



Material Safety Data Sheet

Natural Gas

1 Chemical product and company identification

Common name	: Natural Gas	Code	:
Supplier	: Sasol Oil (Pty) Ltd. P.O. Box 4211 Randburg 2125 Republic of South Africa TEL: +27 11 889 7600 FAX: +27 11 889 7979	MSDS#	:
Synonym	: Marsh gas	Validation date	: 2003/02/20.
Trade name	: Natural gas	Print date	: 2003/02/20.
Material uses	: Petrochemical industry: Petrochemicals.	Prepared by	: Boni Mehlomakulu
Manufacturer	: Sasol Synthetic Fuels Private Bag X1000 Secunda 2302 Republic of South Africa TEL: +27 17 610-1111	In case of emergency	: SASOL GAS ALRODE DEPOT +27 11 9081010 OR +27 11 8643960 SOUTH AFRICA: 0800 11 28 90 INTERNATIONAL: +27 17 610 4444

2 Composition / information on ingredients

Name	CAS #	% by weight	Exposure limits
Methane	74-82-8	87.6 (94.3 mole %)	Simple asphyxiant.
Ethane	74-84-0	3.7 (2.1 mole %)	Simple asphyxiant.
NITROGEN GAS	7727-37-9	2.8 (1.7 mole %)	Simple asphyxiant.
PROPANE	74-98-6	2.6 (1.0 mole %)	ACGIH TLV (United States, 2002). TWA: 1800 ppm 8 hour(s). OSHA (United States, 2002). TWA: 1000 ppm 8 hour(s). RQMT (United States, 2002). TWA: 1800 ppm 8 hour(s).

3 Hazards identification

Physical state and appearance : Gas.

Emergency overview : **DANGER!**

FLAMMABLE GAS.
MAY CAUSE FLASH FIRE.
GAS REDUCES OXYGEN AVAILABLE FOR BREATHING.

Hazardous gas under pressure. Keep away from heat, sparks and flame. Do not puncture or incinerate container. Keep container closed. Use only with adequate ventilation. Do not enter storage areas and confined spaces unless adequately ventilated.

Routes of entry : Inhalation.

Potential acute health effects

Eyes : Not considered to be a hazard.

Skin : Not considered to be a hazard.

Inhalation : Hazardous in case of inhalation. Asphyxiant.

Ingestion : Not applicable (Gas).

Potential chronic health effects : **CARCINOGENIC EFFECTS**: Not listed.
MUTAGENIC EFFECTS: Not listed.
TERATOGENIC EFFECTS: Not listed.

Medical conditions aggravated by overexposure: : Repeated or prolonged exposure is not known to aggravate medical condition.

Overexposure /signs/symptoms : Asphyxiation.

See toxicological information (section 11)

4 First aid measures

Eye contact : First aid is normally not required.

Skin contact : First aid is normally not required. Dermal contact with a rapidly expanding gas could result in frosting of the tissues or frostbite. Try to warm up the frozen tissues and seek medical attention.

Inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion : Not applicable (gas).

Notes to physician : Support respiratory and cardiovascular function.

5 Fire fighting measures

Flammability of the product : Flammable.

Autoignition temperature : 650°C (1202°F)

Flash points : Closed cup: Lower than -18°C (0°F).

Flammable limits : LOWER: 5% UPPER: 15%

Products of combustion : These products are carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂...).

Fire hazards in presence of various substances : Flammable in presence of open flames, sparks, static discharge, heat.

Explosion hazards in presence of various substances : Explosive in presence of oxidizing materials.

Fire fighting media and instructions : **SMALL FIRE**: Use DRY chemical powder.
LARGE FIRE: Use fog or foam. Do not use water jet. Move containing vessels from fire area if without risk. Cool containing vessels with flooding quantities of water until well after fire is out. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion. Do not extinguish a leaking gas flame unless leak can be stopped. Extinguish secondary fire. Handle damaged cylinders with extreme care.

Protective clothing (fire) : Be sure to use an approved/certified respirator or equivalent.

Special remarks on fire hazards : No additional remark.

Special remarks on explosion hazards : No additional remark.

6 Accidental release measures

- Small spill and leak** : Try to stop the gaseous leak by taping the container with an appropriate material (tape, stretched plastic).
- Large spill and leak** : Do not direct water at spill or source. Use water spray curtain to divert gas drift. Prevent entry into sewers, basements or confined areas. Eliminate all ignition sources.

7 Handling and storage

- Handling** : Keep away from heat, sparks and flame. Do not puncture or incinerate. Keep container closed. Use only with adequate ventilation. To avoid fire, minimize ignition sources. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.
- Storage** : Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Segregate from oxidizing materials. Avoid all possible sources of ignition (spark or flame).

8 Exposure controls, personal protection

- Engineering controls** : Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of gases below their respective threshold limit value.

Personal protection

- Eyes** : Splash goggles.
- Body** : Overalls.
- Respiratory** : Wear appropriate respirator when ventilation is inadequate.
- Hands** : Gloves.
- Feet** : Boots.

Protective clothing (pictograms)



- Personal protection in case of a large spill** : Wear appropriate respirator when ventilation is inadequate. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Product name	Exposure limits
Methane	Simple asphyxiant.
Ethane	Simple asphyxiant.
Nitrogen	Simple asphyxiant.
Propane	Simple asphyxiant.
	ACGIH TLV (United States, 2002).
	TWA: 1800 ppm 8 hour(s).
	OSHA (United States, 2002).
	TWA: 1000 ppm 8 hour(s).
	RQMT (United States, 2002).
	TWA: 1800 ppm 8 hour(s).

9 Physical and chemical properties

- Physical state and appearance** : Gas.
- Color** : Colourless.
- Odor** : Odourless.
- Taste** : No data available.
- Molecular weight** : Not applicable.
- Molecular formula** : Not applicable.
- pH (1% soln/water)** : No data available.
- Boiling/condensation point** : -160°C (-256°F)
- Melting/freezing point** : -172°C (-277.6°F) based on data for: Ethane. Weighted average: -183.39°C (-298.1°F)
- Critical temperature** : No data available.

Specific gravity	: 0.73 (with reference to air)
Vapor pressure	: Not applicable.
Vapor density	: No data available.
Volatility	: 100% (w/w).
Odor threshold	: The lowest known value is 200 ppm (Methane) Weighted average: 338.36 ppm
Evaporation rate	: Not applicable.
VOC	: Not applicable.
Viscosity	: Dynamic: 0.011731 cP
LogK_{ow}	: Not applicable.
Ionicity (in water)	: Not applicable.
Dispersion properties	: Not applicable.
Solubility	: Slightly soluble in cold water, acetone.
Physical chemical comments	: No additional remark.

10 Stability and reactivity

Stability and reactivity	: The product is stable.
Conditions of instability	: Heat and in the presence of oxidizing agents.
Incompatibility with various substances	: Reactive or incompatible with oxidizing agents.
Hazardous decomposition products	: No data available.
Hazardous polymerization	: Will not occur.

11 Toxicological information

Toxicity to Animals	: No data available.
Chronic effects on humans	: No additional remark.
Other toxic effects on humans	: No specific information is available in our database regarding the other toxic effects of this material for humans.
Special remarks on toxicity to animals	: No additional remark.
Special remarks on chronic effects on humans	: No additional remark.
Special remarks on other toxic effects on humans	: No additional remark.

12 Ecological information

Ecotoxicity	: No data available.
BOD and COD	: No data available.
Biodegradable/OECD	: Easily biodegradable.
Mobility	: No data available.
Products of degradation	: These products are Carbon oxides (CO, CO ₂) and water, nitrogen oxides (NO, NO ₂ ...).
Toxicity of the products of biodegradation	: No data available
Special remarks on the products of biodegradation	: No additional remark.





13 Disposal considerations

Waste information : Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Waste stream : Not data available.

Consult your local or regional authorities.

14 Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	UN 1971	NATURAL GAS, COMPRESSED, with high methane content.	DOT Class 2.1: Flammable gas.			-
TDG Classification	UN 1971	NATURAL GAS, COMPRESSED, with high methane content.	TDG Class 2.1: Flammable gas.			
IMDG Class	UN 1971	NATURAL GAS, COMPRESSED, with high methane content.	IMDG Class 2.1: Flammable gas.			-
IATA-DGR Class	UN 1971	NATURAL GAS, COMPRESSED, with high methane content.	IATA Class 2.1: Flammable gas.			-

15 Regulatory information

HCS classification : Class: Flammable gas.

U.S. Federal regulations : TSCA 8(b) inventory: Methane; Ethane; Nitrogen; Propane

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: No products were found.

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.

SARA 313 toxic chemical notification and release reporting: No products were found.

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean air act (CAA) 112 accidental release prevention: Methane; Ethane; Propane

Clean air act (CAA) 112 regulated flammable substances: Methane; Ethane; Propane

Clean air act (CAA) 112 regulated toxic substances: No products were found.

State regulations : Rhode Island RTK hazardous substances: Methane; Ethane; Nitrogen; Propane

Pennsylvania RTK: Methane; Ethane; Nitrogen; Propane

Florida: Nitrogen

Minnesota: Methane; Ethane; Nitrogen; Propane

Massachusetts RTK: Methane; Ethane; Nitrogen; Propane

New Jersey: Methane; Ethane; Propane

New Jersey spill list: Methane; Ethane; Nitrogen; Propane

California prop. 65: No products were found.

EU Regulations

Hazard symbol(s) :



Classification : Extremely flammable

Risk phrases : R12- Extremely flammable.

Safety phrases : S9- Keep container in a well-ventilated place.
S16- Keep away from sources of ignition - No smoking.
S33- Take precautionary measures against static discharges.

EINECS Number : 200-812-7 (Methane), 200-814-8 (Ethane), 231-783-9 (Nitrogen gas) and 200-827-9 (Propane).

16 Other information

National Fire Protection Association (U.S.A.)



References :

- Hawley, G.G.. The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987.
- SAX, N.I. Dangerous Properties of Industrial Materials. Toronto, Van Nostrand Reinold, 6e ed. 1984.
- The Sigma-Aldrich Library of Chemical Safety Data, Edition II.
- Guide de la loi et du règlement sur le transport des marchandises dangereuses au Canada. Centre de conformité international Ltée. 1986.
- Chemical Hazards Response Information System.
- Hazardous Substances Data Bank.

Other special considerations : No additional remark.

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Verified by : Albert George.

Notice to reader

This MSDS summarises at the date of issue our best knowledge of the health, safety and environmental hazard information related to the product, and in particular how to safely handle, use, store and transport the product in the workplace. Since SASOL and its subsidiaries cannot anticipate or control the conditions under which the product may be handled, used, stored or transported, each user must, prior to usage, review this MSDS in the context of how the user intends to handle, use, store or transport the product in the workplace and beyond, and communicate such information to all relevant parties. If clarification or further information is needed to ensure that an appropriate assessment can be made, the user should contact this company.

We shall not assume any liability for the accuracy or completeness of the information contained herein or any advice given unless there has been gross negligence on our part. In such event our liability shall be limited only to direct damages suffered. Our responsibility for product as sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available upon request. All risk associated with the possession and application of the product passes on delivery.