



NFPA 704 (Section 16)

AMERADA HESS CORPORATION**MATERIAL SAFETY DATA SHEET****NATURAL GAS (odorized)****MSDS No. 8010****1. CHEMICAL PRODUCT and COMPANY INFORMATION (rev. Aug-98)**

Amerada Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

EMERGENCY TELEPHONE NUMBER (24 hrs): CHEMTREC (800) 424-9300**COMPANY CONTACT (business hours):** Corporate Safety (732) 750-6000**SYNONYMS:** Compressed Natural Gas (CNG); Dry Natural Gas ; Methane; Pipeline Spec Gas;
Processed Gas; Residue Gas; Sweet Natural Gas; Treated Gas

See Section 16 for abbreviations and acronyms.

2. COMPOSITION and INFORMATION ON INGREDIENTS (rev. Aug-98)

INGREDIENT NAME (CAS Number)	EXPOSURE LIMITS	CONCENTRATION PERCENT BY VOLUME
Natural Gas, dry (68410-63-9)	None established by OSHA or ACGIH Simple asphyxiant; exposure limited by oxygen and flammability	100
Methane (115-07-1)	None established by OSHA or ACGIH Simple asphyxiant	< 90
Ethane (74-84-0)	None established by OSHA or ACGIH Simple asphyxiant	< balance >

A complex mixture of light gases separated from raw natural gas consisting of aliphatic hydrocarbons having carbon numbers in the range of C1 through C4, predominantly methane (C1) and ethane (C2); may contain carbon dioxide (CO₂). Odorized with trace amounts of odorant (see Section 9). This is for natural gas that has been processed and is in commerce.

3. HAZARDS IDENTIFICATION (rev. Aug-98; Tox-98)**EMERGENCY OVERVIEW****DANGER!****EXTREMELY FLAMMABLE GAS - MAY CAUSE FLASH FIRE OR EXPLOSION!**

High concentrations may exclude oxygen and cause dizziness and suffocation. Contact with pressurized vapor may cause frostbite or freeze burn.

EYES

Not irritating. However, contact with pressurized vapor may cause frostbite, freeze burns, and permanent eye damage.

SKIN

Not irritating. Direct contact to skin or mucous membranes with pressurized vapor may cause freeze burns and frostbite. Signs of frostbite include a change in the color of the skin to gray or white, possibly followed by blistering. Skin may become inflamed and painful.

INGESTION

Risk of ingestion is extremely unlikely.

INHALATION

This product is considered to be non-toxic by inhalation. Inhalation of high concentrations may cause central nervous system depression such as dizziness, drowsiness, headache, and similar narcotic symptoms, but no long-term effects. Numbness, a "chilly" feeling, and vomiting have been reported from accidental exposures to high concentrations.

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This product is a simple asphyxiant. In high concentrations it will displace oxygen from the breathing atmosphere, particularly in confined spaces. Signs of asphyxiation will be noticed when oxygen is reduced to below 16%, and may occur in several stages. Symptoms may include rapid breathing and pulse rate, headache, dizziness, visual disturbances, mental confusion, incoordination, mood changes, muscular weakness, tremors, cyanosis, narcosis and numbness of the extremities. Unconsciousness leading to central nervous system injury and possibly death will occur when the atmospheric oxygen concentration is reduced to about 6% to 8% or less.

WARNING: The burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

CHRONIC and CARCINOGENICITY

None expected - see Section 11.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with pre-existing conditions of the heart, lungs, and blood may have increased susceptibility to symptoms of asphyxia.

4. FIRST AID MEASURES (rev. Aug-98; Tox-98)

EYES

In case of freeze burn cover eyes to protect from light. Seek immediate medical attention.

SKIN

In case of frostbite or freeze burns seek immediate medical attention.

INGESTION

Though risk of ingestion is extremely unlikely, in case of frostbite or freeze burns due to oral exposure seek immediate medical attention.

INHALATION

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

5. FIRE FIGHTING MEASURES (rev. Aug-98)

FLAMMABLE PROPERTIES: (NFPA Natural Gas)

FLASH POINT: Flammable gas
AUTOIGNITION POINT: 900 - 1170 °F (482 - 632 °C)
OSHA/NFPA FLAMMABILITY CLASS: FLAMMABLE GAS
LOWER EXPLOSIVE LIMIT (%): 3.8 - 6.5
UPPER EXPLOSIVE LIMIT (%): 13 - 17

FIRE AND EXPLOSION HAZARDS

Dangerous fire and explosion hazard when exposed to heat, sparks or flame. Natural gas is lighter than air and may travel long distances to a point of ignition and flash back. Container may explode in heat or fire. Liquefied Natural Gas (LNG) releases flammable gas at well below ambient temperatures and readily forms a flammable mixture with air.

EXTINGUISHING MEDIA

Dry chemical, carbon dioxide, Halon or water. However, fire should not be extinguished unless flow of gas can be immediately stopped.

FIRE FIGHTING INSTRUCTIONS

Gas fires should not be extinguished unless flow of gas can be immediately stopped. Shut off gas source and allow gas to burn out. If spill or leak has not ignited, determine if water spray may assist in dispersing gas or vapor to protect personnel attempting to stop leak.

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Use water to cool equipment, surfaces and containers exposed to fire and excessive heat. For large fire the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure.

Isolate area, particularly around ends of storage vessels. Let vessel, tank car or container burn unless leak can be stopped. Withdraw immediately in the event of a rising sound from a venting safety device. Large fires typically require specially trained personnel and equipment to isolate and extinguish the fire.

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

See Section 16 for the NFPA 704 Hazard Rating.

6. ACCIDENTAL RELEASE MEASURES (rev. Aug-98)

ACTIVATE FACILITY'S SPILL CONTINGENCY or EMERGENCY RESPONSE PLAN.

Evacuate nonessential personnel and secure all ignition sources. No road flares, smoking or flames in hazard area. Consider wind direction, stay upwind, if possible. Evaluate the direction of product travel. Cold vapor cloud may be white, but color will dissipate as cloud disperses - fire and explosion hazard is still present!

Stop the source of the release, if safe to do so. Consider the use of water spray to disperse vapors. Isolate the area until gas has dispersed. Ventilate and gas test area before entering.

7. HANDLING and STORAGE (rev. Aug-98)

HANDLING and STORAGE PRECAUTIONS

Keep away from flame, sparks and excessive temperatures. Store only in approved containers. Bond and ground containers. Use only in well ventilated areas. See also applicable OSHA regulations for the handling and storage of this product, including, but not limited to, 29 CFR 1910.110 Storage and Handling of Liquefied Petroleum Gases.

8. EXPOSURE CONTROLS and PERSONAL PROTECTION (rev. Aug-94)

ENGINEERING CONTROLS

Use adequate ventilation to keep gas concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use explosion-proof equipment and lighting in classified/controlled areas.

EYE/FACE PROTECTION

Splash-proof safety goggles and/or faceshield for protection from pressurized gas

SKIN PROTECTION

Wear apron, faceshield, and cold-impervious, insulating gloves may protect from pressurized gas.

RESPIRATORY PROTECTION

Use a NIOSH/MSHA approved positive-pressure, supplied air respirator with escape bottle or self-contained breathing apparatus (SCBA) for gas concentrations above occupational exposure limits, for potential for uncontrolled release, if exposure levels are not known, or in an oxygen-deficient atmosphere.

CAUTION: Flammability limits (i.e., explosion hazard) should be considered when assessing the need to expose personnel to concentrations requiring respiratory protection.

Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection.

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9. PHYSICAL and CHEMICAL PROPERTIES (rev. Jun-97)

APPEARANCE

Colorless gas. Cold vapor cloud may be white but the lack of visible gas cloud does not indicate absence of gas.

ODOR

Natural gas has a distinctive, disagreeable "natural gas" type odor when treated with an odorizing agent (typically < 0.1% ethyl mercaptan).

BASIC PHYSICAL PROPERTIES (for methane)

BOILING POINT: -259 °F (-162 °C)
VAPOR PRESSURE: 40 atm. @ -187 °F (-86 °C)
VAPOR DENSITY (air = 1): 0.6
SPECIFIC GRAVITY (H₂O = 1): 0.4 @ -263 °F (-164 °C)
SOLUBILITY (H₂O): 3.5%

10. STABILITY and REACTIVITY (rev. Aug-94)

STABILITY: Stable. Hazardous polymerization will not occur.

CONDITIONS TO AVOID and INCOMPATIBLE MATERIALS

Keep away from strong oxidizers, ignition sources and heat.

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

11. TOXICOLOGICAL PROPERTIES (rev. Aug-98; Tox-98)

ACUTE TOXICITY

Methane and ethane, the main components of natural gas, are considered practically inert in terms of physiological effects. At high concentrations these materials act as simple asphyxiants and may cause death due to lack of oxygen.

CARCINOGENICITY

OSHA: NO IARC: NO NTP: NO ACGIH: NO

12. ECOLOGICAL INFORMATION (rev. Aug-98)

This product is expected to exist entirely in the vapor phase in ambient air.

13. DISPOSAL CONSIDERATIONS (rev. Aug-98)

Consult federal, state and local waste regulations to determine appropriate disposal methods.

14. TRANSPORTATION INFORMATION (rev. Aug-98)

PROPER SHIPPING NAME: NATURAL GAS, COMPRESSED (*with high methane content*)
HAZARD CLASS: 2.1
DOT IDENTIFICATION NUMBER: UN 1971
DOT SHIPPING LABEL: FLAMMABLE GAS

15. REGULATORY INFORMATION (rev. Aug-98)

U.S. FEDERAL, STATE, and LOCAL REGULATORY INFORMATION

This product and its constituents listed herein are on the EPA TSCA Inventory. Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal, state and/or local reporting requirements. This product and/or its constituents may also be subject to other regulations at the state and/or local level. Consult those regulations applicable to your facility/operation.

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CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIRONMENT)

This product does not contain any chemicals subject to the reporting requirements of CERCLA Section 103 or SARA 304. In addition, the CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts natural gas and synthetic gas usable for fuel and any indigenous components of such from the CERCLA Section 103 reporting requirements.

SARA SECTION 311/312 - HAZARD CLASSES

<u>ACUTE HEALTH</u>	<u>CHRONIC HEALTH</u>	<u>FIRE</u>	<u>SUDDEN RELEASE OF PRESSURE</u>	<u>REACTIVE</u>
--	--	X	X	--

SARA SECTION 313 - SUPPLIER NOTIFICATION

This product does not contain any chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372.

CANADIAN REGULATORY INFORMATION

Class A (Compressed Gas) Class B, Division 1 (Flammable Gas)

16. OTHER INFORMATION (rev. Feb-00)

NFPA® 704 HAZARD RATING

HEALTH:	1	Slight
FIRE:	4	Extreme
REACTIVITY:	0	Negligible

HMIS® HAZARD RATING

HEALTH:	1	Slight
FIRE:	4	Severe
REACTIVITY:	0	Minimal

SUPERSEDES MSDS DATED: 08/12/98

ABBREVIATIONS:

AP = Approximately < = Less than > = Greater than
 N/A = Not Applicable N/D = Not Determined ppm = parts per million

ACRONYMS:

ACGIH	American Conference of Governmental Industrial Hygienists	OPA	Oil Pollution Act of 1990
AIHA	American Industrial Hygiene Association	OSHA	U.S. Occupational Safety & Health Administration
ANSI	American National Standards Institute (212)642-4900	PEL	Permissible Exposure Limit (OSHA)
API	American Petroleum Institute (202)682-8000	RCRA	Resource Conservation and Recovery Act
CERCLA	Comprehensive Emergency Response, Compensation, and Liability Act	REL	Recommended Exposure Limit (NIOSH)
DOT	U.S. Department of Transportation [General info: (800)467-4922]	SARA	Superfund Amendments and Reauthorization Act of 1986 Title III
EPA	U.S. Environmental Protection Agency	SCBA	Self-Contained Breathing Apparatus
HMIS	Hazardous Materials Information System	SPCC	Spill Prevention, Control, and Countermeasures
IARC	International Agency For Research On Cancer	STEL	Short-Term Exposure Limit (generally 15 minutes)
MSHA	Mine Safety and Health Administration	TLV	Threshold Limit Value (ACGIH)
NFPA	National Fire Protection Association (617)770-3000	TSCA	Toxic Substances Control Act
NIOSH	National Institute of Occupational Safety and Health	TWA	Time Weighted Average (8 hr.)
NOIC	ACGIH TLV Notice of Intended Change	WEEL	Workplace Environmental Exposure Level (AIHA)
NTP	National Toxicology Program	WHMIS	Canadian Workplace Hazardous Materials Information System

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