



Material Safety Data Sheet

FM.PRO-35

1. Chemical Product and Company Identification

PRODUCT NAME : **CARBON DIOXIDE**
TRADE NAME/SYNONYMS : Carbonic Anhydride, Carbonic Acid Gas

COMPANY IDENTIFICATION :

PT. BSG GASES

Jl. Cempaka, Desa Jatimulya

Tambun, Bekasi - Indonesia

EMERGENCY PHONE : **+62 21 8812507 – 08**

2. Composition, Information on Ingredients

COMPONENT : **CARBON DIOXIDE**

FORMULA : **CO₂**

PERCENTAGE : **99+%**

3. Hazards Identification

EMERGENCY OVERVIEW : High pressure liquid and gas. Can cause rapid suffocation. Can increase respiration and heart rate. May cause frostbite.

POTENTIAL HEALTH EFFECTS:

ROUTES OF ENTRY: **Inhalation**

ACUTE EFFECTS: Exposure to carbon dioxide at 1-4% concentrations results in increased respiratory volume. Material acts as a simple asphyxiant by displacing air necessary for life. Symptoms include rapid respiration, muscular incoordination, fatigue, nausea and vomiting and unconsciousness. Liquid may cause frostbite. Pressure drop through valves and piping may cause extreme cold and frostbite on contact.

CHRONIC EFFECTS: **None known**

4. First Aid Measures

INHALATION: **Immediately remove victim to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.**

EYE CONTACT: **None**

SKIN CONTACT: **None.**

INGESTION: **None**

5. Fire Fighting Measures

FLASH POINT: **Nonflammable**

AUTOIGNITION TEMPERATURE: **N/Ap**

FLAMMABLE LIMITS: **Nonflammable**

EXTINGUISHING MEDIA: **Use what is appropriate for surrounding fire**

SPECIAL FIRE FIGHTING INSTRUCTION AND EQUIPMENT: **Wear self-contained breathing apparatus and full protective clothing. Keep fire exposed cylinders cool with water spray.**

HAZARDOUS COMBUSTION PRODUCTS: **Toxic carbon monoxide may be given off during combustion.**

UNUSUAL FIRE AND EXPLOSION HAZARDS: **Cylinder rupture may occur under fire conditions. Carbon dioxide decomposes when heated above 1700 degrees celsius.**

6. Accidental Release Measures

CLEAN UP PROCEDURES: **Shut off source if possible and remove source of heat. Remove leaking cylinder to exhaust hood or safe outdoor area if this can be done safely.**

SPECIALIZED EQUIPMENT: **None**

7. Handling And Storage

PRECAUTIONS TO BE TAKEN IN HANDLING: **Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders.**

PRECAUTIONS TO BE TAKEN IN STORAGE: **Store in well ventilated areas away from combustibles. Keep valve protection cap on cylinders when not in use.**

8. Exposure Controls, Personal Protection

ENGINEERING CONTROLS: **Provide adequate general and local exhaust ventilation to maintain concentration below exposure limits..**

EYE / FACE PROTECTION: **Safety glasses. A face shield is also recommended when handling cold liquid, solid or vapor.**

SKIN PROTECTION: **Loose fitting gloves of impermeable material, such as leather, when working with cold liquid, solid or vapor**

RESPIRATORY PROTECTION: **Use a self-contained breathing apparatus in case of emergency or non-routine use.**

OTHER PROTECTIVE EQUIPMENT: **Safety shoes when handling cylinders.**

9. Physical And Chemical Properties

APPEARANCE: **Colorless**

ODOR: **Odorless**

PHYSICAL PRESSURE: **Gas**

VAPOR PRESSURE: **@20 deg.C: 816 psig**

VAPOR DENSITY (AIR=1): **1.53**

BOILING POINT (C): **Sublimes -78.4**

SOLUBILITY IN WATER: **v/v @68 deg.F: 87.8**

SPECIFIC GRAVITY (H₂O=1): **1.56**

EVAPORATION RATE: **N/Av**

ODOR THRESHOLD: **N/Av**

10. Stability and Reactivity

STABILITY: **Stable under normal storage conditions.**

CONDITIONS TO AVOID: **Storage in poorly ventilated areas. Storage near a heat source.**

MATERIALS TO AVOID: **This weakly acidic material will react with alkaline materials to form carbonates and bicarbonates.**

HAZARDOUS POLYMERIZATION: **Will not occur.**

HAZARDOUS DECOMPOSITION: **Toxic carbon monoxide when heated above 1700 deg.C.**

11. Toxicological Information

Not available

12. Ecological Information

Not available

13. Disposal Considerations

WASTE DISPOSAL METHOD: **Dispose of non-refillable cylinders in accordance with federal, state and local regulations. Allow gas to vent slowly to atmosphere in an unconfined area or exhaust hood. If the cylinders are the refillable type, return cylinders to supplier with any valve outlet plugs or caps secured and valve protection caps in place.**

14. Transport Information

PROPER SHIPPING NAME: **Carbon Dioxide**

HAZARD CLASS: **2.2(nonflammable)**

IDENTIFICATION NUMBER: **UN1013**

LABELING: **NONFLAMMABLE GAS**



SPECIAL PRECAUTIONS: **Cylinders should be transported in a secure upright position in a well ventilated truck.**

15. Other Information

OTHER PRECAUTIONS: **Protect containers from physical damage. Do not deface cylinders or labels. Cylinders should be refilled by PT. BSG GASES qualified producers of compressed gas.**