

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATHESON TRI-GAS, INC.
959 ROUTE 46 EAST
PARSIPPANY, NEW JERSEY 07054-0624

EMERGENCY CONTACT:
CHEMTREC 1-800-424-9300
INFORMATION CONTACT:
973-257-1100

SUBSTANCE: METHANE, COMPRESSED GAS

TRADE NAMES/SYNONYMS:

MTG MSDS 58; FIRE DAMP; MARSH GAS; METHYL HYDRIDE; NATURAL GAS; METHANE; UN 1971; R50; CH₄; MAT14160; RTECS PA1490000

CHEMICAL FAMILY: hydrocarbons, gas

CREATION DATE: Jan 24 1989

REVISION DATE: Jun 17 2004

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: METHANE

CAS NUMBER: 74-82-8

PERCENTAGE: 100.0

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=4 REACTIVITY=0



EMERGENCY OVERVIEW:

COLOR: colorless

PHYSICAL FORM: gas

ODOR: odorless

MAJOR HEALTH HAZARDS: difficulty breathing

PHYSICAL HAZARDS: Flammable gas. May cause flash fire. Electrostatic charges may be generated by flow, agitation, etc.

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: nausea, vomiting, difficulty breathing, irregular heartbeat, headache,

drowsiness, fatigue, dizziness, disorientation, mood swings, tingling sensation, loss of coordination, suffocation, convulsions, unconsciousness, coma

LONG TERM EXPOSURE: no information is available

SKIN CONTACT:

SHORT TERM EXPOSURE: no information on significant adverse effects

LONG TERM EXPOSURE: no information is available

EYE CONTACT:

SHORT TERM EXPOSURE: no information on significant adverse effects

LONG TERM EXPOSURE: no information is available

INGESTION:

SHORT TERM EXPOSURE: ingestion of a gas is unlikely

LONG TERM EXPOSURE: no information is available

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: Wash exposed skin with soap and water.

EYE CONTACT: Flush eyes with plenty of water.

INGESTION: If a large amount is swallowed, get medical attention.

NOTE TO PHYSICIAN: For inhalation, consider oxygen.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Severe fire hazard. Severe explosion hazard. Pressurized containers may rupture or explode if exposed to sufficient heat. Vapor/air mixtures are explosive above flash point. Electrostatic discharges may be generated by flow or agitation resulting in ignition or explosion.

EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical

Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING: Move container from fire area if it can be done without risk. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Stop leak if possible without personal risk. Let burn unless leak can be stopped immediately. For smaller tanks or cylinders, extinguish and isolate from other flammables. Evacuation radius: 800 meters (1/2 mile). Stop flow of gas.

FLASH POINT: -369 F (-223 C)
LOWER FLAMMABLE LIMIT: 5.0%
UPPER FLAMMABLE LIMIT: 15%
AUTOIGNITION: 999 F (537 C)

6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away, isolate hazard area and deny entry. Remove sources of ignition. Ventilate closed spaces before entering.

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Grounding and bonding required. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

METHANE, COMPRESSED GAS:

ALIPHATIC HYDROCARBON GASES ALKANE (C1-C4):

1000 ppm ACGIH TWA

METHANE:

No occupational exposure limits established.

ALIPHATIC HYDROCARBON GASES ALKANE (C1-C4):

1000 ppm ACGIH TWA

VENTILATION: Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Eye protection not required, but recommended.

CLOTHING: Protective clothing is not required.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: Under conditions of frequent use or heavy exposure, respiratory protection may be needed.

Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Any self-contained breathing apparatus with a full facepiece.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: gas

COLOR: colorless

ODOR: odorless

TASTE: tasteless

MOLECULAR WEIGHT: 16.04

MOLECULAR FORMULA: C-H4

BOILING POINT: -260 F (-162 C)

FREEZING POINT: -297 F (-183 C)

VAPOR PRESSURE: 760 mmHg @ -161 C

VAPOR DENSITY (air=1): 0.555

SPECIFIC GRAVITY: Not applicable

DENSITY: 0.717 g/L @ 0 C

WATER SOLUBILITY: 3.5% @ 17 C

PH: Not applicable

VOLATILITY: Not applicable

ODOR THRESHOLD: Not available

EVAPORATION RATE: Not applicable

VISCOSITY: 0.01118 cP @ 27 C

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable

SOLVENT SOLUBILITY:

Soluble: alcohol, ether, benzene, organic solvents

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

INCOMPATIBILITIES: halogens, oxidizing materials, combustible materials

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: oxides of carbon

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

METHANE, COMPRESSED GAS:

TOXICITY DATA:

50 pph/2 hour(s) inhalation-mouse LC50

ACUTE TOXICITY LEVEL:

Relatively Non-toxic: inhalation

METHANE:

TOXICITY DATA:

50 pph/2 hour(s) inhalation-mouse LC50

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Relatively Non-toxic: inhalation

12. ECOLOGICAL INFORMATION

FATE AND TRANSPORT:

KOW: 724.44 (log = 2.87) (estimated from water solubility)

KOC: 2192.80 (log = 3.34) (estimated from water solubility)

HENRY'S LAW CONSTANT: 4.6 E -4 atm-m³/mol

BIOCONCENTRATION: 1.68 (estimated from water solubility)

AQUATIC PROCESSES: 1.0416679 hours (River Model: 1 m deep, 1 m/s flow, 3 m/s wind)

ENVIRONMENTAL SUMMARY: Relatively non-persistent in the environment. Not expected to leach through the soil or the sediment. Accumulates very little in the bodies of living organisms. Moderately volatile from water.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Methane, compressed

ID NUMBER: UN1971



HAZARD CLASS OR DIVISION: 2.1
LABELING REQUIREMENTS: 2.1
QUANTITY LIMITATIONS:
PASSENGER AIRCRAFT OR RAILCAR: Forbidden
CARGO AIRCRAFT ONLY: 150 kg

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:
SHIPPING NAME: Methane, compressed
UN NUMBER: UN1971
CLASS: 2.1

15. REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: Yes

CHRONIC: No

FIRE: Yes

REACTIVE: No

SUDDEN RELEASE: Yes

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.

STATE REGULATIONS:

California Proposition 65: Not regulated.

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: A, B1.

NATIONAL INVENTORY STATUS:

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

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): Listed on inventory.

16. OTHER INFORMATION

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