

## Safety Data Sheet

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### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1 Product Identifier

**Material Name** : Natural gas, dried

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Product Use** : Fuel. Raw material.

**Uses Advised Against** : This product must not be used in applications other than those recommended in Section 1, without first seeking the advice of the supplier.

#### 1.3 Details of the supplier of the substance or mixture

**Manufacturer/Supplier** : **Shell Austria Gesellschaft m.b.H.**  
Lobgrundstraße 3  
1220 Wien  
Austria

**Telephone** : +43 1 79797 - 0

**Email Contact for** : sat-bgv@shell.com

**MSDS**

#### 1.4 Emergency Telephone Number

: gas emergency number number +43 128  
+43 1 79797 - 2444

#### 1.5 Other Information

: This product is exempt from the obligation to register under REACH in accordance with Article 2(7)(b).

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### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of substance or mixture

Regulation (EC) No 1272/2008 (CLP)	
Hazard classes / Hazard categories	Hazard Statement
Flammable Gas, Category 1	H220
Gases under pressure, Compressed gas	H280

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67/548/EEC or 1999/45/EC	
Hazard Characteristics	R-phrases(s)
Extremely flammable.	R12

### 2.2 Label Elements

#### Labeling according to Regulation (EC) No 1272/2008

**Symbol(s)**

:

**Signal Words**

: Danger

**CLP Hazard Statements**: PHYSICAL HAZARDS:  
H220: Extremely flammable gas.  
H280: Contains gas under pressure; may explode if heated.

## HEALTH HAZARDS:

Not classified as a health hazard under CLP criteria.

## ENVIRONMENTAL HAZARDS:

Not classified as environmental hazard according to CLP criteria.

**CLP Precautionary statements****Prevention**: P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P243: Take precautionary measures against static discharge.  
P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381: Eliminate all ignition sources if safe to do so.**Storage**

: P410+P403: Protect from sunlight. Store in a well-ventilated place.

**Labeling according to Directive 1999/45/EC/67/548/EEC**

## EC Symbols

: F+ Extremely flammable.

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EC Classification : Extremely flammable.  
 EC Risk Phrases : R12 Extremely flammable.  
 EC 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.

## 2.3 Other Hazards

**Health Hazards** : High gas concentrations will displace available oxygen from the air; unconsciousness and death may occur suddenly from lack of oxygen.  
 Exposure to high gas/vapour concentrations may lead to narcotic or anaesthetic effects that may impair judgement or lead to central nervous system depression.

**Safety Hazards** : In use, may form flammable/explosive vapour-air mixture.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

## 3.1 Substance

CAS No. : 68410-63-9

## 3.2 Mixtures

Preparation Description : Product is not a mixture according to regulation 1907/2006/EC.

## Hazardous Components

## Classification of components according to Regulation (EC) No 1272/2008

Chemical Name	CAS No.	EINECS	REACH Registration No.	Conc.
Natural gas, dried	68410-63-9	270-085-9	Exempt	<= 100,00%

Chemical Name	Hazard Class & Category	Hazard Statement
Natural gas, dried	Flam. Gas, 1; Press. Gas, Compr. Gas;	H220; H280;

## Classification of components according to 67/548/EEC

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Chemical Name	CAS No.	EINECS	REACH Registration No.	Symbol(s)	R-phrases	Conc.
Natural gas, dried	68410-63-9	270-085-9	Exempt	F+	R12	<= 100,00%

**Additional Information** : Refer to chapter 16 for full text of EC R-phrases.

Contains Methane, CAS # 74-82-8 Contains Propane, CAS # 74-98-6 Contains Ethane, CAS # 74-84-0 Contains Butane, CAS # 106-97-8 Contains Pentane, CAS # 109-66-0 Contains Nitrogen, CAS # 7727-37-9. Contains Carbon dioxide, CAS # 124-38-9.

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#### 4. FIRST AID MEASURES

##### 4.1 Description of First Aid Measures

- Inhalation** : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.
- Skin Contact** : Do not remove clothing that adheres to skin due to freezing. In the event of frostbite, slowly warm the exposed area by rinsing with warm water. Otherwise: Obtain medical treatment immediately. Loosen tight clothing. Keep warm and at rest.
- Eye Contact** : In the event of frostbite, slowly warm the exposed area by rinsing with warm water. Otherwise: Flush eyes with water while holding eyelids open. Rest eyes for 30 minutes. If redness, burning, blurred vision, or swelling persist transport to the nearest medical facility for additional treatment.
- Ingestion** : Not applicable.
- 4.2 Most important symptoms/effects, acute & delayed** : Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.
- 4.3 Indication of immediate medical attention and special treatment needed** : Treat symptomatically.  
Administer oxygen if necessary.  
Due to the risk of explosion only use oxygen outside the hazard area.

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#### 5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

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- 5.1 Extinguishing Media** : Shut off supply. If not possible and no risk to surroundings, let the fire burn itself out. Dry chemical or carbon dioxide. For large fires use water spray or fog.
- Unsuitable Extinguishing Media** : Do not use water in a jet. Do not use foam.
- 5.2 Special hazards arising from substance or mixture** : Forms flammable mixture with air. If released, the resulting vapours will disperse with the prevailing wind. If a source of ignition is present where the vapour exists at 4-17% concentration in air, the vapour will burn along the flame front toward the source of the fuel.  
Carbon monoxide may be evolved if incomplete combustion occurs.
- 5.3 Advice for fire-fighters** : Wear full protective clothing and self-contained breathing apparatus.

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## 6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

- 6.1 Personal Precautions, Protective Equipment and Emergency Procedures** : Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area and evacuate all personnel. Attempt to disperse the gas or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas meter.
- 6.2 Environmental Precautions** : Gases volatilize readily in air therefore the product is unlikely to pose a significant hazard to the environment.
- 6.3 Methods and Material for Containment and Clean Up** : Attempt to disperse the gas or to direct its flow to a safe location, for example by using fog sprays.
- Additional Advice** : Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.
- 6.4 Reference to other sections** : For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Material Safety Data Sheet.

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## 7. HANDLING AND STORAGE

- General Precautions** : Take precautionary measures against static discharges.
- 7.1 Precautions for Safe Handling** : Avoid contact with skin, eyes and clothing. Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid

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### 7.2 Conditions for safe storage, including any incompatibilities

sparks.

: Keep away from sources of ignition - No smoking. Keep container tightly closed and in a cool, well-ventilated place. Lighter than air. Intended release of the gas shall be made only by qualified personnel.

Cleaning, inspection and maintenance of storage tanks is a specialist operation, which requires the implementation of strict procedures and precautions. These include issuing of work permits, gas-freeing of tanks, using a manned harness and lifelines and wearing air-supplied breathing apparatus. Prior to entry and whilst cleaning is underway, the atmosphere within the tank must be monitored using an oxygen meter and explosimeter.

### 7.3 Specific End Uses Additional Information

: Not applicable

: Fire hazard classification: C.

Stored and transported in closed systems (pipes, pressure container). Ensure that all local regulations regarding handling and storage facilities are followed.

Storage class according to TRGS 510: 2A.

### Product Transfer

: Earth all equipment.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

If the American Conference of Governmental Industrial Hygienists (ACGIH) value is provided on this document, it is provided for information only.

### 8.1 Control Parameters

#### Occupational Exposure Limits

Material	Source	Type	ppm	mg/m3	Notation
Natural gas, dried	ACGIH	TWA	1.000 ppm		
Methane	ACGIH	TWA	1.000 ppm		
Ethane	ACGIH	TWA	1.000 ppm		
Propane	MAK (AT)	MAK	1.000 ppm	1.800 mg/m3	
	MAK (AT)	MAK CEIL	2.000 ppm	3.600 mg/m3	
	ACGIH	TWA	1.000 ppm		
Butane	MAK (AT)	MAK	800 ppm	1.900 mg/m3	

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	MAK (AT)	MAK CEIL	1.600 ppm	3.800 mg/m3	
	ACGIH	TWA	1.000 ppm		
Pentane	MAK (AT)	MAK	600 ppm	1.800 mg/m3	
	MAK (AT)	MAK CEIL	1.200 ppm	3.600 mg/m3	
	ACGIH	TWA	600 ppm		
Nitrogen	ACGIH				Included in the regulation but with no data values. See regulation for further details
Carbon dioxide	MAK (AT)	MAK	5.000 ppm	9.000 mg/m3	
	MAK (AT)	MAK CEIL	10.000 ppm	18.000 mg/m3	
	ACGIH	TWA	5.000 ppm		
	ACGIH	STEL	30.000 ppm		

**Biological Exposure Index (BEI)**

No biological limit allocated.

**Derived No Effect Levels (DNEL)** : Not applicable.

**PNEC related information** : Exposure assessments have not been presented for the environment therefore PNEC values not required.

**8.2 Exposure Controls**

**General Information** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate explosion-proof

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ventilation to control airborne concentrations below the exposure guidelines/limits.

### Occupational Exposure Controls

- Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
- Eye Protection** : Eye protection is not required under normal conditions of use.
- Hand Protection** : Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact. Always seek advice from glove suppliers. Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: Neoprene rubber. Nitrile rubber.
- Body protection** : Wear antistatic and flame retardant clothing.
- Respiratory Protection** : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. Where respiratory protective equipment is required, use a full-face mask. All respiratory protection equipment and use must be in accordance with local regulations. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for organic gases and vapours [boiling point <65°C (149°F)] meeting EN14387.
- Thermal Hazards** : Not applicable.
- Monitoring Methods** : Monitoring the oxygen content of the air is often the best means of ensuring safety. There are substantial risks if the concentration of oxygen in the atmosphere varies from the normal (20.8%) under normal atmospheric pressure.

### Environmental Exposure Controls

- Environmental exposure control measures** : Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- Appearance : Colourless.



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Odour	: Odourless. Typical gas smell due to addition of odouriser to allow the detection of product leaks..
pH	: Not applicable.
Initial Boiling Point and Boiling Range	: -195 °C / -319 °F -155 °C / -247 °F
Pour point	: Data not available
Flash point	: -187 °C / -305 °F
Upper / lower Flammability or Explosion limits	: >= 4 %(V) <= 17 %(V)
Auto-ignition temperature	: 575 - 640 °C / 1.067 - 1.184 °F
Vapour pressure	: Data not available
Specific gravity	: >= 0,54 <= 0,75
Density	: 0,7 - 1,0 kg/m <sup>3</sup>
Bulk density	: Data not available
Water solubility	: 0,03 - 0,08 g/l at 25 °C / 77 °F
Solubility in other solvents	: Data not available
n-octanol/water partition coefficient (log Pow)	: Typical 0,28
Dynamic viscosity	: Data not available
Kinematic viscosity	: Not applicable.
Evaporation rate (nBuAc=1)	: Data not available
Flammability	: Flammable Gas

### 9.2 Other Information

Other Information : Not applicable.

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## 10. STABILITY AND REACTIVITY

<b>10.1 Reactivity</b>	: No, product will not become self-reactive.
<b>10.2 Chemical Stability</b>	: Stable under normal use conditions.
<b>10.3 Possibility of Hazardous Reactions</b>	:
<b>10.4 Conditions to Avoid</b>	: No, hazardous, exothermic polymerization cannot occur. Heat, flames, and sparks. May form explosive mixture on contact with air.
<b>10.5 Incompatible Materials</b>	: Strong oxidising agents.
<b>10.6 Hazardous Decomposition Products</b>	: Hazardous decomposition products are not expected to form during normal storage.

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### 11. TOXICOLOGICAL INFORMATION

#### 11.1 Information on Toxicological effects

<b>Basis for Assessment</b>	:	Information given is based on product testing.
<b>Likely Routes of Exposure</b>	:	Inhalation is the primary route of exposure although exposure may occur through skin or eye contact.
<b>Acute Oral Toxicity</b>	:	Not applicable.
<b>Acute Dermal Toxicity</b>	:	Not applicable.
<b>Acute Inhalation Toxicity</b>	:	LC50 >20 mg/l / 4 h, Rat
<b>Skin Corrosion/Irritation</b>	:	Not expected to be a hazard.
<b>Serious Eye Damage/Irritation</b>	:	Essentially non-irritating to eyes.
<b>Respiratory Irritation</b>	:	Not expected to be a respiratory irritant.
<b>Respiratory or Skin Sensitisation</b>	:	Not expected to be a sensitiser.
<b>Aspiration Hazard</b>	:	Not considered an aspiration hazard.
<b>Germ Cell Mutagenicity</b>	:	Not considered a mutagenic hazard.
<b>Carcinogenicity</b>	:	Not expected to be carcinogenic.
<b>Reproductive and Developmental Toxicity</b>	:	Not expected to impair fertility. Not a developmental toxicant.
<b>Specific target organ toxicity - single exposure</b>	:	High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.
<b>Specific target organ toxicity - repeated exposure</b>	:	Low systemic toxicity on repeated exposure.
<b>Additional Information</b>	:	High gas concentrations will displace available oxygen from the air; unconsciousness and death may occur suddenly from lack of oxygen. Exposure to very high concentrations of similar materials has been associated with irregular heart rhythms and cardiac arrest.

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### 12. ECOLOGICAL INFORMATION

<b>Basis for Assessment</b>	:	Incomplete ecotoxicological data are available for this product. The information given below is based partly on a knowledge of the components and the ecotoxicology of similar products.
<b>12.1 Toxicity</b>	:	
<b>Acute Toxicity</b>	:	Physical properties indicate that hydrocarbon gases will rapidly volatilise from the aquatic environment and that acute and chronic effects would not be observed in practice.

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- 12.2 Persistence and degradability** : Expected to be inherently biodegradable. Oxidises rapidly by photo-chemical reactions in air.
- 12.3 Bioaccumulative Potential** : Not expected to bioaccumulate significantly.
- 12.4 Mobility** : Because of their extreme volatility, air is the only environmental compartment that hydrocarbon gases will be found.
- 12.5 Result of the PBT and vPvB assessment** : The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.
- 12.6 Other Adverse Effects** : Has the potential to contribute to Global Warming.

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### 13. DISPOSAL CONSIDERATIONS

#### 13.1 Waste Treatment Methods

- Material Disposal** : Do not discharge into areas where there is a risk of forming an explosive mixture with air.
- Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.  
EU Waste Disposal Code (EWC): 16 05 04 gases in pressure containers (including halons) containing dangerous substances.  
Classification of waste is always the responsibility of the end user.

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### 14. TRANSPORT INFORMATION

#### Land transport (ADR/RID):

##### ADR

- 14.1 UN No. : 1971
- 14.2 UN Proper Shipping Name : NATURAL GAS, COMPRESSED
- 14.3 Transport Hazard Class : 2
- 14.4 Packing group : Not applicable.
- Danger label (primary risk) : 2.1

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14.5 Environmental Hazard : No

14.6 Special Precautions for user : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

**RID**

14.1 UN No. : 1971

14.2 UN Proper Shipping Name : NATURAL GAS, COMPRESSED

14.3 Transport Hazard Class : 2

14.4 Packing group : Not applicable.

Danger label (primary risk) : 2.1

14.5 Environmental Hazard : No

14.6 Special Precautions for user : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

**Inland waterways transport (ADN):**

14.1 UN No. : 1971

14.2 UN Proper Shipping Name : NATURAL GAS, COMPRESSED

14.3 Transport Hazard Class : 2

14.4 Packing group : Not applicable.

Danger label (primary risk) : 2.1

14.5 Environmental Hazard : No

14.6 Special Precautions for user : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

**Sea transport (IMDG Code):**

14.1 UN No. : UN 1971

14.2 UN Proper Shipping Name : NATURAL GAS, COMPRESSED

14.3 Transport Hazard Class : 2.1

14.4 Packing group : Not applicable.

14.5 Marine pollutant : No

14.6 Special Precautions for user : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or

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needs to comply with in connection with transport.

### Air transport (IATA):

- 14.1 UN No. : 1971  
14.2 UN Proper Shipping Name : Natural gas, compressed  
14.3 Transport Hazard Class : 2.1  
14.4 Packing group : Not applicable.  
14.6 Special Precautions for user : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

### Sea (Annex II of MARPOL 73/78 and the IBC code)

- Pollution Category : Not applicable.  
Ship Type : Not applicable.  
Product Name : Not applicable.  
Special Precaution : Not applicable.

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## 15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### Other regulatory Information

#### National Legislation

- Water Pollution Class : nwg - non-hazardous to water (appendix 1, VwVwS, substances).  
Other Information : Technische Anleitung Luft: Product not listed by name. Observe section 5.2.5 in connection with section 5.4.9  
15.2 Chemical Safety Assessment : No chemical safety assessment has been performed for this substance.

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## 16. OTHER INFORMATION

### R-phrases(s)

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R12                   Extremely flammable.

### CLP Hazard Statements

H220               Extremely flammable gas.

H280               Contains gas under pressure; may explode if heated.

### Identified Uses according to the Use Descriptor System

**Recommended Restrictions on Use (Advice Against)**               : This product must not be used in applications other than those recommended in Section 1, without first seeking the advice of the supplier.

### Other Information

**MSDS Distribution**                                                       : The information in this document should be made available to all who may handle the product.

**MSDS Version Number**                                                   : 1.2

**MSDS Effective Date**                                                    : 15.11.2011

**MSDS Revisions**                                                         : A vertical bar (|) in the left margin indicates an amendment from the previous version.

**MSDS Regulation**                                                        : Regulation 1907/2006/EC

**Disclaimer**                                                                   : This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.