

This product contains nitrogen, a substance subject to the Pennsylvania Worker and Community Right-To-Know Act.

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**PRODUCT IDENTITY**

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LABEL IDENTITY - MSA P/N 803500 Calibration Check Gas, 100 ppm HFC - 134a in Nitrogen  
CHEMICAL NAME - 1,1,1,2 - Tetrafluoroethane in Nitrogen  
ADDITIONAL IDENTITIES - MSA P/N 803500 Calibration Gas 100 ppm HFC - 134a in Nitrogen  
FORMULA -  $CF_3CH_2F$  in  $N_2$

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**APPLICABLE CHEMICAL CONTENTS**

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		<u>contents</u>	<u>TWA</u>
$CF_3CH_2F$ (CAS 811-97-2)		100 ppm	1000 ppm*
Nitrogen (CAS 7727-37-9)	Balance	None	

NOTE: Gas under pressure, 1000 PSIG at 70°F, Approx. 100 Liters Gas at Atmospheric Pressure

\* Set by manufacturer

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**PHYSICAL AND CHEMICAL PROPERTIES**

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APPEARANCE AND ODOR - Colorless, Odorless Gas Mixture

Following information is for Nitrogen the main component of this gas mixture

BOILING POINT - -320.4 °F (-195.8 °C)      SPECIFIC GRAVITY (air = 1) @70°F (21.1 °C): 0.906

VAPOR PRESSURE @70°F (21.1 °C): N/A\*      PERCENT VOLATILE BY VOLUME - N/A\*

GAS DENSITY @32°F (0 °C) and 1 atm: 0.072 lbs/ft<sup>3</sup> (1.153 kg/ m<sup>3</sup>)

VAPOR DENSITY (AIR = 1) - 1

SOLUBILITY IN WATER -  $CF_3CH_2F$  -approx. 36 cm<sup>3</sup>/100 ml (25°C)  
Nitrogen - 2.3 cm<sup>3</sup>/100 ml (0°C)

N/A \*- Not Applicable

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**PHYSICAL HAZARD INFORMATION**

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PHYSICAL HAZARD - Compressed gas, 1000 PSIG at 70°F

CONDITIONS OR MATERIALS TO AVOID - Avoid bases. Avoid powdered active metals such as aluminum, alkali metals or alkaline earth metals.

FLASH POINT - N/A

EXTINGUISHING MEDIA - This calibration gas mixture is not flammable.

SPECIAL FIRE FIGHTING PROCEDURES - 1,1,1,2 - Tetrafluoroethane decomposes at high temperatures yielding toxic halogen compounds. Use self-contained pressure demand type breathing apparatus with full face piece.

UNUSUAL FIRE AND EXPLOSION HAZARDS - Gas under pressure, 1000 PSIG at 70°F. Do not exceed 120°F.

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**HEALTH HAZARDS**

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HEALTH HAZARDS - No TWA has been established for 1,1,1,2 - Tetrafluoroethane. TWA set by manufacturer 1000 ppm . A manufacturer reports that inhalation of very high concentrations may cause temporary alteration of the heart's electrical activity with irregular pulse, palpitations or inadequate circulation. Nitrogen is an asphyxiant.

SIGNS AND SYMPTOMS OF EXPOSURE: None known for 100 ppm 1,1,1,2 - Tetrafluoroethane. Nitrogen is an asphyxiant. Significant dilution of ambient air by asphyxiants causes air hunger, increased breathing frequency, drowsiness, weakness, and ringing in ears.

PRIMARY ROUTES OF ENTRY - Inhalation

TARGET ORGANS - Lungs

MEDICAL CONDITIONS GENERALLY RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE - No Information

EXPOSURE LIMITS – Recommended by manufacturer 1000 ppm TWA.

CARCINOGENICITY DATA - NIOSH RTECS, OSHA, NTP or IARC does not list component gases.

EMERGENCY AND FIRST AID PROCEDURES - Remove victim from exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

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**SAFE HANDLING AND USE**

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HYGIENIC PRACTICES - Avoid breathing gas

PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE OF CONTAMINATED EQUIPMENT - N/A

PROCEDURES FOR SPILL OR LEAK CLEANUP - Ventilate area

WASTE DISPOSAL - Do not puncture or incinerate cylinder. Before discarding cylinder, slowly release contents to a safe exhaust. Dispose of cylinder in accordance with local, state, and federal regulations.

STORAGE - Store in a cool, dry, well-ventilated area. Do not exceed 120°F.

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**CONTROL MEASURES**

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PERSONAL PROTECTIVE EQUIPMENT - Due to the limited amount of gas in the cylinder, and the low release rate employed in instrument calibration, respiratory protection is not indicated under conditions of intended use.

ENGINEERING CONTROLS - Mechanical ventilation is suitable.

WORK PRACTICES - Avoid breathing gas. Use in well-ventilated areas. Follow the calibration procedure detailed in the MSA instruction manual provided with the instrument under calibration.

DATE OF PREPARATION - Rev. 8, February 2011

WARNING: This is a hazardous chemical product. By following the directions and warnings provided with this product, the hazards associated with the use of this product can be greatly reduced but never entirely eliminated. Mine Safety Appliances Company makes no warranties, expressed or implied, with respect to this product and EXPRESSLY DISCLAIMS THE WARRANTY OF MERCHANTABILITY AND ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. Users assume all risks in handling, using or storing this product.