

# Shipping Instructions for Natural Gas Samples in Cylinders

*You must be certified to ship hazardous goods in order to legally ship flammable gas samples.*

## **IMPORTANT NOTICE:**

ISOTECH DOES NOT DO BUSINESS OR RENDER SERVICES TO CUBA, IRAN, NORTH KOREA, SUDAN, OR SYRIA. SAMPLES FROM THESE COUNTRIES WILL BE REJECTED.

1. After checking to insure that all cylinder valves are closed and tightly capped, seal the cartons with the four (4) plastic cable ties supplied.
2. Attach the provided hazard warning labels to each carton as shown.



3. Deliver to a commercial shipping office (Airborne Express, Federal Express, etc.), or dispatch through your shipping pickup service. Note: UPS will only accept hazardous materials from certified haz-mat shippers who have a contract with them and will not accept flammable gases for air shipment at all.
4. Complete the shipping documents required (these vary from company to company). To assist you in filling out these documents, the various pieces of information that you may need are provided on the back of these shipping instructions. Insure the shipment at a rate of \$250 per gas cylinder. If needed, a copy of a Material Data Safety Sheet for compressed natural gas is placed in the bottom of each carton (under the foam packing).
5. Please notify us when samples have been shipped either by telephone (217) 398-3490 or by FAX (217) 398-3493.

**See next page for hazardous materials information  
(For international shipment, see additional instructions included)**

**Ship to:**

Isotech Laboratories, Inc.  
1308 Parkland Court  
Champaign, Illinois 61821  
Telephone number 217/398-3490  
FAX number 217/398-3493  
EMAIL mail@isotechlabs.com

**Proper Shipping Name:**

Natural Gas, compressed

**Class or Division:**

2.1

**UN or ID No.:**

UN1971

**Subsidiary Risk:**

none (leave blank)

**Quantity and Type of Packaging:**

depends on type of cylinder

*For boxes of ten 150cc cylinders write* #\_\_ plastic box (es) x 1 kg

*For boxes of eight 300cc cylinders write* #\_\_ plastic box (es) x 1 kg

*For boxes of three 1 liter cylinders write* #\_\_ plastic box (es) x 1 kg

**Packaging Group:**

none (leave blank)

**Packing Instructions:**

200

**Transport Details:**

Cargo Aircraft only

**Shipment type:**

Non-radioactive

**Emergency telephone number within U.S.:**

see note below

**Prepared For:**

ICAO/IATA

**Insurance Value:**

\$250 per cylinder

**Note:** As required by the Department of Transportation (49 CFR - Part 172, Subpart G, §172.604) a person who offers a hazardous material for transportation must provide an emergency response telephone number, including the area code or international access code, for use in the event of an emergency involving the hazardous material. You **MUST** use your company's emergency response telephone number. If one is not available to you please contact us and we can advise you on how to obtain one.

**These instructions have been prepared to simplify the task of shipping samples and are based on the "IATA Dangerous Goods Regulations 48th Edition, 2007". However, it is you, the shipper, who is ultimately responsible for the safe and legal shipment of these samples in compliance with the most recent applicable local, state, and international shipping regulations. Isotech assumes no liability resulting from the improper packaging and shipment of samples and makes no guarantees regarding the validity of the information presented here.**

**WARNING: Samples containing high concentrations of hydrogen sulfide (>~1%) cannot be shipped by air. Samples containing hydrogen sulfide are class 2.3, toxic gas, and have additional shipping restrictions.**

# Material Safety Data Sheet (MSDS)

## SECTION I

**TRADE NAME** Natural Gas, compressed (UN1971)

**CHEMICAL NAME AND SYNONYMS** Natural Gas, >50% Methane

## SECTION II -

### HAZARDOUS INGREDIENTS

Methane (CAS 74-82-8)	50 - 99%
Carbon dioxide (CAS 124-38-9)	0 - 50%
Nitrogen (CAS 124-38-9)	0 - 95%
Ethane (CAS 74-84-0)	0 - 10%
Propane (CAS 74-98-6)	0 - 5%
Butane (CAS 106-97-8)	0 - 2%
C <sub>x</sub> H <sub>2x+2</sub> (x+5 and above)	0 - 1%

Compressed flammable gas may also contain trace quantities (<0.1%) of various organic gases not listed above.

## SECTION III - PHYSICAL DATA

**Solubility:** appreciable

**Appearance (Color, Odor, etc.):** colorless, tasteless and normally odorless gas, however may have a characteristically organic odor.

**Boiling Point:** less than -258°F (est)

**Specific Gravity:** see Gas Density

**Vapor Pressure:** not established Percent Volatile (Volume %): 100

**Evaporation:** n/a

**Gas Density:** 0.6 to 1.2 (air = 1.0)

## SECTION IV -

### FIRE AND EXPLOSION HAZARD DATA

Compressed gas presents an extreme fire hazard.

Being a mixture, the gas can explode violently on contact with any source of ignition.

**Flash Point:** less than -305°F (est.)

**Autoignition Temp.:** approx. 930°F

**Flammability Limits:** LEL 5% to UEL 15%

**Extinguishing Media:** Carbon dioxide or dry chemical.

**Special Fire Fighting Procedures:** For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This should include self-contained breathing apparatus to protect against the hazardous effects of normal products of combustion or oxygen deficiency. Stop gas flow. May reignite explosively if fire is extinguished before stopping flow. Use water spray for cooling. Read the entire MSDS.

## SECTION V -

### HEALTH HAZARD INFORMATION

**Eye Contact:** Could cause eye irritation.

**Skin Contact:** Could be irritating to the skin.

**Inhalation:** Breathing high concentrations of compressed gas, flammable may produce asphyxia by displacement of room air. Signs and symptoms which precede asphyxia may include rapid respiration, loss of mental alertness and coordination, dizziness, nausea and vomiting.

**Chronic Effects:** Repeated exposures to the mixture may reduce the threshold of exposure at which symptoms occur. Neurologic effects such as headache and insomnia have been reported. Conditions which may be worsened by the mixture consist of conjunctivitis, allergic rhinitis and angina with inhalation of high concentrations.

## EMERGENCY FIRST AID PROCEDURES

**Eye Contact:** Flush eyes immediately with fresh water for at least 15 minutes while holding the eyelids open. If irritation continues, seek medical attention.

**Skin Contact:** After removing any contaminated clothing, wash effected thoroughly with soap and water. Seek medical attention if irritation develops or persists.

## **SECTION VI - REACTIVITY DATA**

**Stability (Thermal, Light, etc.):** Stable Avoid heat, sparks and open flame.

**Incompatibility (Materials to Avoid):** Oxidizers Hazardous Decomposition

**Products:** Combustion may produce carbon monoxide, carbon dioxide, ethylene, and acetylene.

**Hazardous Polymerization:** Will not occur.

## **SECTION VII - SPILL OR LEAK PROCEDURES**

Eliminate all sources of ignition in vicinity of released gas. Stop gas flow if it can be done without risk. Provide forced ventilation to keep concentrations below the explosive range. Evacuate the area if gas concentration exceeds 10% of the LEL. If area must be entered when the gas concentration is between 10% and 25% of the LEL, wear NIOSH/MSHA approved self contained breathing apparatus (SCBA). Do not enter areas if methane concentration equals or exceeds 25% of the LEL.

**Waste Disposal Methods:** Burn through a flare stack in accordance with federal, state and local regulations.

## **SECTION VIII -**

### **SPECIAL PROTECTIVE INFORMATION**

**Eye Protection:** eye protection is recommended.

**Skin Protection:** skin protection is recommended.

**Respiratory Protection:** No special respiratory protection is normally required. However, if operation conditions create high airborne concentrations, the use of a NIOSH/MSNA approved self contained breathing apparatus (SCBA) is recommended.

**Ventilation:** No special ventilation is usually necessary. However, if operating conditions create high airborne concentrations of this material, special ventilation may be needed.

## **SECTION IX - SPECIAL PRECAUTIONS**

Flammable gas. Ground all lines and equipment used with gas to prevent static sparks. Do not smoke where gas is used or stored. A 19.5% oxygen concentration in air is the minimum recommended for working without special breathing equipment.

n/a = Not Applicable

**The information contained herein has been developed based upon current available scientific data. New information may be developed from time to time which may render the conclusions of this report obsolete. Therefore, no warranty is extended as to the applicability of this information to the user's intended purpose or for the consequences of its use or misuse**