

Scott Specialty Gases

M-C3000/E-1

SCOTT\_SPECIALTY\_GASES

MATERIAL SAFETY DATA SHEETS

DATE: 6/04/03

SUPPLIER ADDRESS: 1290 COMBERMERE STREET

TROY, MI 48083

EMERGENCY PHONE: (248) 589-2950  
NUMBER

1. CHEMICAL PRODUCT

PRODUCT NAME: CARBON DIOXIDE AND OXYGEN IN NITROGEN  
SYNONYMS: None

2. COMPOSITION, INFORMATION ON INGREDIENTS

Ingredient Name	Formula	CAS#	Concentration	Exposure Limits (PPM)			
				ACGIH TLV	OSHA PEL	MAC	Other STEL
CARBON DIOXIDE	CO2	124-38-9	.5001-20 PCT	5000	5000	5000	30000
OXYGEN	O2	7782-44-7	19.5-23.49 PCT	NE	NE	NE	NE
NITROGEN	N2	7727-37-9	BALANCE	S/A	S/A	S/A	S/A

Note: NE = NONE ESTABLISHED  
S/A = SIMPLE ASPHYXIAN

3. HAZARD IDENTIFICATION

\*\*\* EMERGENCY OVERVIEW \*\*\*

High pressure gas.  
May accelerate combustion.  
Can increase respiration and heartbeat.

POTENTIAL HEALTH EFFECTS

ROUTES OF ENTRY: Inhalation

ACUTE EFFECTS: Exposure to carbon dioxide at 1-4% concentrations result in increased respiratory volume. Concentrations greater than 4% produce labored breathing and is dangerous for even a few minutes. Symptoms include rapid respiration, muscular incoordination, fatigue, dizziness, nausea, vomiting, unconsciousness, and death.

CHRONIC EFFECTS: None known

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None known

OTHER EFFECTS OF OVEREXPOSURE: None

CARCINOGENICITY (US Only):

- NTP - No
- IARC MONOGRAPHS - No
- OSHA REGULATED - No

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4. FIRST AID MEASURES

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

EYE CONTACT: None

SKIN CONTACT: None

INGESTION: None

IN EVENT OF EXPOSURE, CONSULT A PHYSICIAN

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. Keep valve protection cap on cylinders when not in use.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide adequate

NOTE TO PHYSICIAN: None

5. FIRE FIGHTING MEASURES

FLASH POINT: Nonflammable

AUTOIGNITION TEMPERATURE: N/Ap

FLAMMABLE LIMITS: Nonflammable

LOWER:

UPPER:

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. If possible, stop the product flow.

HAZARDOUS COMBUSTION PRODUCTS: None

UNUSUAL FIRE AND EXPLOSION HAZARDS: Escaping gas mixture containing 19-24% oxygen (air) vigorously supports and may accelerate combustion of surrounding materials. Cylinder rupture may occur under fire conditions.

6. ACCIDENTAL RELEASE MEASURES

CLEAN UP PROCEDURES: Evacuate and ventilate area. Remove leaking cylinder to exhaust hood or safe outdoor area. Shut off source if possible and remove source of heat.

SPECIALIZED EQUIPMENT: None

Li, Nd, and Ti at high temperatures. Flammable and combustible materials, especially greases and oils. Carbon dioxide, being weakly acidic, reacts 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

LETHAL CONCENTRATION (LC50): NONE ESTABLISHED

LETHAL DOSE 50 (LD50): N/Ap

TERATOGENICITY: N/Ap

REPRODUCTIVE EFFECTS: N/Ap

MUTAGENICITY: N/Ap

12. ECOLOGICAL INFORMATION

No adverse ecological effects are expected.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of non-refillable cylinders in accordance with federal, state and local

general and local exhaust ventilation to avoid asphyxiation.

PERSONAL PROTECTION

EYE/FACE PROTECTION: Safety glasses

SKIN PROTECTION: None

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 STATE: Gas

VAPOR PRESSURE: N/Ap

VAPOR DENSITY (AIR=1): 1.11

BOILING POINT (C): Gas

SOLUBILITY IN WATER: cm<sup>3</sup>/100cm<sup>3</sup> H<sub>2</sub>O  
1.485

SPECIFIC GRAVITY (H<sub>2</sub>O=1): Gas

EVAPORATION RATE: Gas

ODOR THRESHOLD: N/Ap

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: Nitrogen reacts with  
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15. REGULATORY INFORMATION

OSHA: Process Safety Management:  
Materials are not listed in appendix A of 29 CFR 1910.119 as highly hazardous chemicals.

TSCA: Materials are listed in TSCA inventory.

SARA: The threshold planning quantity for this mixture is 10,000 lbs.

EU NUMBER: N/Av

NUMBER IN ANNEX 1 OF DIR 67/548: Mixture is not listed in annex 1.

EU CLASSIFICATION: N/Av

R: N/Av

S: 9, 23

16. OTHER INFORMATION

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

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.

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14. TRANSPORT INFORMATION

CONCENTRATION: .5001-23.49%  
DOT DESCRIPTION (US ONLY):  
PROPER SHIPPING NAME: Compressed gases,  
n.o.s.  
HAZARD CLASS: 2.2 (nonflammable)  
IDENTIFICATION NUMBER: UN1956  
REPORTABLE QUANTITIES: None  
LABELING: NONFLAMMABLE GAS

ADR/RID (EU Only): Class 2, 1a

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

gas cylinder which has not been filled by the owner or with his written consent is a violation of federal law (49 CFR).

ABBREVIATIONS:  
N/Ap - Not Applicable  
N/Av - Not Available  
SA - Simple Asphyxiant  
NE - None Established

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