

MATERIAL SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Stop 2300
Gaithersburg, Maryland 20899-2300

RM Number: 8559
MSDS Number: 8559
RM Name: Natural Gas, Coal Origin
(> 80 % methane)

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Description: A unit of RM 8559 consists of a 50-milliliter stainless steel cylinder sealed with an all-metal seat in a bellows valve. Each cylinder contains about 10 mmol (almost 2 g) of gas compressed to about 5 MPa (800 psia).

Substance: Natural gas

Other Designations: Gas fuels, sweet natural gas, marathon natural gas

2. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

| Component | CAS Number | EC Number (EINECS) | Nominal Concentration |
|-------------|------------|--------------------|-----------------------|
| Natural gas | 8006-14-2 | 232-343-9 | 100 % |

EC Classification: F+ Extremely Flammable

EC Risk: R12

EU Risk/Safety Phrases: Refer to Section 15 "Regulatory Information" (R12).

3. HAZARDS IDENTIFICATION

NFPA Ratings (Scale 0–4): Health = 2 Fire = 4 Reactivity = 0

Major Health Hazards: Natural gas is a simple asphyxiant. Inhalation of the gas may result in difficulty breathing, dizziness, tingling sensations or nausea and vomiting.

Physical Hazards: Natural gas is extremely flammable. Cylinder may rupture or explode if exposed to heat or flame.

Potential Health Effects (Short Term Exposure)

Inhalation: May result in difficulty breathing, dizziness, tingling sensations, nausea and vomiting.

Skin Contact: Sudden release may result in frostbite.

Eye Contact: No information on significant adverse effects.

Ingestion: Ingestion of a gas is unlikely.

Listed as a Carcinogen/Potential Carcinogen

In the National Toxicology Program (NTP) Report on Carcinogens

In the International Agency for Research on Cancer (IARC) Monographs

By the Occupational Safety and Health Administration (OSHA)

| Yes | No |
|-------|--------------|
| _____ | <u> X </u> |
| _____ | <u> X </u> |
| _____ | <u> X </u> |

9. PHYSICAL AND CHEMICAL PROPERTIES

Component: Natural gas.

Physical state: Gaseous.

Appearance and Odor: Colorless, tasteless, varying odor.

Vapor Density (air = 1): 0.8

Water solubility: Insoluble.

Volatility: 100 %.

10. STABILITY AND REACTIVITY

Stability: Stable Unstable

Stable at normal temperatures and pressure.

Conditions to Avoid: Avoid heat, flames, sparks or other sources of ignition. Cylinder may rupture or explode if exposed to heat or flames. Protect cylinder from physical damage. Avoid contact with incompatible materials. Avoid inhalation of material.

Incompatibilities: Oxidizing materials.

Hazardous Decomposition Byproducts: Oxides of carbon.

Fire/Explosion Information: Refer to Section 5, "Fire Fighting Measures".

Hazardous Polymerization: Will Occur Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Entry: Inhalation Skin Ingestion

Toxicity Data: Compressed natural gas is listed as a simple asphyxiant.

Health Effects:

Acute Exposure: The amount of natural gas supplied by RM 8559 (2 g) is unlikely to result in acute asphyxia. The following symptoms are provided as general information.

Simple Asphyxiants: The symptoms of asphyxia depend on the rapidity with which the oxygen deficiency develops and how long it continues. In sudden acute asphyxia, unconsciousness may be immediate. With slow development, there may be rapid respiration and pulse, air hunger, dizziness, reduced awareness, tightness in the head, tingling sensations, incoordination, faulty judgment, emotional instability, and rapid fatigue. As the asphyxia progresses, nausea, vomiting, collapse, unconsciousness, convulsions, deep coma and death are possible.

Chronic Exposure: No data listed.

Medical Conditions Generally Aggravated by Exposure: None listed.

12. ECOLOGICAL INFORMATION

Environmental Summary: No data listed.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: The cylinder is the property of the purchaser. Dispose in accordance with all applicable federal, state, and local regulations. Natural gas is subject to disposal regulations: U.S. EPA 40 CFR 262, Hazardous Waste Number(s): D001.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: Methane, compressed, UN1971, Hazard Class 2.1, Flammable gas

15. REGULATORY INFORMATION

U.S. REGULATIONS

CERCLA Sections 102a/103 (40 CFR 302.4): Not regulated.

SARA Title III Section 302 (40 CFR 355.30): Not regulated.

SARA Title III Section 304 (40 CFR 355.40): Not regulated.

SARA Title III Section 313 (40 CFR 372.65): Not regulated.

OSHA Process Safety (29 CFR 1910.119): Not regulated.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21)

ACUTE: Yes

CHRONIC: No

FIRE: Yes

REACTIVE: No

SUDDEN RELEASE: Yes

STATE REGULATIONS

California Proposition 65: Not regulated

CANADIAN REGULATIONS

WHMIS Classification: Not determined.

EUROPEAN REGULATIONS

EC Classification: F+ Extremely flammable.

EC Risk and Safety Phrases: R12 Extremely flammable

NATIONAL INVENTORY STATUS

U.S. Inventory (TSCA): Listed on inventory.

TSCA 12(b), Export Notification: Not listed.

16. OTHER INFORMATION

Sources: MDL Information Systems, Inc., MSDS *Natural gas*, 13 September 2007.

Disclaimer: Physical and chemical data contained in this MSDS are provided only for use as a guide in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data in the MSDS. The certified values for this material are given in the NIST Certificate of Analysis.