

Material Safety Data Sheet – Carbon Dioxide

1. IDENTIFICATION OF THE SUBSTANCE/ PREPARATION AND OF THE COMPANY

MSDS NR : 018 A
 PRODUCT NAME : Carbon Dioxide
 CHEMICAL FORMULA : CO₂
 COMPANY IDENTIFICATION : See heading and/or footer
 EMERGENCY PHONE NUMBER : 603-20 78 9200

2. COMPOSITION / INFORMATION ON INGREDIENTS

SUBSTANCE / PREPARATION : Substance
 COMPONENTS / IMPURITIES : Contains on other components or impurities which will influence the classification of the product

CAS NR : 0124-38-9
 EEC NR. (FROM EINECS) : 2046969

3. PHYSICAL AND CHEMICAL PROPERTIES

MOLECULAR WEIGHT : 44
 MELTING POINT : 56.6 °C
 BOILING POINT : 78.5 (s) °C
 CRITICAL TEMPERATURE : 30 °C
 RELATIVE DENSITY, GAS : 1.52 (air = 1)
 RELATIVE DENSITY, LIQUID : 0.82 (water =1)
 VAPOUR PRESSURE 20 °C : 57.3 bar
 SOLUBILITY MG/L WATER : 2000 mg/l
 APPEARANCE / COLOR : Colorless gas
 ODOUR : No odour warning properties
 OTHER DATA : Gas / vapour heavier than air. May accumulate in confined spaces, particularly at or below growing level.

4. FIRST AID MEASURES

INHALATION

In high concentrations may cause asphyxiation. Symptoms may included loss of mobility / consciousness. Victim may not be aware of asphyxiation. Low concentrations of CO₂ cause increased respiration and headache. Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

SKIN / EYE CONTACT

Immediately flush eyes thoroughly with water at least 15 minutes. In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.

INGESTION

Ingestion is not considered a potential route of exposure.

5. FIRE FIGHTING MEASURE

SPECIFIC HAZARDS : Exposure to fire may cause containers to rupture / explode.
 Non flammable.

HAZARDOUS COMBUSTION : None

PRODUCTS

SUITABLE EXTINGUISHING : All know extinguishants can be used

MEDIA

SPECIFIC METHODS : If possible, stop flow of product. Move container away or cool with water from a protected position.

SPECIAL PROTECTIVE : In confined space use self-contained breathing apparatus

EQUIPMENT FOR FIRE FIGHTERS

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS : Evacuate area. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation.

ENVIRONMENTAL PRECAUTIONS : Try to stop release. Prevent from sewers, basements and workpits, or any place where its accumulation can be dangerous.

CLEAN UP METHODS : Ventilate area.

7. HANDLING AND STORAGE

Suck back of water into the container must be prevented. Do not allow backfeed into the container.

Use only properly specified equipment, which is suitable for this product, its supply pressure and temperature.

Material Safety Data Sheet – Carbon Dioxide

Contact your gas supplier if in doubt. Segregate from oxidant gases and other oxidants in store. Keep container below 50 °C in a well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUE - : 5000 ppm
 TLV (ACGIH)
 PERSONAL PROTECTION : Ensure adequate ventilation.

9. HAZARDS IDENTIFICATION

HAZARDS IDENTIFICATION : Liquefied gas. In high concentration may cause asphyxiation.

10. STABILITY AND REACTIVITY

STABILITY AND REACTIVITY : Stable under normal conditions.

11. TOXICOLOGICAL INFORMATION

GENERAL : No know toxicological effects from this product

12. ECOLOGICAL INFORMATION

GENERAL : No know ecological damages caused by this product

13. DISPOSAL CONSIDERATIONS

GENERAL : Do not discharge into any place where accumulation could be dangerous. To atmosphere in a well ventilated place. Contact supplier if guidance is required.

14. TRANSPORT INFORMATION

UN NR. : 1006
 CLASS / DIV. : 2.2
 ADR / RID ITEM NR. : 2, 1a
 GROUPECARD NR. : 20g01
 LABELING ADR : Label 2: non flammable non-toxic gas.
 OTHER TRANSPORT INFORMATION :

Avoid transport on vehicles where load space is not separated from the driver's compartment ensures vehicles 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 that they are firmly secured and:

- cylinder valve is closed and not leaking
- valve outlet cap nut or plug (where provided) is correctly fitted
- valve protection device (where provided) is correctly fitted
- adequate ventilation
- compliance with applicable regulations

15. REGULATORY INFORMATION

NUMBER IN ANNEX 1 OF DIR 67 / 548 : Not included in Annex 1
 EC CLASSIFICATION : Proposed by the industry. Not classified as a dangerous substance
 LABELING OF CYLINDERS : SYMBOLS
 Road transport symbols are used and selected according to the most stringent product classification -EC or ADR.
 Label 2 : Non flammable non toxic gas.
 RISK PHRASES : RAs Asphyxiate in high concentrations
 SAFETY PHRASES : S9/16/33A Keep container in well ventilated place, away from ignition sources, including static discharge.

16. OTHER INFORMATION

Ensure all national / local regulations are observed. Ensure operators understand the flammability hazard. The hazard of asphyxiation is often overlooked and must be stressed during operator training. 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.