



SAFETY DATA SHEET
LNG- Liquefied Natural Gas
According to Regulation (EU) No 2015/830

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name LNG- Liquefied Natural Gas

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

Identified uses This multi-purpose product used as fuel in housing and industry.
Uses advised against No data available.

1.3. Details of the supplier of the safety data sheet

Supplier Akpet Gaz A.Ş.
Akatlar Mahallesi, Ebululla Mardin Caddesi
No: 22 Maya Park Tower I, 34335
Beşiktaş / İstanbul / Turkey
Tel: +90 212 376 66 00
www.lukoil.com.tr
e-mail: info@lukoil.com.tr

Contact Person HSE Manager

1.4. Emergency telephone number

LUKOIL: +90 444 45 85 (7/24)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical and Chemical Hazards Flam. Gas 1 - H220; Press. Gas, Refrigerated Liquefied - H281
Human health Skin Sens. 1 - H317
Environment Not classified

The Full Text for all hazard statements are displayed in section 16.

2.2. Label elements

Label In Accordance With (EC) No. 1272/2008



Signal Word Danger

Content Ethyl Acrylate
Methyl Acrylate



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Hazard Statements

H220 Extremely flammable gas.
H281 Contains refrigerated gas; may cause cryogenic burns or injury.
H317 May cause an allergic skin reaction.

Precautionary Statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P243 Take precautionary measures against static discharge.
P260 Do not breathe gas.
P280 Wear protective clothing, gloves, eye and face protection.
P301+312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P370+378 In case of fire: Use foam, carbon dioxide or dry powder for extinction.
P501 Dispose of contents/container in accordance with national regulations.

2.3. Other hazards

Physico-chemical hazards : Occur explosive mixtures with air at ambient temperature.
Human health : Although short term, overdose inhalation can cause death by suffocation effect.
Liquid product contact causes frostbite on skin.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable.

3.2. Mixtures

Name	EC No.	CAS No.	Content	Classification (EC 1272/2008)
Methane*	200-812-7	74-82-8	80-98%	Flam. Gas 1 - H220 Press. Gas, Compressed - H280
Ethane*	200-814-8	74-84-0	<10%	Flam. Gas 1 - H220 Press. Gas, Compressed - H280
Propane*	200-827-9	74-98-6	<5%	Flam. Gas 1 - H220 Press. Gas, Compressed - H280
Butane*	203-448-7	106-97-8	<2%	Flam. Gas 1 - H220 Press. Gas, Compressed - H280
Ethyl acrylate	205-438-8	140-88-5	<2%	Flam. Liq. 2 - H225 Acute Tox. 4 - H302 Acute Tox. 4 - H312 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 STOT SE 3 - H335
Methyl acrylate	202-500-6	96-33-3	<2%	Flam. Liq. 2 - H225 Acute Tox. 4 - H302 Acute Tox. 4 - H312 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 STOT SE 3 - H335

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Composition Comments

- The data shown are in accordance with the latest EC Directives.
- *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.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General information

Natural gas isn't poisonous. Due to the release of natural gas, the amount of oxygen in the environment will be reduced. Organization of muscle slightly weakens when oxygen concentration in the inhaled air falls below 17%, dizziness and tiredness occurs below 12%, loss of consciousness occurs at 9% and breathing and heartbeat stops below 6%, people lost their lives. It has choking effect.

Inhalation

Move into fresh air and keep at rest. Rinse nose and mouth with water. If necessary, should be applied artificial respiration and heart massage. If there should be given oxygen. Get medical attention if any discomfort continues.

Ingestion

Immediately rinse mouth. Keep person under observation. Do not induce vomiting. If vomiting occurs, keep head low. Transport immediately to hospital and bring along these instructions.

Skin contact

In case of skin contact with liquid wash with plenty of water. Immediately remove contaminated clothing. Wash off promptly and flush contaminated skin with water. Promptly remove clothing if soaked through and flush skin with water.

Eye contact

Promptly wash eyes with plenty of water while lifting the eye lids. Get medical attention promptly if symptoms occur after washing.

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

Inhalation : Headache, dizziness, and nausea.

Ingestion : Nausea, vomiting.

Skin contact : Allergic reactions.

Eye contact : No data available.

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

Treat Symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media

Use: Dry chemical or CO2. Water spray or fog. DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.

Unsuitable extinguishing media DO NOT use water jet.

5.2. Special hazards arising from the substance or mixture

Unusual Fire & Explosion Hazards

Vapours may form explosive mixtures with air. Continue to cool fire until flames are extinguished. As the vapour warms above minus 88°C it becomes lighter than air. Vapors may travel to source of ignition and flash back.

Specific hazards

Environmental release of unburned gas can cause an explosion. Gas accumulation can be in enclosed areas.



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5.3. Advice for firefighters

Special Fire Fighting Procedures

Evacuate area. Remove the pressurized gas cylinders from the immediate vicinity. Take precautionary measures against static discharge. If fire persists and if possible gas flow should be cut first. If the flow is stopped, wait for the complete controlled burning of the remaining part. If leakage can't be prevented it should be let to burn. If leakage don't burn stop the gas leak, isolate the ignition sources and remove the personnel. Water and water seal should be used for tank cooling processes and ensuring environmental safety. Dike and collect extinguishing water. Keep away all non-emergency personnel from fire area.

If the fire is extinguished and the flow of gas continues, use increased ventilation to prevent build-up of explosive atmosphere. Ventilation fans must be explosion proof. Use non-sparking tools to close tank valves.

Use water spray to cool surrounding tanks. Be cautious of a Boiling Liquid Evaporating Vapor Explosion, BLEVE, if flame is impinging on surrounding tanks. Avoid solid water streams.

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Fires in enclosed places should be extinguished by trained personnel wearing protective clothing and an oxygen mask.

Protective equipment for fire-fighters

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Wear protective clothing as described in Section 8 of this safety data sheet.

Do not smoke, use open fire or other sources of ignition. Provide adequate ventilation.

In case of spills, beware of slippery floors and surfaces.

If leakage don't burn stop the gas leak, isolate the ignition sources and remove the personnel.

Gas should be distributed by using water spray and personnel should be protected who attempt to stop the leakage.

Do not approach with open flame or cigarette, portable electrical devices such as battery-operated flashlight, radio, mobile phone when lpg leak is noticed in the environment. Immediately shut the devices in the environment which can cause sparkles. Evacuate the area.

Immediately ventilate the area by opening doors and windows when LNG leak is defined in the enclosed environment. Shut off the gas flow by closing LNG cylinders, hood or valves. Continue ventilation until the gas smell is removed in the environment.

Keep away from all objects that can cause ignition and sparkles when LNG leak is defined in the open environment. Disable all motor vehicle from entering leak area. Try to shut off the gas flow with a suitable valve. Evacuate the area.

Leak may be prevented from spreading by spraying water with fog nozzle and shielding according to the direction of the wind.

6.2. Environmental precautions

Prevent spreading over wide areas.

6.3. Methods and material for containment and cleaning up

Keep all ignition sources away from spilled material. Provide adequate ventilation. Spilled liquid will evaporate completely in enclosed area so that adequate ventilation must be done and should be entered with protective clothing after measurement.

6.4. Reference to other sections

For personal protection, see section 8.

See section 11 for additional information on health hazards.

For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid contact with eyes and skin. Use appropriate goggles and gloves. Keep away from heat, sparks and open flame.

Do not eat, drink or smoke when using the product. Provide adequate ventilation. Avoid breathing vapor.

Avoid contact with liquid and cold storage tank. Protective shoes and gloves should be worn when using cylinders.



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7.2. Conditions for safe storage, including any incompatibilities

Protect against physical damage and/or friction.
Protect from heat, sparks and flame. Keep in a cool, well ventilated area.
Store away from incompatible materials.
It should be stored in tanks designing according to the product.
Storage tanks should be labeled and should be kept closed when out of use.
Do not remove the warning signs since some products may be present in empty tanks.
Despite the possibility of the empty tanks containing product vapor should not be done cutting, welding, soldering processes.
There is possibility of ignition vapour of product are collected in the storage tanks. Therefore, static electricity must be discharged.
Measures should be taken against the igniton source while filling and discharge.
Equipments such as pumps etc. must be earthed or transmission cables must be connected each other by a cable to avoid accumulation of static electricity.
Proper distances as per legal regulations must be applied in placement of the external tanks used in housing and industry.
Should not be entered into the storage tanks and tanks must be labeled.
Warning signs must not be removed from storage tanks.
Storage and transport temperature: -165°C

7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Name	STD	TWA - 8 Hrs		STEL - 15 Min		Notes
Methane	WEL	1000 ppm	650 mg/m ³			
Ethane	WEL	1000 ppm	1200 mg/m ³			
Propane	WEL	1000 ppm	1800 mg/m ³			
Butane	WEL	600 ppm	1450 mg/m ³	750 ppm	1810 mg/m ³	
Ethyl acrylate	WEL	5 ppm		15 ppm		
Methyl acrylate	WEL	5 ppm				

WEL = Workplace Exposure Limits.

8.2. Exposure controls

Protective equipment



Process conditions

Provide eyewash, quick drench.

Engineering measures

Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded.

Respiratory equipment

Appropriate respiratory equipment should be used when the possibility of exposure to hydrocarbon vapor.



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Hand protection

For prolonged or repeated skin contact use suitable protective gloves.

Eye protection

Wear approved safety goggles.

The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

Hygiene measures

Promptly remove non-impervious clothing that becomes contaminated. When using do not eat, drink or smoke.

Wash hands after contact. Wash promptly if skin becomes contaminated.

Skin protection

Protective clothing should be worn. Anti-static and flame-retardant protective clothing is recommended to wear.

Environmental Exposure Controls

Please act in accordance with local and national laws.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Identifier	Unit	Value	Test method
Appearance		Liquified Gas	
Colour		Colorless	
Odour		Special scented. As garlic	
Density, 15 °	kg/m ³	550	
Freezing Point	°C	-182	
Boiling Point	°C	-162	
Auto-ignition temperature	°C	539	
Critical pressure	bar	45,95	
Critical temperature	°C	-82,5	
Explosion limit - lower	% volume	5.0	
Explosion limit - upper	% volume	15.0	

9.2. Other information

No information required.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under normal temperature conditions and recommended use. Stable under the prescribed storage conditions.
It is in gas form at ambient temperature.

10.3. Possibility of hazardous reactions

Will not polymerise.

10.4. Conditions to avoid

Should be kept away from sources of ignition.



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10.5. Incompatible materials

Avoid contact with strong reducing agent (oxidizing) and halogen (as chlorine).

10.6. Hazardous decomposition products

Thermal decomposition or combustion may liberate carbon oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Serious eye damage / irritation

No data available.

Skin and respiratory sensitivity

May cause an allergic skin reaction.

Germ cell mutagenicity:

Genotoxicity - In Vitro/ In Vivo

No data available.

Carcinogenicity:

No data available.

Reproductive Toxicity – Fertility/ Development

No data available.

Specific target organ toxicity - single exposure:

No data available.

Specific target organ toxicity - repeated exposure:

No data available.

Inhalation

In case of inhalation in low concentrations may cause conditions such as nausea, dizziness, headache, drowsiness. Symptoms of shortness of oxygen in high concentration and central nervous system depression leads to a rapid loss of consciousness.

Ingestion

Using of the product isn't harmful under normal conditions. However, even if short term, may cause loss of consciousness and sudden death when taken in high doses.

Skin contact

Allergic reactions.

Eye contact

No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Adverse effects to the aquatic environment and the environment is not expected.

12.2. Persistence and degradability

When the product is poured, evaporates and mixes with air.

12.3. Bioaccumulative potential

There is no evidence that accumulating in the soil.



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12.4. Mobility in soil

Product is insoluble in water. Volatile components of the product will be dispersed into the atmosphere.

12.5. Results of PBT and vPvB assessment

This product does not contain any PBT or vPvB substances.

12.6. Other adverse effects

No information required.

SECTION 13: DISPOSAL CONSIDERATIONS

General information

Disposed of as hazardous waste. Waste must be treated as the product itself.

13.1. Waste treatment methods

LNG including containers should not be thrown and all cylindrical vessel or boiler should be returned to the seller.
Do not remove the signs or labels since some products may be present in empty containers.
Should not be done welding and soldering processes since empty tanks (container, tube, boiler, cylinder) containing ignitable product residue.

SECTION 14: TRANSPORT INFORMATION

14.1. UN number

UN No. (ADR/RID/ADN)	1972
UN No. (IMDG)	1972
UN No. (ICAO)	1972

14.2. UN proper shipping name

Proper Shipping Name	NATURAL GAS, REFRIGERATED LIQUID
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14.3. Transport hazard class(es)

ADR/RID/ADN Class	2.1
ADR/RID/ADN Class	Class 2: Gases
ADR Label No.	2.1
IMDG Class	2.1
ICAO Class/Division	Prohibited.
Transport Labels	



14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally Hazardous Substance/Marine Pollutant
No.



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14.6. Special precautions for user

EMS	F-D, S-U
ADR transport category	2
Emergency Action Code	2YE
Hazard No. (ADR)	223
Tunnel restriction code	(B/D)

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available.

SECTION 15: REGULATORY INFORMATION

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

UK Regulatory References

Chemicals (Hazard Information & Packaging) Regulations.
Fire precautions Act 1971.

Environmental Listing

No listing noted.

Statutory Instruments

Export of Dangerous Chemicals Regulations.

Approved Code Of Practice

Safety Data Sheets for Substances and Preparations.

Guidance Notes

Workplace Exposure Limits EH40. Introduction to Local Exhaust Ventilation HS(G)37. CHIP for everyone HSG(108).

EU Legislation

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.

15.2. Chemical Safety Assessment

No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

Abbreviations used in safety data sheet

ADR: European Agreement on International Carriage of Dangerous Goods by Road.
ADN: European Agreement on the International Carriage of Dangerous Goods by Inland Waterways.
RID: European Agreement on International Carriage of Dangerous Goods by Rail.
IATA: International Air Transport Association.
ICAO-TI: Technical Specification for Safe Transport of Dangerous Goods by Air.
IMDG: International Maritime Dangerous Goods.
TWA: Time weighted average
ATE: Estimated value of acute toxicity
EC No: European Community number
CAS: Chemical Theory Service.
LD50: Substance that causes 50% (half) death in the test animals group (Median Fatal Dose).
LC50: Substance concentration causing 50% (half) death in the test animals group.
EC50: Effective Concentration of the substance causing the maximum of 50%.
PBT: Persistent, Bioaccumulative and Toxic substance.
vPvB: Very Permanent, Very Biofriendly.



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SEA: Classification, labeling, packaging regulation

DNEL: Derivative Inactive Level

PNEC: Estimated Unaffected Concentration

BHOT: Specific Target Organ Toxicity

Information Sources

This SDS is written based on the information received from rawmaterial supplier.
European Chemicals Agency (ECHA)

Revision Comments

This form is designed for the first time for this product.

Hazard Statements In Full

H280	Contains gas under pressure; may explode if heated.
H281	Contains refrigerated gas; may cause cryogenic burns or injury.
H220	Extremely flammable gas.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H332	Harmful if inhaled.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H225	Highly flammable liquid and vapour.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.

Classification procedures

Flam. Gas 1 - H220	: Based on the test data.
Press. Gas, Refrigerated Liquefied - H281	: Based on the test data.
Skin Sens. 1 - H317	: Calculation method.

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Issued Note

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