Safety data sheet according to Regulation (EC) No 1907/2006 (REACH) as amended by Reg 8303/2015

Creation date	18.12.2012.	version 1.1
Revision date	29.05.2017.	version 1.9

Section 1: Identification of the substance/mixture and the company/undertaking

1.1. Product identifier

Name	Liquefied Natural Gas (LNG)
CAS Number	95046-41-6
EINECS Number	305-828-9
Registration number	not subject to registration

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

Use	Following the regasification used as gaseous fuel (distributed through gas networks to consumers, used in gas fired power plants, as an alternative motor fuel) or as a chemical feedstock. Liquefied natural gas occupies approximately 600 times smaller volume than gas after regasification and thus it is easier to transport and store. It can be transported by sea over large distances.
Scope of use	Product available for industrial use only

1.3. Details of the supplier of the safety data sheet

Name	PGNiG S.A.
Address	01-224 Warszawa, Poland, 25 Kasprzaka St.
Tel	(+4862) 736 44 41
Fax	(+4862) 736 59 89
Person responsible for the safety data sheet	janusz.brzezicha@pgnig.pl

1.4. Emergency telephone number

992	- Gas Emergency Service
(+4842) 253 84 00	- Inspector for Chemical Substances
(+4842) 253 84 01	
112	- General emergency number
998	- Fire Brigade
999	- Ambulance Service
(+4862) 733 33 62	- PGNiG SA, Branch in Odolanow
(+4822) 691 87 18	- PGNiG SA, Branch Central Testing and Calibration Laboratory

Section 2: Hazards identification

2.1. Classification of the substance or mixture

The substance is classified as hazardous according to Regulation (EC) No 1272/2008

Flam. Gas 1	H220
Press. Gas: Ref. Liq. Gasi	H281

For the explanation of symbols and H statements – see section 16

Hazards to humans resulting from toxic properties and the analysis of effects specific to human health

Not applicable.

Environmental hazards

Not applicable.

Hazards to humans and the environment resulting from physiochemical properties

Flammable liquid gas (hazard category 1).

Pressurised gas: refrigerated liquefied gas. Contains refrigerated gas; may cause cryogenic burns or injury.

2.2. Label elements

The substance requires labelling according to Regulation (EC) No 1272/2008
Pictograms: GHS02

Signal word: Danger.
Hazard statements
H220 Extremely flammable gas.
H281 Contains refrigerated gas; may cause cryogenic burns or injury.
Precautionary statements
P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P282 Wear cold insulating gloves/face shield/eye protection.
P336 Thaw frosted parts with lukewarm water. Do not rub affected area.
P315 Get immediate medical advice/attention.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 Eliminate all ignition sources if safe to do so.
P403 Store in a well-ventilated place.

Labelling elements according to Article 25 and Article 32(6) of Regulation (EC) No 1272/2008: not applicable

2.3. Other hazards

- PBT and vPvB assessment according to Annex XIII of the REACH – not assessed.
- Natural gas forms explosive and flammable mixtures with air (for approximate gas explosion limits see Section 9), is lighter than air, it concentrates in the upper part of confined spaces.
- A rapid decompression of liquefied gas leads to a major temperature decrease and may cause thermal damage to skin and eyes.
- The gas has a suffocating effect on humans by displacing atmospheric oxygen from the air. Insufficient concentration of the oxygen in the air may cause unconsciousness and death (see Section 11).
- Permeating through the soil, natural gas displaces oxygen and thus damages the plant cover.
- It is an aggressive greenhouse gas.

Section 3: Composition/information on ingredients

3.1. Components

Name	Liquefied natural gas
CAS number	95046-41-6
EC number	305-828-9
Index number	not specified

Liquefied natural gas is a multi-component substance with varying composition. It is a complex gaseous mixture of hydrocarbons mainly composed of methane, and generally also containing ethane, propane and some higher hydrocarbons in much lower concentrations, as well as some non-flammable gases such as nitrogen, carbon dioxide and, potentially, helium.
Classification of liquefied natural gas:
according to the cirtieria of Regulation (EC) No 1272/2008:
Flam. Gas 1 H220
Press. Gas: Ref. Liq. Gas H281
For the explanation of the abbreviations, symbols and H statements – see section 16

Section 4: First aid measures

4.1. Description of first aid measures

Inhalation
Move the victim away from source exposure into fresh air. If breathing is difficult, administer artificial respiration and call a doctor. In case of other symptoms (e.g. headache or dizziness) call a doctor. In both cases, oxygen should be administered to the victim by a trained person. Ensure that the victim is kept warm and rests.

Skin contact

Gently remove clothing (do not tear it off by force), softly wipe the affected skin area with lukewarm water, do not use excessively warm water (temperature above 44°C) nor rub the cooled skin. In case of frostbite symptoms (changed skin colour, blisters), apply a sterile dressing and contact a doctor.

Eye contact

In case of an eye damage, apply a sterile dressing and immediately contact an ophthalmologist – ensure specialist medical care for the victim.

Ingestion

Not applicable.

4.2. Most important symptoms and effects, both acute and delayed

The gas is suffocating, inhalation may cause somnolence, breathlessness, accelerated breathing, breathing difficulties, headaches and dizziness, and in case of high gas concentrations – loss of coordination, vomiting, loss of consciousness or death. Cooled liquid or low-temperature gas may cause frostbites on the skin or mucosae, thermal damage of eyes, and exposure to low temperatures causes hypothermia. The symptoms of hypothermia (dangerous drop in body temperature) include: apathy, shivering, mumbled speech, loss of coordination, memory loss, accelerated heart rate.

4.3. Indication of any immediate medical attention and special treatment needed

WARNING! An unconscious patient should be put in the recovery position, a calm shelter should be provided to the poisoned person and they should be protected from heat loss, with their breath and pulse controlled. Never provoke vomiting nor administer anything orally to an unconscious or dazed person.
In case of any serious symptoms immediately call a doctor or take the victim to a hospital.
Persons providing first aid must be equipped with personal protection equipment (depending on the hazard level).

Section 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: dry chemicals, carbon dioxide, foam, water – spray (only as a means of protection of gas tanks against the heat flow).
Unsuitable extinguishing media: do not use water jets, do not direct water at the source of the leak.

5.2. Special hazards arising from the substance or mixture

Immediately after the evaporation the vapours have a very low temperature and higher density than air, they accumulate close to the ground, form a mist and sudden cooling (freezing) of the surroundings.
The gas forms explosive mixtures with air. It is lighter than air and concentrates in the upper part of confined spaces. The ignition or explosion may be caused by sparks or static electricity. Containers and installations exposed to fire or high temperature may explode. It burns with a pale flame, emitting carbon dioxide.

5.3. Advice for firefighters

Shut off gas inflow. Liquefied natural gas spills may be covered with a layer of light foam in order to mitigate excessive vaporisation of the cryogenic liquid and thus minimize the risk of explosion or fire. Gas containers should be removed from the area exposed to a fire hazard, if this is possible without risk to the rescuers' life or health. Containers which were already exposed to fire or high temperature may explode – they should be cooled down with a water spray. Avoid directing water on the fittings. In case of a leaking gas fire, do not extinguish unless the leak can be safely stopped. Control the combustion process to prevent an explosion and excessive influence of the heat flow on the adjacent infrastructure.

Special protective equipment for firefighting personnel

Antistatic gas-tight clothing, goggles, protective gloves and antistatic boots, self-contained breathing apparatus with independent air source.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures:

Remove all ignition sources, extinguish the fire, switch off any equipment which may cause sparking, do not smoke. The gas forms flammable and explosive mixtures with air. It is lighter than air and concentrates in the upper part of confined spaces. An ignition or explosion may be caused by e.g. sparks. An LNG spill and its immediate surroundings constitute explosion hazard zone 0, control the speed of vapour release (slow down it by the means of high expansion foam or blanketing).

In the initial emission phase, liquefied natural gas will cause freezing of the surroundings, sudden and intensive vaporisation, and then will continue to evaporate at a slower rate. At the time of evaporation, it has a very low temperature and, depending on the released quantity, it may cause a significant ambient temperature drop.
Outsiders and unauthorised persons as well as animals should be removed from the spill site and put in a safe, well-ventilated shelter. The site should be marked with warning boards. Individuals assigned to the failure removal operations should be trained and provided with personal protection equipment. Adequate ventilation should be ensured. Avoid breathing in the gas or thermal decomposition products. Avoid direct contact with the released product. Due to its extremely low temperature, liquefied gas may cause crushing of some construction materials.

6.2. Environmental precautions
In case of release of large quantities of the product or environmental contamination, the competent authorities and chemical rescue services should be notified.

6.3. Methods and material for containment and cleaning up
If possible, the leak should be eliminated (gas inflow shut off). Ensure sufficient ventilation of the spillage area.

6.4. Reference to other sections
Personal protection measures – see Section 8.
Wastes should be removed according to the recommendations set out in Section 13.

Section 7: Handling and storage

7.1. Precautions for safe handling
General occupational health and safety principles should be applied when working with the product, specifically those concerning particularly hazardous works and fire protection regulations concerning the performance of hazardous works involving a fire risk (see Section 15). Observe the precautions applicable to works involving substances in extremely low temperatures.
Prior to undertaking the work, employees should be introduced to specific safety precautions and hazardous properties of the substances, including the rules of conduct in case of fire and provision of the first aid.
Avoid a direct skin contact with uninsulated elements of tanks and their fittings. Caution should be taken during all manipulations (pressure reduction, disconnection of manifolds), control the valves and manifolds used for tank filling/emptying. Use the recommended personal protection measures. Avoid liquid/gas releases to the environment.
Immediately after the evaporation the vapours have a very low temperature and higher density than air, they accumulate close to the ground, form a mist and sudden cooling (freezing) of the surroundings. Avoid direct contact with decompressing gas.
Gas may form explosive and flammable mixtures with air. As the vapours warm up to the temperature above -112 °C, they become lighter than the air and concentrate in the upper part of contained spaces. Effective ventilation should be ensured. Concentrations of hazardous components in the air should be kept below the permissible exposure levels and explosion limits. Do not any sparking equipment or tools. Provide protection against electrostatic discharge (grounding, bonding). Do not use open flame and do not smoke. Ventilation and electric installations must conform to the conditions predefined taking into account the risk of fire and explosion.
Do not inhale the product. Use working cloths and the recommended personal protection measures in an antistatic version.

7.2. Conditions for safe storage, including any incompatibilities
Store in cool, fireproof place, provided with mechanical ventilation along the floor and the ceiling, with explosion-proof electric and ventilation installation, prevent the accumulation of static electric charges. Do not store close to the sources of ignition, flammable materials, oxidants. Absolute smoking prohibition. Ensure access to extinguishing and rescue equipment.
Use specially designed containers (cryogenic containers fitted with release valves). During the inspection or cleaning of the containers, monitor the atmosphere for the presence of oxygen and other flammable gases. Do not decompress the containers by releasing their contents to the atmosphere in contained spaces. Store in locked places, protect against unauthorised access. The storerooms should be provided with a built-in gas detection system activating an emergency ventilation system in case of the release of gas to the atmosphere. Do not store together with food, beverages and fodder.

7.3. Specific end use(s) none

Section 8: Exposure controls/personal protection

8.1. Control parameters
8.1.1. Domestic limit values, including legal basis (see Section 15)

8.1.1.1. Domestic maximum acceptable concentration levels in the working environment

The substance is a complex mixture of hydrocarbons. The limits for the acceptable concentration levels of the following hydrocarbon mixtures have been set:

propane:	MPC = 1800 mg/m3	MPIC n/a;
butane:	MPC = 1900 mg/m3	MPIC 3000 mg/m3;
pentane:	MPC = 3000 mg/m3	MPIC n/a.

8.1.2. Currently recommended monitoring procedures for key substances

Methods of testing and measuring noxious agents in the working environment are set out in the applicable Polish Standards as well as international standards, or their equivalents.

propane: PN-Z-04252-1:2012;
butane: PN-Z-04252-1:2012;
pentane: PN-Z-04318:2005.

8.2. Exposure controls

8.2.1. Technical exposure controls

Ensure good ventilation, in case of insufficient ventilation, use respiratory tract protection equipment. Periodic checks should be performed with respect to the container tightness as well as the technical condition of facilities, ventilation systems and protections against the release of substances to the environment.

8.2.2. Personal protection measures such as personal protection equipment (PPE)

Maintain general caution when working with chemicals.
During use, do not eat, do not drink and do not smoke.
Keep the product away from food, beverages and fodder.
Do not inhale the gas or combustion products.
Avoid contact of the product with the skin or eyes.
Perform periodic medical examinations according to the recommended frequency.

a) Eye / face protection: For operations which may result in contact, wear glasses or face visors.
b) Skin protection:
  (i) Hand protection: Wear protective antistatic gloves suitable for operations involving cryogenic liquids.
  (ii) Other: Protective clothing, insulating antistatic boots protecting against extremely low temperatures.
c) Respiratory protection: In case of a prolonged exposure, in case of insufficient ventilation or in emergency, use self-contained breathing apparatus with independent air source.
d) Thermal exposure: Liquefied natural gas has an extremely low temperature which may cause frostbites and irreversible damage to the skin and eyes; the evaporating gas also has an extremely low temperature and causes a significant decrease of the ambient temperature.

8.2.3. Environmental exposure controls

Emissions from ventilation systems and process equipment should be checked in order to assess their compliance with the requirements of the environmental law. The tightness of the natural gas installations and tanks as well as the technical condition of the protections aganist gas release to the environment should also be checked from time to time.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

a)	**appearance**	liquid, colourless
b)	**odour**	odourless
c)	**odour threshold**	not applicable
d)	**pH**	-
e)	**melting/freezing point**	-187°C to -182°C;
f)	**boiling point / boiling range**	-162 °C for methane
g)	**flash point**	-58 °C for methane
h)	**evaporation rate**	not available
i)	**combustibility (of a solid, gas)**	extremely flammable
j)	**upper/lower flammability limit or upper/lower explosion limit**	lower limit 4.4 - 5.35% vol for methane upper limit 14.85 -15% vol for methane
k)	**vapour pressure**	-
l)	**vapour density**	0.727÷1.082 kg/m3 (normal conditions)
m)	**relative vapour density**	1.5 at -162°C 1.0 at -112°C 0.55 at 21 °C
n)	**solubility description**	- virtually insoluble in water, - soluble in organic solvents (e.g. benzene, carbon tetrachloride,

		trichloromethane)
o)	**partition coefficient (n-octanol/water) (log)**	1.09 for methane
p)	**auto-ignition temperature**	560°C
q)	**decomposition temperature**	not available
r)	**viscosity, kinematic**	-
s)	**explosive properties**	gas vapours form explosive mixture with air
t)	**oxidising properties**	not applicable

9.2. Other information

minimum ignition energy E_{min} = 0.25 mJ for methane

Section 10: Stability and reactivity

10.1. Reactivity: reacts with powerful oxidants, extremely flammable gas.

10.2. Chemical stability: substance is stable under normal conditions of use and storage.

10.3. Possibility of hazardous reactions:
- exposure of containers with the substance to high temperatures (possibility of explosion);
- container leakage – gas release (flammable and explosive mixtures may form).

10.4. Conditions to avoid:
- sources of ignition (open flame, installations and equipment which may cause sparks, static electricity);
- heating, high temperatures;
- concentration of vapours and gas in a confined space.

10.5. Incompatible materials: powerful oxidants, e.g. chloranes (V) and (VII) and halogens.

10.6. Hazardous decomposition products none (organic substance – in case of a fire, carbon monoxide is produced, among other things).

Section 11: Toxicological information

11.1. Information on toxicological effects

a) acute toxicity

No data available for natural gas, information available for methane, which is the basic component of natural gas, and for other components do not indicate the need for classification into the acute toxicity category. Natural gas has a suffocating effect (by displacing atmospheric oxygen from the air), inhalation exposure may cause somnolence, breathlessness, accelerated breathing, breathing difficulties, headaches and dizziness, accelerated heartbeat, and in case of high gas concentrations (when oxygen concentration level falls to 18% and below) loss of coordination, nausea, vomiting, loss of consciousness, death. Evaporating gas vapours have an extremely low temperature, may cause cryogenic damage to the skin, eyes, mucosae, respiratory system, general hypothermia.

Lethal and toxic doses and concentration levels for humans: not available

Odour detection threshold: not available

b) caustic/irritating effect on the skin

Caustic effect of the gas on the skin has not been observed but, do to an extremely low temperature, the liquid and the vapours may cause frostbite.

c) serious eye damage/irritation

No irritating effect of the gas on the eyes has not been observed but, do to an extremely low temperature, the liquid and the vapours may cause cryogenic damage to the eyes.

d) respiratory or skin sensitization

Not classified as sensitizer. In some cases exposure may cause increased allergic reactions to other chemicals as well as asthmatic troubles.

e) germ cell mutagenicity

Based on the existing research on natural gas and the knowledge of the properties of its components, it was concluded that natural gas does not exhibit mutagenicity.

f) carcinogenicity

Based on the existing research on natural gas and the knowledge of the properties of its components, it was concluded that natural gas does not exhibit carcinogenicity.

g) reproductive toxicity

Based on the existing research on natural gas and the knowledge of the properties of its components, it was concluded that natural gas does not exhibit reproductive toxicity.

h) specific target organ toxicity – single exposure

No data available for the product, the analysis of the content and component properties does not indicate the need for classification to this hazard class.

i) specific target organ toxicity – repeated exposure
No data available for the product, the analysis of the content and component properties does not indicate the need for classification to this hazard class.
j) aspiration hazard
not applicable (gas).

Section 12: Ecological information

12.1. Toxicity no tests have been performed on the substance (gas). The assessment of toxicity to the aquatic environment is based on the data for the maximum determined content of aliphatic hydrocarbons C7 and C8 in the gas (substances hazardous to the aquatic environment - chronic hazard, category 1) and C5 and C6 (substances hazardous to the aquatic environment - chronic hazard, category 2). On this basis, it was assessed that the product does not require to be classified as a substance hazardous to the aquatic environment. It should be underline that the contamination of waters is rather unlikely due to quick evaporation and transition into gaseous state in the ambient temperature.
12.2. Persistence and degradability methane is considered a to be an environmentally persistent substance, in the air it is prone to photochemical decomposition (half-life period approx. 6 years), in soil it is decomposed with the aid of soil bacteria.
12.3. Bioaccumulative potential methane is not accumulated in living organisms nor the thropic chain
12.4. Mobility in soil: volatile substance – when released to the atmosphere, natural gas quickly evaporates, propagates in the air, and easily permeates to the air from soil or water.
12.5. Results of PBT and vPvB assessment not assessed
12.6. Other adverse effects: spills of liquid gas may cause a drastic decline of the temperature and freezing of the environment.

Natural gas (and specifically its main component - methane) is one of the greenhouse gasses (e.g. as a result of the evaporation from leaking installations).
Permeating through the soil, natural gas displaces oxygen and thus damages the plant cover.

Section 13: Disposal considerations

13.1. Waste treatment methods
No waste is produced as a result of the use of natural gas as a fuel. Spills are dispersed in the atmosphere. Containers for liquid gas are treated as waste.
Disposal of collected waste takes place according to the applicable regulations (see Section 15). The utilisation of the product or its derivative products should in any case conform to the applicable environmental requirements and the relevant legislation as well as the requirements of local authorities.
Packaging: recovery, recycling or disposal of waste packaging produced in the course of industrial use should be done according to the applicable regulations. Utilisation of transportation containers or other contaminated containers or equipment should be carried out by authorised persons in a manner which does not present an environmental hazard.
References to community / national regulations
1. *The Act on Waste of 14 December 2012 (for consolidated text see Journal of Laws of 2016, item 1987 as amended).*
2. *Regulation of the Minister of Environment of 09 December 2014 on the catalogue of waste (Journal of Laws of 2014, item 1923).*

Waste classification according to the European Waste Catalogue (EWC)
Waste is classified according to the source of their origination, therefore the wast code may change depending on how and where the waste is produced. Detailed waste code should be assigned taking into account how and where the waste was produced and the degree of its contamination.

16 05 04*	gases in pressure containers (including halons) containing dangerous substances (group 16, subgroup 16 05 - gases in pressure containers and discarded chemicals)
	* the waste is included in the list of hazardous waste

Section 14: Transport information

14.1. UN number 1972
14.2. UN proper shipping name: NATURAL GAS, REFRIGERATED LIQUID
14.3. Transport hazard class(es): 2 (classification code 3F, label 2.1, hazard no. 223)
14.4. Packing group not applicable
14.5. Environmental hazards: no
14.6. Special precautions for user:

- do not smoke, do not use open fire or any sparking objects due to fire hazard and the possibility of explosion;
- transport in tight, sealed containers suitable for cryogenic gases or in trucks conforming to ADR requirements;
- do not ship with other substances.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: not applicable

Section 15: Regulatory information

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

Regulation of the Council of Ministers of 24 August 2004 concerning the list of work prohibited to juveniles and conditions of engaging them to do some of these works (Dz. U. 2016, item 1509, as amended):

Work in exposure to substances or mixtures meeting the criteria for classification in accordance with Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on the classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548 / EEC and 1999/45 / EC and amending Regulation (EC) No 1907/2006 (OJ L 353, 31.12.2008, p. 1, as amended) in one or more of the following classes or categories Hazard statements with one or more of the following hazard statements: - flammable gas, category 1 or 2 (H220, H221),**Regulation of the Minister of Development of 29 January 2016 concerning the types and quantities of hazardous substances present in industrial plants which determine the recognition of the plant as a plant with an increased or high risk of serious industrial failure (Dz. U. 2016, item 138):**

Natural gas - quantity of hazardous substance which determines the recognition of a plant as a plant with increased risk amounts to 50 Mg, and with high risk – to 200 Mg (Table 2 in the annex, item No 18).

Other legislation:

1. *Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (corrigendum in OJ L 136, 29.05.2007, p. 3, as amended).*
2. *Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (OJ L 133, 31.05.2010., p. 1)*
3. *Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Registration of Chemicals (REACH).*
4. *Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (OJ L 353, 31.12.2008., p. 1 as amended).*
5. *Act of 25 February 2011 on chemical substances and their mixtures (for consolidated text see Dz.U. 2015, item 1203).*
6. *Regulation of the Minister of Health of 10 August 2012 on the criteria and methods for the classification of chemical substances and their mixtures (for consolidated text see Dz.U. 2015, item 208).*
7. *Regulation of the Minister of Labour and Social Policy of 26 September 1997 concerning the general occupational health and safety regulations (for consolidated text see Dz.U. No 169/2003 item 1650, as amended)*
8. *Regulation of the Minister of Economy and Labour of 27 July 2004 concerning training in the area occupational health and safety (Dz.U. No 180/2004 item 1860, as amended)*
9. *Regulation of the Minister of Economy, Labour and Social Policy of 23 December 2003 concerning occupational health and safety in the production and storage of gases, container filling with gases and the use and storage of carbide (Dz.U. No. 7/2004, item 59)*
10. *Regulation of the Minister of Health of 25 August 2015 concerning the marking of places, pipelines, containers and tanks used for the storage of or containing potentially hazardous substances or mixtures (Dz.U. 2015, item 1368).*
11. *Regulation of the Minister of Labour and Social Policy of 6 June 2014 on the maximum acceptable concentrations and intensities of noxious agents in the working environment (Dz.U 2014, item 817).*
12. *Regulation of the Minister of Health of 2 February 2011 on testing and measurement of noxious agents in the working environment (Dz.U 33/2011, item 166).*
13. *Regulation of the Minister of Health and Welfare of 30 May 1996 concerning the medical examinations of employees, scope of preventive healthcare for employees and medical opinions issued for the purposes envisaged in the Labour Code (Dz.U. No 69/1996, item 332, as amended).*
14. *Regulation of the Minister of Economy of 21 December 2005 concerning the principal requirements for personal protection measures (Dz.U 259/2005, item 2173).*
15. *Act on Waste of 14 December 2012 (for consolidated text see Dz.U. 2016, item 1987, as amended).*

16. *Regulation of the Minister of Environment of 9 December 2014 on the catalogue of waste (Dz.U. 2014, item 1923).*
17. *Regulation of the Minister of Economy of 18 July 2001 on the procedure for the verification of qualification required in the operation and maintenance of technical equipment (Dz. U. No 79/2001, item 849, as amended).*
18. *Regulation of the Minister of Internal Affairs and Administration of 7 June 2010 concerning the fire protection of buildings, other constructions and areas (Dz.U. No 109/2010, item 719).*
19. *Act of 19 August 2011 on the transport of hazardous goods (for consolidated text see Dz.U. 227/2011, item 1367, as amended),*
20. *Act of 27 April 2001 on environmental protection (Dz. U. 2017, , item 519).*
21. *Regulation of the Minister of Economy, Labour and Social Policy of 28 April 2003, on detailed rules for the determination of formal qualifications for persons engaged in the operation of equipment, installations and networks (Dz. U. No. 89/2003, item. 828, as amended)*

15.2. Chemical safety assessment: not applicable.

Section 16: Other information

Changes introduced with respect to version 1.8
Section 13: legal regulations have been updated.
Section 15: legal regulations have been updated.

Explanation of abbreviations and acronyms used in the safety data sheet
MPC maximum permissible concentration
MPIC maximum permissible instantaneous concentration
PCB permissible concentration in biological material
GHS02 Symbol: flame

References to key literature and data sources
1. ESIS (European Chemical Substances Information System)
2. European Chemicals Bureau IUCLID Dataset
3. Haz-Map, Occupational Exposure to Hazardous Agents: http://hazmap.nlm.nih.gov/
4. Integrated Risk Information System (IRIS) U.S. Environmental Protection Agency: http://www.epa.gov/iris/
5. International Programme on Chemical Safety (IPCS), INCHEM, Chemical Safety Information from Intergovernmental Organizations: http://www.inchem.org/
6. TOXNET Hazardous Substances Data Bank (HSDB): http://toxnet.nlm.nih.gov/
7. U.S. Environmental Protection Agency, Persistent Bioaccumulative and Toxic (PBT) Chemical Program: http://www.epa.gov/pbt/
8. Environmental, Health and Safety Guidelines for Liquefied Natural Gas (LNG) Facilities, IFC, 2007
9. Safety data sheets for hazardous substances, CIOP, Warsaw 2005

List of statement indicating the type of hazard and/or precautions
Hazard class and category codes
Flam. Gas 1 Flammable gas (hazard category 1)
Press. Gas Pressurised gas
Ref. Liq. Gas Refrigerated liquefied gas

List of relevant H-phrases
H220 Extremely flammable gas.
H281 Contains refrigerated gas; may cause cryogenic burns or injury.

Necessary training
Persons involved in the trade in the substance should undergo periodic training in the are of OHS and fire protection. Vehicle drivers should undergo training and obtain appropriate certification according to the ADR requirements.

Further information
Article 1(2) of Regulation (EU) No 286/2011 has been applied.
The information provided in the safety data sheet is intended to describe the substance exclusively from the safety requirements perspective. It is the user's responsibility to ensure conditions for the safe use of the substance, and the user shall be responsible for any consequences of unappropriate use of the substance.