

Manufactured for

INDUSTRIAL SCIENTIFIC

CORPORATION

COMPRESSED GAS

1001 Oakdale Road
Oakdale, PA 15071-1500

Phone (412) 788-4353
TOLL-FREE 800-DETECTS
Fax (412) 788-8353

MATERIAL SAFETY DATA SHEET

(These data are prepared for product supplied in DOT 39 nonreusable cylinders.)

PRODUCT NAME: Less than 250 PPM Hydrogen Sulfide; less than 500 PPM Carbon Monoxide; less than .75% Pentane and 18-21% Oxygen in Nitrogen

1810-2187

	TELEPHONE (415) 977-6500 EMERGENCY RESPONSE INFORMATION ON PAGE 2	
AIR LIQUIDE AMERICA CORPORATION California Plaza, Suite 350 2121 N. California Blvd. Walnut Creek, California 94596	TRADE NAME AND SYNONYMS See Page 4	CAS NUMBER See Page 4
	CHEMICAL NAME AND SYNONYMS See Page 4	NFPA 704 NUMBER (HFR) 0 0 0
ISSUE DATE August 10, 1994 AND REVISIONS CORPORATE SAFETY DEPT.	FORMULA See Page 4 MOLECULAR WEIGHT 28.72 - 29.18	CHEMICAL FAMILY Gas Mixture

HEALTH HAZARD DATA

TIME WEIGHTED AVERAGE EXPOSURE LIMIT (ACGIH 1993-1994)

Hydrogen Sulfide TWA = 10 molar ppm; STEL = 15 molar ppm.

(Continued on Page 4)

SYMPTOMS OF EXPOSURE

The odor of hydrogen sulfide in these mixtures should preclude them from being breathed. If they are released and mixed with atmospheric air they should not present any major symptoms other than headache, possible nausea and dizziness.

TOXICOLOGICAL PROPERTIES

See Symptoms of Exposure, above.

Persons in ill health where such illness would be aggravated by exposure to these mixtures should not be allowed to work with or handle these products.

DO NOT USE THIS PRODUCT AS COMPRESSED AIR, BREATHING QUALITY.

Listed as Carcinogen
or Potential Carcinogen

National Toxicology Yes
Program No

I.A.R.C. Yes
Monographs No

OSHA Yes
No

RECOMMENDED FIRST AID TREATMENT

If large quantities of this mixture have been breathed, move the person who has breathed them to an area where they can inhale "fresh" air. The administration of oxygen should also be helpful. Further treatment should be symptomatic and supportive.

Judgments as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility. Therefore, although reasonable care has been taken in the preparation of such information, Air Liquide America Corporation extends no warranties, makes no representations, and assumes no responsibility as to the accuracy or suitability of such information for application to purchaser's intended purposes or consequences of its use. Since Air Liquide America Corporation has no control over the use of this product, it assumes no liability for damage or loss of product resulting from proper (or improper) use or application of the product. Data Sheets may be changed from time to time. Be sure to consult the latest edition.

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SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)			
Positive pressure air line with mask or self-contained breathing apparatus should be available for emergency use.			
VENTILATION Hood with forced ventilation	LOCAL EXHAUST To prevent accumulation above the TWA for hydrogen sulfide	SPECIAL	N/A
	MECHANICAL (Gen.)	OTHER	N/A
PROTECTIVE GLOVES Any material			
EYE PROTECTION Safety goggles or glasses			
OTHER PROTECTIVE EQUIPMENT Safety shoes			

SPECIAL PRECAUTIONS*

SPECIAL LABELING INFORMATION	
DOT Shipping Name: Compressed Gas, n.o.s.	DOT Hazard Class: Division 2.2
DOT Shipping Label: Nonflammable Gas	I.D. No.: UN 1956
SPECIAL HANDLING RECOMMENDATIONS	
<p>Use a pressure reducing regulator when connecting cylinder to lower pressure (<500 psig) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Close valve after each use and when empty.</p> <p>For additional handling recommendations consult L'Air Liquide's Encyclopedia de Gaz or Compressed Gas Association Pamphlet P-1.</p>	
SPECIAL STORAGE RECOMMENDATIONS	
<p>Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125°F (52°C). Full and empty cylinders should be segregated. Use a "first in - first out" inventory system to prevent full cylinders being stored for excessive periods of time.</p> <p>For additional handling recommendations consult L'Air Liquide's Encyclopedia de Gaz or Compressed Gas Association Pamphlet P-1.</p>	
SPECIAL PACKAGING RECOMMENDATIONS	
<p>These mixtures are noncorrosive and may be used with all materials of construction. Moisture causes metal oxides which are formed with air to be hydrated so that they increase in volume and lose their protective role (rust formation). Concentrations of SO₂, Cl₂, salt, etc. in the moisture enhances the rusting of metals in air.</p>	
OTHER RECOMMENDATIONS OR PRECAUTIONS	
<p>DOT 39 cylinders may not be reused or refilled (49CFR).</p> <p>NEVER transport these cylinders in trunks of vehicles, enclosed vans, truck cabs or in passenger compartments. Transport them "contained" in open flatbed or open pick-up type vehicles.</p> <p>Reporting under SARA, Title III, Section 313 not required.</p>	

*Various Government agencies (i.e., Department of Transportation, Occupational Safety and Health Administration, Food and Drug Administration and others) may have specific regulations concerning the transportation, handling, storage or use of this product which may not be contained herein. The customer or user of this product should be familiar with these regulations.

Less than 250 PPM Hydrogen Sulfide; less than 500 PPM Carbon Monoxide;
less than .75% Pentane and 18-21% Oxygen in Nitrogen

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES

None

PHYSICAL DATA

BOILING POINT See Page 4	LIQUID DENSITY AT BOILING POINT See Page 4
VAPOR PRESSURE See Page 4	GAS DENSITY AT 70°F 1 atm .074 - .078 lb/ft ³ (1.19 - 1.25 kg/m ³)
SOLUBILITY IN WATER H ₂ S = soluble; other components negligible	FREEZING POINT Varies; Air Bubble Point @ 1 atm = -317.8°F (-194.35°C)
APPEARANCE AND ODOR Colorless gas with slight sulfur (rotten egg) odor. . Specific gravity (Air=1) @ 70°F (21.1°C) = 0.99 - 1.04	

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED) N/A (Gas)	AUTO IGNITION TEMPERATURE N/A	FLAMMABLE LIMITS % BY VOLUME N/A
EXTINGUISHING MEDIA Nonflammable gas mixture		ELECTRICAL CLASSIFICATION Nonhazardous
SPECIAL FIRE FIGHTING PROCEDURES If cylinders are involved in a fire, safely relocate or keep cool with water spray.		
UNUSUAL FIRE AND EXPLOSION HAZARDS These mixtures at high pressure will accelerate the burning of materials to a greater rate than they burn at atmospheric pressure.		

REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID
Unstable		
Stable	X	None
INCOMPATIBILITY (Material to avoid) None		
HAZARDOUS DECOMPOSITION PRODUCTS None		
HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID
May Occur		
Will Not Occur	X	None

SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED.

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in container or container valve, contact the closest Air Liquide America Corporation location.

WASTE DISPOSAL METHOD

Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to Air Liquide America For emergency disposal, contact the closest Air Liquide America Corporation location. For emergency disposal, contact the closest Air Liquide America Corporation location.

EMERGENCY RESPONSE INFORMATION

IN CASE OF EMERGENCY INVOLVING THIS MATERIAL, CALL DAY OR NIGHT (800) 231-1366
OR CALL CHEMTREC AT (800) 424-9300

Less than 250 PPM Hydrogen Sulfide; less than 500 PPM Carbon Monoxide;
less than .75% Pentane and 18-21% Oxygen in Nitrogen

ADDITIONAL DATA

TRADE NAME AND SYNONYMS: Less than 250 PPM Hydrogen Sulfide; Less than 500 PPM Carbon Monoxide;
Less than .75% Pentane and 18-21% Oxygen in Nitrogen.

CHEMICAL NAME AND SYNONYMS: Less than 250 Molar PPM Hydrogen Sulfide; Less than 500 Molar PPM Carbon
Monoxide; Less than .75 Molar % Pentane and 18-21 Molar % Oxygen in Nitrogen.

FORMULA: < 250 Molar PPM H₂S; < 500 Molar PPM CO; < .75 Molar % C₅H₁₂ and 18-21 Molar % O₂ in N₂

CAS NUMBERS:

H ₂ S	=	7783-06-4
CO	=	630-08-0
C ₅ H ₁₂	=	109-66-0
O ₂	=	7782-44-7
N ₂	=	7727-37-9

HEALTH HAZARD DATA

TIME WEIGHTED AVERAGE EXPOSURE LIMIT: (Continued)

Carbon Monoxide TWA = 25 Molar PPM
Pentane TWA = 600 Molar PPM; STEL = 750 PPM
Oxygen = No Listing
Nitrogen = Simple asphyxiant

OSHA Data (1991):

Hydrogen Sulfide TWA = 10 Molar PPM; STEL = 15 Molar PPM
Carbon Monoxide TWA = 35 Molar PPM; Ceiling = 200 Molar PPM
Pentane TWA = 600 Molar PPM; STEL = 750 Molar PPM
Oxygen = No Listing
Nitrogen = No Listing

PHYSICAL DATA

BOILING POINT:

H ₂ S	=	-76° F	(-60° C)
CO	=	-312.75° F	(-191.53° C)
C ₅ H ₁₂	=	9° F	(36° C)
O ₂	=	-297.3° F	(-182.9° C)
N ₂	=	-320.5° F	(-195.8° C)

LIQUID DENSITY AT BOILING POINT: Varies; should be close to air
[54.6 lb/ft³ (874 kg/m³)]

VAPOR PRESSURE: @ 70° F (21.1° C)

H ₂ S	=	267 psia (1840 kPa)
C ₅ H ₁₂	=	@ 100° F (37.8° C) 15 psia (103 kPa)
Other Components	=	above their critical temperatures.

SANDERSON

THE SAFETY COMPANY

RECEIVED

SEP 01 1995

Renton Stores

SANDERSON SAFETY SUPPLY CO.
1101 S.E. THIRD AVE.
PORTLAND, OREGON 97214
PHONE (503) 238-5700

SANDERSON SAFETY SUPPLY CO.
1101 S.E. 3rd Avenue, Portland, OR 97214 (503) 238-5700

SHIP/TRANSFER NUMBER

SHIP/TR/INVOICE NUMBER

METREN 1261721-0001-01

1261721-0001-01

BILL MUNICIPALITY OF METRO RENTON
TO: 821 2ND AVE
EXCHANGE BLDG. A/P
SEATTLE WA 98104-1598
CUSTOMER P.O. NO. BB37005/REQ#6769

SHIP MUNICIPALITY OF METRO RENTON
TO: 1520 SW GRADY WAY
ATTN: ROSS
RENTON WA 98055
CUSTOMER P.O. NO. BB37005/REQ#6769

SHIP/TR/INVOICE NUMBER	SLSMN	ORDER DATE	TAKER	CUSTOMER P.O. NUMBER	DATE	FILLED BY
1261721-0001-01	633	08/24/95	195	BB37005/REQ#6769	08/24/95	<i>PL</i>

INSTRUCTIONS	FRT.	PAGE NO.	CHECKED BY
FDB DEST	F	1	<i>PL</i>

QUANTITY			DISP.	ITEM CODE AND DESCRIPTION	UM	UNIT PRICE	AMOUNT
ORDERED	B.O./RET.	SHIPPED					
10		10	+	IS 1705-0477 GORTEX MEMBRANE TMX410/412 1-A100	EA		
2	2	0	+	IS 1702-4191 REPLC FILTER	PK		
10		10	+	IS 1702-7152 DUST/WATER FILTER-ALL PUMPS 1-A100	EA		
2		2	+	IS 1704-1889 CO SENSOR-TMX 410 1-A100	EA		
2		2	+	IS 1704-1898 H2S SENSOR-TMX 410 1-A100	EA		
2		2	+	IS 1702-3514 O2 SENSOR-TMX 410 1-A100	EA		
2		2	+	IS 1704-1856 LEL/METHANE SENSOR-TMX 410 1-A100	EA		
1		1	+	IS 1810-2187 CAL GAS-CO/H2S/O2/PENTANE 1-A201C	EA		
1		1	+	IS 1810-1881 5 UNIT CHARGER 1-A202A	EA		

CODE EXPLANATION

- * - STATE TAX APPLICABLE
- * - LOCAL TAX APPLICABLE
- STATE & LOCAL TAX APPL.
- BALANCE BACK ORDERED
- C - CONSIDER COMPLETE
- D - DIRECT SHIPMENT
- F - FACTORY MINIMUM
- R - RETURNED CYL

0824950849
0824951329
0824951329 22

SHIP ORDER***SHIP ORDER***

FREIGHT IN	FREIGHT OUT

No returns without prior authorization.
Returns subject to restocking charges.

SUB TOTAL
MISC. CHARGE
TELE. CHARGE
FREIGHT TOTAL
LOCAL TAX
STATE TAX
PAYMENT REC'D.