

SECTION 11: TOXICOLOGICAL INFORMATION

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

Acute Toxicity	Based on available data, the classification criteria are not met Note: May cause nausea, dizziness, headache, decreased mental alertness, elevated blood pressure and shortness of breath at concentrations between 2 and 10 vol. %. More than 8 vol. % cause nausea and vomiting. More than 10 vol. % may cause burns and about 20 vol.% - paralysis of the respiratory center and death.
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
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

11.2.1 Endocrine disrupting properties - data lacking

▣ **V7** 11.2.2 Other information - data lacking ▣

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

The product is not toxic

1. Lower concentrations affect plants in a positive way and higher concentrations during the day have positive influence

(assist photosynthesis) but during the night they have negative effect like difficult breathing.

2. Impact on earth living organisms is the same as on human. Higher content in the air may lead to suffocation and subsequent death of living organisms.

12.2 Persistence and degradability

No ecological damages causes by this product

12.3 Bioaccumulative potential

The product does not show any bioaccumulation properties.

12.4 Mobility in soil

No ecological damages causes by this product

12.5 Results of PBT and vPvB assessment

Not classified as hazardous

12.6 Endocrine disrupting properties - Data lacking

12.7 Other adverse effects

Release of large amounts may assists the greenhouse effect

▣ **V7** 12.8 Additional information - Data lacking ▣

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods:

Do not discharge large amounts into the atmosphere as well as in places where its accumulation could be dangerous.

Package waste disposal:

Return bottles to the supplier, as comply with the residual pressure of 0.05 MPa.

SECTION 14: TRANSPORT INFORMATION

14.1 UN No. 2187

ADR/RID

Labelling



2.2: Non flammable, non toxic gas (+13 RID)

14.2 UN proper shipping name

ADR/RID: CARBON DIOXIDE, REFRIGERATED LIQUID

14.3 Transport hazard class(es)

ADR/RID

Class: 2
Classification code: 3A
Hazard identification number: 22

14.4 Packing group

ADR/RID - not applicable

14.5 Environmental hazards - none

14.6 Special precautions for users

The person transporting the product must be trained and know how to respond to an accident or spillage

14.7 Maritime transport in bulk

according to IMO instruments not applicable

SECTION 15: REGULATORY INFORMATION

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

EU regulations: Regulation EC 1907/2006 (REACH), Regulation EC 1272/2008 (CLP), Directive 2006/15/EC

* Regulations / legislation and amendments to the date of issue of the document are indicated

15.2 Chemical safety assessment:

Does not required for this product

SECTION 16. OTHER INFORMATION

Indication of changes: Changes of the last version are highlighted with **■ V7...■**. This version replaces all previous versions.

The information above is on the basis of our knowledge about the product and represents the data currently available to us t the moment of safety data sheet issue. This document is intended as guidance for the appropriate precautionary handling with the product by a properly trained person using this product, and does not legally bind in no way manufacturer with guarantee for specific properties, qualities and applications.

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