

# SAFETY DATA SHEET

N2 14 %;CH4 86 %

 Issue Date:
 20.12.2012

 Last revised date:
 19.01.2017

Version: 1.0

SDS No.: 000010012557 1/15

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier	1.1	Product	identifier	
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Product name:	N2 14 %;CH4 86 %
Trade name:	G25
Other Name:	G25 (EN 437)

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

Identified uses:Industrial and professional. Perform risk assessment prior to use.Uses advised againstConsumer use.

#### 1.3 Details of the supplier of the safety data sheet

Supplier	
Linde Gas GmbH	Telephone: +43 50 4273
Carl-von-Linde-Platz 1	
A-4651 Stadl-Paura	

E-mail: office@at.linde-gas.com

1.4 Emergency telephone number: Emergency number Linde: + 43 50 4273 (during business hours), Poisoning Information Center: +43 1 406 43 43

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Directive 67/548/EEC or 1999/45/EC as amended.

F+; R12

The full text for all R-phrases is displayed in section 16.

#### Classification according to Regulation (EC) No 1272/2008 as amended.

#### **Physical Hazards**

Flammable gas	Category 1	H220: Extremely flammable gas.
Gases under pressure	Compressed gas	H280: Contains gas under pressure; may explode if heated.



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2.2 Label Elements



Signal Words:	Danger
Hazard Statement(s):H220: Extremely flammable gas.H280: Contains gas under pressure; may explode if heated.	
Precautionary Statement	
Prevention:	P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Response:	P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381: Eliminate all ignition sources if safe to do so.
Storage:	P403: Store in a well-ventilated place.
Disposal:	None.
2.3 Other hazards:	None.

## SECTION 3: Composition/information on ingredients

## 3.2 Mixtures

Chemical name	Chemical formula	Concentration	CAS-No.	EC No.	REACH Registration No.	Notes
Nitrogen	N2	14%	7727-37-9	231-783-9	Listed in Annex IV/V of Regulation (EC) No 1907/2006 (REACH), exempted from registration.	
Methane	CH4	86%	74-82-8	200-812-7	01-2119474442-39	

The concentrations of the components in the SDS header, product name on page one and in section 3.2 are in mol due to regulatory requirements. All concentrations are nominal.

# # This substance has workplace exposure limit(s).

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.



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#### Classification

Chemical name	Classificatio	Classification	
Nitrogen	DSD:	none	
	CLP:	Press. Gas Compr. Gas;H280	
Methane	DSD:	F+; R12	
	CLP:	Flam. Gas 1;H220, Press. Gas Compr. Gas;H280	Note U

DSD: Directive 67/548/EEC.

CLP: Regulation No. 1272/2008.

Note U: When put on the market gases have to be classified as 'Gases under pressure', in one of the groups compressed gas, liquefied gas, refrigerated liquefied gas or dissolved gas. The group depends on the physical state in which the gas is packaged and therefore has to be assigned case by case.

The full text for all R-phrases and H-statements is displayed in section 16.

SECTION 4: First aid measures	
General:	In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
4.1 Description of first aid measures	
Inhalation:	In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
Eye contact:	Adverse effects not expected from this product.
Skin Contact:	Adverse effects not expected from this product.
Ingestion:	Ingestion is not considered a potential route of exposure.
4.2 Most important symptoms and effects, both acute and delayed:	Respiratory arrest.
4.3 Indication of any immediate med	dical attention and special treatment needed
Hazards:	None.
Treatment:	None.

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# SECTION 5: Firefighting measures

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General Fire Hazards:	Heat may cause the containers to explode.
5.1 Extinguishing media Suitable extinguishing media:	Water. Dry powder. Foam.
Unsuitable extinguishing media:	Carbon Dioxide.
5.2 Special hazards arising from the substance or mixture:	Incomplete combustion may form carbon monoxide
5.3 Advice for firefighters	
Special fire fighting procedures:	In case of fire: Stop leak if safe to do so. Do not extinguish flames at leak because possibility of uncontrolled explosive reignition exists. Continue water spray from protected position until container stays cool. Use extinguishants to contain the fire. Isolate the source of the fire or let it burn out.
Special protective equipment for fire-fighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Guideline: EN 469 Protective clothing for firefighters. Performance requirements for protective clothing for firefighting. EN 15090 Footwear for firefighters. EN 659 Protective gloves for firefighters. EN 443 Helmets for fire fighting in buildings and other structures. EN 137 Respiratory protective devices - Self-contained opencircuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.

# SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:	Evacuate area. Provide adequate ventilation. Consider the risk of potentially explosive atmospheres . Eliminate all ignition sources if safe to do so. Monitor the concentration of the released product. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. EN 137 Respiratory protective devices - Self-contained open-circuit compressed air breathing apparatus with full face mask - Requirements, testing, marking.
6.2 Environmental Precautions:	Prevent further leakage or spillage if safe to do so.
6.3 Methods and material for containment and cleaning up:	Provide adequate ventilation. Eliminate sources of ignition.
6.4 Reference to other sections:	Refer to sections 8 and 13.

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#### SECTION 7: Handling and storage:

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7.1 Precautions for safe handling: Only experienced and properly instructed persons should handle gases under pressure. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Purge system with dry inert gas (e.g. helium or nitrogen) before gas is introduced and when system is placed out of service. Purge air from system before introducing gas. Containers, which contain or have contained flammable or explosive substances, must not be inerted with liquid carbon dioxide. Assess the risk of a potentially explosive atmosphere and the need for suitable equipment i.e. explosion-proof. Take precautionary measures against static discharges. Keep away from ignition sources (including static discharges). Provide electrical earthing of equipment and electrical equipment usable in explosive atmospheres. Use only non-sparking tools. Refer to supplier's handling instructions. The substance must be handled in accordance with good industrial hygiene and safety procedures. Ensure the complete system has been (or is regularly) checked for leaks before use. Protect containers from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the container contents. When moving containers, even for short distances, use appropriate equipment eq. trolley, hand truck, fork truck etc. Secure cylinders in an upright position at all times, close all valves when not in use. Provide adequate ventilation. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Avoid suckback of water, acid and alkalis. Keep container below 50°C in a well ventilated place. Observe all regulations and local requirements regarding storage of containers. When using do not eat, drink or smoke. Store in accordance with local/regional/national/international regulations. Never use direct flame or electrical heating devices to raise the pressure of a container. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Damaged valves should be reported immediately to the supplier Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Keep container valve outlets clean and free from contaminates particularly oil and water. If user experiences any difficulty operating container valve discontinue use and contact supplier. Never attempt to transfer gases from one container to another. Container valve guards or caps should be in place. 7.2 Conditions for safe storage, All electrical equipment in the storage areas should be compatible with the risk of including any incompatibilities: a potentially explosive atmosphere. Segregate from oxidant gases and other oxidants being stored. Containers should not be stored in conditions likely to encourage corrosion. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible material. 7.3 Specific end use(s): None.



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# SECTION 8: Exposure controls/personal protection

8.1 Control Parameters Occupational Exposure Limits	
	None of the components have assigned exposure limits.
8.2 Exposure controls Appropriate engineering controls:	Consider a work permit system e.g. for maintenance activities. Ensure adequate air ventilation. Provide adequate general and local exhaust ventilation. Keep concentrations well below lower explosion limits. Gas detectors should be used when quantities of flammable gases or vapours may be released. Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Systems under pressure should be regularly checked for leakages. Product to be handled in a closed system. Only use permanent leak tight installations (e.g. welded pipes). Take precautionary measures against static discharges.
Individual protection measures, s	such as personal protective equipment
General information:	A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Keep self contained breathing apparatus readily available for emergency use. Personal protective equipment for the body should be selected based on the task being performed and the risks involved. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment. Do not eat, drink or smoke when using the product.
Eye/face protection:	Wear eye protection to EN 166 when using gases. Guideline: EN 166 Personal Eye Protection.
Skin protection Hand Protection:	Wear working gloves while handling containers Guideline: EN 388 Protective gloves against mechanical risks.
Body protection:	Wear fire/flame resistant/retardant clothing. Guideline: ISO/TR 2801:2007 Clothing for protection against heat and flame General recommendations for selection, care and use of protective clothing.
Other:	Wear safety shoes while handling containers Guideline: ISO 20345 Personal protective equipment - Safety footwear.
<b>Respiratory Protection:</b>	Not required.
Thermal hazards:	No precautionary measures are necessary.
Hygiene measures:	Specific risk management measures are not required beyond good industrial hygiene and safety procedures. Do not eat, drink or smoke when using the product.



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Environmental exposure controls:

For waste disposal, see section 13 of the SDS.

## **SECTION 9: Physical and chemical properties**

9.1 Information on basic physical and chemical properties

Appearance	
Physical state:	Gas
Form:	Compressed gas
Color:	N2: Colorless CH4: Colorless
Odor:	N2: Odorless gas CH4: Odorless
Odor Threshold:	Odor threshold is subjective and is inadequate to warn of over exposure.
pH:	not applicable.
Melting Point:	No data available.
Boiling Point:	No data available.
Sublimation Point:	not applicable.
Critical Temp. (°C):	No data available.
Flash Point:	Not applicable to gases and gas mixtures.
Evaporation Rate:	Not applicable to gases and gas mixtures.
Flammability (solid, gas):	This product is not flammable.
Flammability Limit - Upper (%):	not applicable.
Flammability Limit - Lower (%):	not applicable.
Vapor pressure:	No reliable data available.
Vapor density (air=1):	0,62 (calculated) (15 °C)
Relative density:	No data available.
Solubility(ies)	
Solubility in Water:	No data available.
Partition coefficient (n-octanol/water):	Not known.
Autoignition Temperature:	not applicable.
Decomposition Temperature:	Not known.
Viscosity	
Kinematic viscosity:	No data available.
Dynamic viscosity:	No data available.
Explosive properties:	Not applicable.
Oxidizing properties:	not applicable.
9.2 Other information:	None.



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# SECTION 10: Stability and reactivity

10.1 Reactivity:	No reactivity hazard other than the effects described in sub-section below.
10.2 Chemical Stability:	Stable under normal conditions.
10.3 Possibility of hazardous reactions:	Can form a potentially explosive atmosphere in air. May react violently with oxidants.
10.4 Conditions to avoid:	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
10.5 Incompatible Materials:	Air and oxidizers. For material compatibility see latest version of ISO-11114.
10.6 Hazardous Decomposition Products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

# SECTION 11: Toxicological information

General information:	None.	
11.1 Information on toxicological effe	ects	
Acute toxicity - Oral Product	Based on available data, the classification criteria are not met.	
Acute toxicity - Dermal Product	Based on available data, the classification criteria are not met.	
Acute toxicity - Inhalation Product	Based on available data, the classification criteria are not met.	
Repeated dose toxicity Component Information Methane	NOAEL (Rat(Female, Male), Inhalation, 13 Weeks): 10.000 ppm(m) Inhalation Read-across based on grouping of substances (category approach), Key study	
Skin Corrosion/Irritation Product	Based on available data, the classification criteria are not met.	
Serious Eye Damage/Eye Irritati Product	<b>on</b> Based on available data, the classification criteria are not met.	
Respiratory or Skin Sensitization Product	Based on available data, the classification criteria are not met.	



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Germ Cell Mu Product	itagenicity	Based on available data, the classification crite	eria are not met.
<b>In vitro Componen</b> Methane	t Information	Chromosome aberration (OECD Guideline 473 Aberration Test)): Negative.	(In Vitro Mammalian Chromosome
<b>In vivo Componen</b> Methane	t Information	Drosophila Sex-Linked Recessive Lethal Assay	(SLRL) test: Negative.
Carcinogenic Product	ity	Based on available data, the classification crit	eria are not met.
Reproductive Product	e toxicity	Based on available data, the classification crite	eria are not met.
	e toxicity (Fertility t Information	Gestation: Rat Inhalation (OECD Guideline 422 Study with the Reproduction / Developmenta NOAEC: 9.000 ppm Fertility: Rat Inhalation (OECD Guideline 422 ( Study with the Reproduction / Developmenta NOAEC: 3.000 ppm	I Toxicity Screening Test)) Combined Repeated Dose Toxicity
	tal toxicity (Terato t Information	ogenicity)	
Methane		Rat Inhalation (OECD Guideline 422 (Combined with the Reproduction / Developmental Toxic NOAEC: 9.000 ppm	
Specific Targ Product	et Organ Toxicity -	Single Exposure Based on available data, the classification crite	eria are not met.
Specific Targ Product	et Organ Toxicity -	Repeated Exposure Based on available data, the classification crite	eria are not met.
Aspiration Ha Product	azard	Not applicable to gases and gas mixtures	



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# SECTION 12: Ecological information

12.1 Toxicity	
Acute toxicity Product	No ecological damage caused by this product.
Acute toxicity - Fish Component Information Methane	LC 50 (Various, 96 h): 27,98 mg/I (QSAR) Remarks: QSAR QSAR, Key study
Acute toxicity - Aquatic Invertel Component Information Methane	orates LC 50 (Daphnid, 48 h): 27,14 mg/I (QSAR) Remarks: QSAR QSAR, Key study
Toxicity to microorganisms Component Information Methane	EC 50 (Alga, 96 h): 19,37 mg/l Not harmful to microorganisms
12.2 Persistence and Degradability Product	Not applicable to gases and gas mixtures
Biodegradation Component Information Methane	100 %
12.3 Bioaccumulative Potential Product	The product is expected to biodegrade and is not expected to persist for long periods in an aquatic environment.
12.4 Mobility in Soil Product	Because of its high volatility, the product is unlikely to cause ground or water pollution.
<b>Component Information</b> Methane	Henry's Law Constant: 3.690 MPa (25 °C)
12.5 Results of PBT and vPvB assessment Product	Not classified as PBT or vPvB.



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12.6 Other Adverse	Effects:		
Global Warmir	ng Potential	Global warming potential: 19,5 When discharged in large quantities may c	contribute to the greenhouse effect.
<b>Component</b> Methane	Information	EU. Annexes I, II (F-gases subject to emissio mixture calculations), Reg. 517/2014/EU o	

- Global warming potential: 25 100-yr

SECTION 13: Disposal considerat	ions
13.1 Waste treatment methods	
General information:	Do not discharge into any place where its accumulation could be dangerous. Consult supplier for specific recommendations. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor.
Disposal methods:	Refer to the EIGA code of practice (Doc. 30 "Disposal of Gases", downloadable at http://www.eiga.org) for more guidance on suitable disposal methods. Dispose of container via supplier only. Discharge, treatment, or disposal may be subject to national, state, or local laws.

European Waste Codes		
Container:	16 05 04*:	Gases in pressure containers (including halons) containing
		dangerous substances.

# SECTION 14: Transport information

ADR	
14.1 UN Number:	UN 1954
14.2 UN Proper Shipping Name:	COMPRESSED GAS, FLAMMABLE, N.O.S. (Methane, Nitrogen)
14.3 Transport Hazard Class(es)	
Class:	2
Label(s):	2.1
Hazard No. (ADR):	23
Tunnel restriction code:	(B/D)
14.4 Packing Group:	-
14.5 Environmental hazards:	not applicable
14.6 Special precautions for user:	-



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UN 1954
COMPRESSED GAS, FLAMMABLE, N.O.S. (Methane, Nitrogen)
2
2.1
2.1
-
not applicable
-
UN 1954
COMPRESSED GAS, FLAMMABLE, N.O.S. (Methane, Nitrogen)
······································
2.1
2.1
F-D, S-U
-
not applicable
-
UN 1954
Compressed gas, flammable, n.o.s. (Methane, Nitrogen)
··· [······ 3··· ··· ·· ·· · · · · · · ·
2.1
2.1
2.1
-
not applicable
-
Forbidden.
Allowed.

# 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: not applicable

Additional identification:	Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured. Ensure that the container value is closed and not
	are firmly secured. Ensure that the container valve is closed and not
	leaking. Container valve guards or caps should be in place. Ensure adequate air ventilation.



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#### SECTION 15: Regulatory information

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

#### **EU Regulations**

Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use:

Chemical name	CAS-No.	Concentration
Methane	74-82-8	80 - 90%

Directive 96/82/EC (Seveso III): on the control of major accident hazards involving dangerous substances:

Chemical name	CAS-No.	Concentration
Methane	74-82-8	80 - 90%

#### National Regulations

Council Directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers at work Directive 89/686/EEC on personal protective equipment Directive 94/9/EC on equipment and protective systems intended for use in potentially explosive atmospheres (ATEX) Only products that comply with the food regulations (EC) No. 1333/2008 and (EU) No. 231/2012 and are labelled as such may be used as food additives. This Safety Data Sheet has been produced to comply with Regulation (EU) 453/2010.

15.2 Chemical safety assessment: No Chemical Safety Assessment has been carried out.

#### **SECTION 16: Other information**

**Revision Information:** 

Not relevant.



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Key literature refer	ences and	Various sources of data have been used in the compilation of this SDS, they include				
sources for data:			t exclusive to:			
			Toxic Substances and Diseases Reg	JISTRY (ATSDR)		
		(http://www.atsdr.cdc.gov/).				
		European Chemical Agency: Guidance on the Compilation of Safety Data Sheets.				
		European Chemical Agency: Information on Registered Substances				
		http://apps.echa.europa.eu/registered/registered-sub.aspx#search				
		European Industrial Gases Association (EIGA) Doc. 169 Classification and Labelling guide.				
			nal Programme on Chemical Safety (	(http://www.inchem.org/)		
		ISO 10156:2010 Gases and gas mixtures - Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets.				
		Matheson Gas Data Book, 7th Edition.				
				v (NIST) Standard Reference Database		
		National Institute for Standards and Technology (NIST) Standard Reference Database Number 69.				
		The ESIS (European chemical Substances 5 Information System) platform of the				
		former European Chemicals Bureau (ECB) ESIS (http://ecb.jrc.ec.europa.eu/esis/).				
		The European Chemical Industry Council (CEFIC) ERICards.				
		United States of America's National Library of Medicine's toxicology data network				
		TOXNET (ht	ttp://toxnet.nlm.nih.gov/index.htr	nl)		
		Threshold Limit Values (TLV) from the American Conference of Governmental				
		Industrial Hygienists (ACGIH).				
		Substance specific information from suppliers.				
		Details given in this document are believed to be correct at the time of publication.				
Wording of the R-pl	hrases and H-st	atements in	section 2 and 3			
J		H220	Extremely flammable gas.			
		H280	Contains gas under pressure; n	nay explode if heated.		
		R12	Extremely flammable.			
Training information:		Users of breathing apparatus must be trained. Ensure operators understand the				
		flammability hazard.				
Classification accor	ding to Regulat	tion (EC) No 1	1272/2008 as amended.			
	0 0	Flam. Gas	1, H220			
		Press. Gas Compr. Gas, H280				
Other information:		Before using this product in any new process or experiment, a thorough material				
		compatibility and safety study should be carried out. Ensure adequate air ventilation.				
		Ensure all national/local regulations are observed. Ensure equipment is adequately				
		earthed. Whilst proper care has been taken in the preparation of this document, no				
		liability for injury or damage resulting from its use can be accepted.				
Last revised date:	Last revised date: 19.01.2017					
Disclaimer:		This information is provided without warranty. The information is believed to be				
			correct. This information should be used to make an independent determination of			
		the methods to safeguard workers and the environment.				





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