



# Carbon dioxide

## Safety Data Sheet

In accordance with the Regulation on Safety Data Sheets Regarding Hazardous Substances and Mixtures published in the Official Journal numbered 29204 on December 13, 2014

Date of issue: 28/09/2018 Version: 1.0

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

#### 1.1. Product identifier

Product form : Substance  
Trade name : Carbon dioxide  
EC-No. : 204-696-9  
CAS-No. : 124-38-9  
Product code : EIGA018A  
Formula : CO<sub>2</sub>  
REACH authorisation exemptions : Exempted from REACH registration

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

Relevant identified uses : Test gas/Calibration gas,Purge gas, diluting gas, inerting gas,Purging,Shield gas for welding processes,Use for manufacture of electronic/photovoltaic components,Laboratory use,Food applications,Industrial and professional. Perform risk assessment prior to use,Contact supplier for more information on uses.  
Uses advised against : Consumer use.

#### 1.3. Details of the supplier of the safety data sheet

KOYUNCU TİCARET A.Ş.  
GEBZE 5 (KİMYA) İHTİSAS OSB GEBKİM OSB RECEP YAZICI CAD.NO:4  
DİLOVASI  
KOCAELİ - Türkiye  
T +90 262 658 06 05  
[satis@koyuncutas.com](mailto:satis@koyuncutas.com) - [www.koyuncutas.com](http://www.koyuncutas.com)

#### 1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Turkey	Ulusal Zehir Merkezi (UZEM) Refik Saydam Hifzissihha Merkezi Başkanlığı	Cemal Gürsel Cd. No: 18 Sıhhiye Çankaya 06590 Ankara	114	Information is provided to public and medical personnel on poisoning incidents via 114.

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

Classification according to Classification, Labelling and Packaging of Substances and Mixtures (SEA) Regulation published in the Official Journal numbered 28848 on December 11, 2013.

Gases under pressure : Liquefied gas H280

Full text of H-statements: see section 16

#### 2.2. Label elements

Classification according to Classification, Labelling and Packaging of Substances and Mixtures (SEA) Regulation published in the Official Journal numbered 28848 on December 11, 2013.

Hazard pictograms (SEA) :



GHS04

Signal word (SEA) : Warning  
Hazard statements (SEA) : H280 - Contains gas under pressure; may explode if heated.  
Precautionary statements (SEA) : P410+P403 - Protect from sunlight. Store in a well-ventilated place.  
Child-resistant fastening : Not applicable  
Tactile warning : Not applicable

#### 2.3. Other hazards

##### Other hazards not contributing to the classification

Other hazards not contributing to the classification : Asphyxiant in high concentrations. Contact with liquid may cause cold burns/frostbite. In high concentrations CO<sub>2</sub> causes rapid circulatory insufficiency even at normal levels of oxygen concentration. Symptoms are headache, nausea and vomiting, which may lead to unconsciousness and death.



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### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Name	Product identifier	%	Classification according to Classification, Labelling and Packaging of Substances and Mixtures (SEA) Regulation published in the Official Journal numbered 28848 on December 11, 2013.
Carbon dioxide	(CAS-No.) 124-38-9 (EC-No.) 204-696-9 (REACH-no) *1	100	Press. Gas (Liq.), H280

Full text of H-statements: see section 16

#### 3.2. Mixtures

Not applicable

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures after 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.
- First-aid measures after skin contact : In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.
- First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes.
- First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

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

- Most important symptoms and effects, both acute and delayed : In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Low concentrations of CO<sub>2</sub> 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 : Water spray or fog.
- Unsuitable extinguishing media : Do not use water jet to extinguish.

#### 5.2. Special hazards arising from the substance or mixture

- Reactivity in case of fire : No reactivity hazard other than the effects described in sub-sections below.
- Hazardous combustion products : None.

#### 5.3. Advice for firefighters

- Specific methods : Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems. If possible, stop flow of product. Use water spray or fog to knock down fire fumes if possible. Move containers away from the fire area if this can be done without risk.
- 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. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Try to stop release. Evacuate area. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation. Oxygen detectors should be used when asphyxiating gases may be released. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Act in accordance with local emergency plan. Stay upwind.

##### 6.1.1. For non-emergency personnel

No additional information available



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### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Try to stop release.

### 6.3. Methods and material for containment and cleaning up

Methods and material for containment and cleaning up : Keep area evacuated and free from ignition sources until any spilled liquid has evaporated (ground free from frost).

### 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 : Containers, which contain or have contained flammable or explosive substances, must not be inerted with liquid carbon dioxide. Potential production of solid CO<sub>2</sub> particles must be ruled out. In order to rule out potential electrostatic discharge production, the system must be adequately grounded. The product must be handled in accordance with good industrial hygiene and safety procedures. Only experienced and properly instructed persons should handle gases under pressure. Consider pressure relief device(s) in gas installations. Ensure the complete gas system was (or is regularly) checked for leaks before use. Do not smoke while handling product. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Avoid suck back of water, acid and alkalis. Do not breathe gas. Avoid release of product into work area.

Safe handling of the gas receptacle : Refer to supplier's container handling instructions. Do not allow backfeed into the container. Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Keep container valve outlets clean and free from contaminants particularly oil and water. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to transfer gases from one cylinder/container to another. Never use direct flame or electrical heating devices to raise the pressure of a container. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. Suck back of water into the container must be prevented. Open valve slowly to avoid pressure shock.

### 7.2. Conditions for safe storage, including any incompatibilities

Conditions for safe storage, including any incompatibilities : Observe all regulations and local requirements regarding storage of containers. Containers should not be stored in conditions likely to encourage corrosion. Container valve guards or caps should be in place. Containers should be stored in the vertical position and properly secured to prevent them from falling over. Stored containers should be periodically checked for general condition and leakage. Keep container below 50°C in a well ventilated place. 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 (124-38-9)	
Turkey - Occupational Exposure Limits	
Local name	Karbondioksit
OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
OEL TWA (ppm)	5000 ppm
Regulatory reference	12 Ağustos 2013 Tarihli ve 28733 Sayılı Resmî Gazete
EU - Occupational Exposure Limits	
Local name	Carbon dioxide
IOELV TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
IOELV TWA (ppm)	5000 ppm
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC
Carbon dioxide (124-38-9)	
DNEL/DMEL (additional information)	



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### Carbon dioxide (124-38-9)

Additional information : None available.

### PNEC (additional information)

Additional information : None available.

## 8.2. Exposure controls

Appropriate engineering controls	: Provide adequate general and local exhaust ventilation. Oxygen detectors should be used when asphyxiating gases may be released. CO2 detectors should be used when CO2 may be released. Systems under pressure should be regularly checked for leakages. Ensure exposure is below occupational exposure limits (where available). Consider the use of a work permit system e.g. for maintenance activities.
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.
Hand protection	: Wear cold insulating gloves when transfilling or breaking transfer connections. Standard EN 511 - Cold insulating gloves. Wear working gloves when handling gas containers. Standard EN 388 - Protective gloves against mechanical risk.
Eye protection	: Wear goggles when transfilling or breaking transfer connections. Standard EN 166 - Personal eye-protection - specifications
Respiratory protection	: Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask. Gas filters may be used if all surrounding conditions e.g. type and concentration of the contaminant(s) and duration of use are known. Use gas filters with full face mask, where exposure limits may be exceeded for a short-term period, e.g. connecting or disconnecting containers. Gas filters do not protect against oxygen deficiency. Standard EN 14387 - Gas filter(s), combined filter(s) and standard EN136, full face masks .
Thermal hazard protection	: None in addition to the above sections.
Environmental exposure controls	: None necessary.
Other information	: Wear safety shoes while handling containers. Standard EN ISO 20345 - Personal protective equipment - Safety footwear.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Gas
Molecular mass	: 44 g/mol
Colour	: Colourless.
Odour	: No odour warning properties.
Odour threshold	: Odour threshold is subjective and inadequate to warn of overexposure.
pH	: Not applicable for gases and gas mixtures.
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable for gases and gas mixtures.
Melting point	: -78.5 °C At atmospheric pressure dry ice sublimates into gaseous carbon dioxide.
Freezing point	: No data available
Boiling point	: -56.6 °C
Flash point	: Not applicable for gases and gas mixtures.
Critical temperature	: 30 °C
Auto-ignition temperature	: Non flammable.
Decomposition temperature	: Not applicable.
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: 57.3 bar(a)
Vapour pressure at 50 °C	: Not applicable.
Critical pressure	: 7375 kPa
Relative vapour density at 20 °C	: Not applicable.
Relative density	: 0.82
Relative gas density	: 1.52
Solubility	: Water: 2000 mg/l Completely soluble.



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Log Pow	: 0.83
Log Kow	: Not applicable for gas mixtures.
Viscosity, kinematic	: No reliable data available.
Viscosity, dynamic	: No reliable data available.
Explosive properties	: Not applicable.
Oxidising properties	: Not applicable.
Explosive limits	: Non flammable.

### 9.2. Other information

Gas group	: Press. Gas (Liq.)
Additional information	: 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

Avoid moisture in installation systems.

### 10.5. Incompatible materials

None. For additional information on compatibility refer to ISO 11114.

### 10.6. Hazardous decomposition products

None.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified pH: Not applicable for gases and gas mixtures.
Serious eye damage/irritation	: Not classified pH: Not applicable for gases and gas mixtures.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general	: No ecological damage caused by this product.
Acute aquatic toxicity	: Not classified
Chronic aquatic toxicity	: Not classified

### 12.2. Persistence and degradability

Carbon dioxide (124-38-9)	
Persistence and degradability	No ecological damage caused by this product.



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### 12.3. Bioaccumulative potential

Carbon dioxide (124-38-9)	
Log Pow	0.83
Log Kow	Not applicable for gas mixtures.
Bioaccumulative potential	No ecological damage caused by this product.

### 12.4. Mobility in soil

Carbon dioxide (124-38-9)	
Mobility in soil	No additional information available
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution. Partition into soil is unlikely.

### 12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment : No data available, Not classified as PBT or vPvB.

### 12.6. Other adverse effects

Ozone : Not classified  
 Other adverse effects : No known effects from this product.  
 Effect on the ozone layer : None.  
 Effect on global warming : Contains greenhouse gas(es). When discharged in large quantities may contribute to the greenhouse effect.  
 GWP 100 years : 1

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods




Waste treatment methods : May be vented to atmosphere in a well ventilated place. Do not discharge into any place where its accumulation could be dangerous. Discharge to atmosphere in large quantities should be avoided. Return unused product in original cylinder to supplier.

Additional information : External treatment and disposal of waste should comply with applicable local and/or national regulations.

List of hazardous waste codes (from Commission Decision 2000/532/EC as amended) : 16 05 05 : Gases in pressure containers other than those mentioned in 16 05 04.

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number</b>				
1013	1013	1013	Not applicable	Not applicable
<b>14.2. UN proper shipping name</b>				
CARBON DIOXIDE	CARBON DIOXIDE	Carbon dioxide	Not applicable	Not applicable
<b>Transport document description</b>				
UN 1013 CARBON DIOXIDE, 2.2, (C/E)	UN 1013 CARBON DIOXIDE, 2.2	UN 1013 Carbon dioxide, 2.2	Not applicable	Not applicable
<b>14.3. Transport hazard class(es)</b>				
2.2	2.2	2.2	Not applicable	Not applicable
			Not applicable	Not applicable
<b>14.4. Packing group</b>				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
<b>14.5. Environmental hazards</b>				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				



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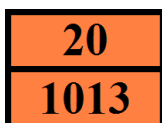
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### 14.6. Special precautions for user

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, Before transporting product containers:  
- Ensure there is adequate ventilation, - Ensure that containers are firmly secured, - Ensure cylinder valve is closed and not leaking, - Ensure valve outlet cap nut or plug (where provided) is correctly fitted, - Ensure valve protection device (where provided) is correctly fitted.

#### - Overland transport

Classification code (ADR) : 2A  
Special provisions (ADR) : 584, 653, 662  
Limited quantities (ADR) : 120ml  
Excepted quantities (ADR) : E1  
Packing instructions (ADR) : P200  
Mixed packing provisions (ADR) : MP9  
Portable tank and bulk container instructions (ADR) : (M)  
Tank code (ADR) : PxBN(M)  
Tank special provisions (ADR) : TA4, TT9  
Vehicle for tank carriage : AT  
Transport category (ADR) : 3  
Special provisions for carriage - Loading, unloading and handling (ADR) : CV9, CV10, CV36  
Hazard identification number (Kemler No.) : 20  
Orange plates :



Tunnel restriction code (ADR) : C/E

#### - Transport by sea

Limited quantities (IMDG) : 120 ml  
Excepted quantities (IMDG) : E1  
Packing instructions (IMDG) : P200  
EmS-No. (Fire) : F-C  
EmS-No. (Spillage) : S-V  
Stowage category (IMDG) : A  
Properties and observations (IMDG) : Liquefied, non-flammable gas.Heavier than air (1.5). Cannot remain in the liquid state above 31°C.  
MFAG-No : 120

#### - Air transport

PCA Excepted quantities (IATA) : E1  
PCA Limited quantities (IATA) : Forbidden  
PCA limited quantity max net quantity (IATA) : Forbidden  
PCA packing instructions (IATA) : 200  
PCA max net quantity (IATA) : 75kg  
CAO packing instructions (IATA) : 200  
CAO max net quantity (IATA) : 150kg  
ERG code (IATA) : 2L

#### - Inland waterway transport

No data available

#### - Rail transport

No data available

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

Not applicable



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### SECTION 15: Regulatory information

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

##### 15.1.1. National regulations

This product doesn't contain any substances that is controlled or prohibited for use according to the Regulation for Reduction of Ozone Depleting Substances published in the Official Journal numbered 27052 on November 12, 2008.

Restrictions on use : None.

### 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
	STOT - RE : Specific Target Organ Toxicity - Repeated Exposure

Training advice : The hazard of asphyxiation is often overlooked and must be stressed during operator training.

Full text of H-statements

Press. Gas (Liq.)	Gases under pressure : Liquefied gas
H280	Contains gas under pressure; may explode if heated.

Safety Data Sheet author's

Name : Ezgi Üstün  
Certificate number : NBC 01.77.03  
Certificate valid until : 28/03/2019  
Contact information : eustun@koyuncutas.com

SDS Turkey

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*