



LIQUID NITROGEN

Safety Data Sheet

In accordance with the Regulation on Safety Data Sheets Regarding Hazardous Substances and Mixtures published in the Official Journal numbered 29204 on December 13, 2014

Date of issue: 23/03/2019 Version: 1.0

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

1.1. Product identifier

Product form	: Substance
Substance name	: LIQUID NITROGEN
EC-No.	: 231-783-9
CAS-No.	: 7727-37-9
Product code	: EIGA089B
Formula	: N ₂
Product group	: Trade product
REACH authorisation exemptions	: Exempted from REACH registration

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

Relevant identified uses	: Industrial and professional. Perform risk assessment prior to use, Test gas/Calibration gas, Purge gas, diluting gas, inerting gas, Use for manufacture of electronic/photovoltaic components, Shield gas for welding processes, Laboratory use, Contact supplier for more information on uses.
Uses advised against	: Consumer use, In beverage for fogging effect, because of the risk of ingestion

1.3. Details of the supplier of the safety data sheet

KOYUNCU TİCARET A.Ş.
GEBZE 5 (KİMYA) İHTİSAS OSB GEBKİM OSB REÇEP YAZICI CAD.NO:4
DİLOVASI
KOCAELİ - Türkiye
T +90 262 658 06 05
satis@koyuncutas.com - www.koyuncutas.com

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Turkey	Ulusal Zehir Merkezi (UZEM) Refik Saydam Hfzissihha Merkezi Başkanlığı	Cemal Gürsel Cd. No: 18 Sıhhiye Çankaya 06590 Ankara	114	Information is provided to public and medical personnel on poisoning incidents via 114.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Classification, Labelling and Packaging of Substances and Mixtures (SEA) Regulation published in the Official Journal numbered 28848 on December 11, 2013.

Gases under pressure : Refrigerated liquefied gas H281

Full text of H-statements: see section 16

2.2. Label elements

Classification according to Classification, Labelling and Packaging of Substances and Mixtures (SEA) Regulation published in the Official Journal numbered 28848 on December 11, 2013.

Hazard pictograms (SEA) :



GHS04

Signal word (SEA)	: Warning
Hazard statements (SEA)	: H281 - Contains refrigerated gas; may cause cryogenic burns or injury.
Precautionary statements (SEA)	: P282 - Wear cold insulating gloves/face shield/eye protection. P315 - Get immediate medical advice/attention. P336 - Thaw frosted parts with lukewarm water. Do not rub affected area. P403 - Store in a well-ventilated place.
Child-resistant fastening	: Not applicable
Tactile warning	: Not applicable



LIQUID NITROGEN

Safety Data Sheet

In accordance with the Regulation on Safety Data Sheets Regarding Hazardous Substances and Mixtures published in the Official Journal numbered 29204 on December 13, 2014

Date of issue: 23/03/2019 Version: 1.0

2.3. Other hazards

Other hazards not contributing to the classification

Other hazards not contributing to the classification : Asphyxiant in high concentrations.

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Classification, Labelling and Packaging of Substances and Mixtures (SEA) Regulation published in the Official Journal numbered 28848 on December 11, 2013.
LIQUID NITROGEN	(CAS-No.) 7727-37-9 (EC-No.) 231-783-9 (REACH-no) *1	100	Press. Gas (Ref. Liq.), H281

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Perform cardiopulmonary resuscitation if breathing stopped.

First-aid measures after skin contact : Adverse effects not expected from this product.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

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

Most important symptoms and effects, both acute and delayed : In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Refer to section 11.

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

None.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray or fog.

Unsuitable extinguishing media : Do not use water jet to extinguish.

5.2. Special hazards arising from the substance or mixture

Reactivity in case of fire : No reactivity hazard other than the effects described in sub-sections below.

Hazardous combustion products : None.

5.3. Advice for firefighters

Specific methods : If leaking do not spray water onto container. Water surrounding area (from protected position) to contain fire. Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems. If possible, stop flow of product. Use water spray or fog to knock down fire fumes if possible. Move containers away from the fire area if this can be done without risk.

Special protective equipment for fire fighters : In confined space use self-contained breathing apparatus. Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask. Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters.



LIQUID NITROGEN

Safety Data Sheet

In accordance with the Regulation on Safety Data Sheets Regarding Hazardous Substances and Mixtures published in the Official Journal numbered 29204 on December 13, 2014

Date of issue: 23/03/2019 Version: 1.0

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Try to stop release. Evacuate area. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Use protective clothing. Ensure adequate air ventilation. Act in accordance with local emergency plan. Stay upwind. Oxygen detectors should be used when asphyxiating gases may be released.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Try to stop release. Liquid spillages can cause embrittlement of structural materials.

6.3. Methods and material for containment and cleaning up

Methods and material for containment and cleaning up : Ventilate area.

6.4. Reference to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Safe use of the product : The product must be handled in accordance with good industrial hygiene and safety procedures. Only experienced and properly instructed persons should handle gases under pressure. Consider pressure relief device(s) in gas installations. Ensure the complete gas system was (or is regularly) checked for leaks before use. Do not smoke while handling product. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Avoid suck back of water, acid and alkalis. Do not breathe gas. Avoid release of product into work area.

Safe handling of the gas receptacle : Refer to supplier's container handling instructions. Do not allow backfeed into the container. Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. 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. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Keep container valve outlets clean and free from contaminants particularly oil and water. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to transfer gases from one cylinder/container to another. Never use direct flame or electrical heating devices to raise the pressure of a container. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. Suck back of water into the container must be prevented. Open valve slowly to avoid pressure shock.

7.2. Conditions for safe storage, including any incompatibilities

Conditions for safe storage, including any incompatibilities : For more guidance on the safe storage of liquid oxygen, liquid nitrogen or liquid argon, refer to EIGA Doc.115 "Storage of Cryogenic Air Gases at Users Premises", downloadable at <http://www.eiga.eu> and consult your supplier. Observe all regulations and local requirements regarding storage of containers. Containers should not be stored in conditions likely to encourage corrosion. Container valve guards or caps should be in place. Containers should be stored in the vertical position and properly secured to prevent them from falling over. Stored containers should be periodically checked for general condition and leakage. Keep container below 50°C in a well ventilated place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible materials.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

LIQUID NITROGEN (7727-37-9)	
DNEL/DMEL (additional information)	
Additional information	None available.
PNEC (additional information)	
Additional information	None available.



LIQUID NITROGEN

Safety Data Sheet

In accordance with the Regulation on Safety Data Sheets Regarding Hazardous Substances and Mixtures published in the Official Journal numbered 29204 on December 13, 2014

Date of issue: 23/03/2019 Version: 1.0

Additional information : None available.

8.2. Exposure controls

Appropriate engineering controls	: Provide adequate general and local exhaust ventilation. Systems under pressure should be regularly checked for leakages. Oxygen detectors should be used when asphyxiating gases may be released. Consider the use of a work permit system e.g. for maintenance activities.
Personal protective equipment	: 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: PPE compliant to the recommended EN/ISO standards should be selected.
Hand protection	: Wear working gloves when handling gas containers. Standard EN 388 - Protective gloves against mechanical risk. Standard EN 511 - Cold insulating gloves.
Eye protection	: Wear goggles and a face shield when transfilling or breaking transfer connections. Standard EN 166 - Personal eye-protection - specifications
Respiratory protection	: Consult respiratory device supplier's product information for the selection of the appropriate device. Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.
Thermal hazard protection	: None in addition to the above sections.
Environmental exposure controls	: None necessary.
Other information	: Wear safety shoes while handling containers. Standard EN ISO 20345 - Personal protective equipment - Safety footwear.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Appearance	: Liquefied gas.
Molecular mass	: 28 g/mol
Colour	: Colourless liquid.
Odour	: No odour warning properties.
Odour threshold	: Odour threshold is subjective and inadequate to warn of overexposure.
pH	: Not applicable for gases and gas mixtures.
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable for gases and gas mixtures.
Melting point	: -210 °C
Freezing point	: -210 °C
Boiling point	: -196 °C
Flash point	: Not applicable for gases and gas mixtures.
Critical temperature	: -147 °C
Auto-ignition temperature	: Non flammable.
Decomposition temperature	: Not applicable.
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: Not applicable.
Vapour pressure at 50 °C	: Not applicable.
Critical pressure	: 3390 kPa
Relative vapour density at 20 °C	: Not applicable.
Relative density	: 0.8
Relative gas density	: 0.97
Solubility	: Water: 20 mg/l
Log Pow	: Not applicable for inorganic products.
Log Kow	: Not applicable for gas mixtures.
Viscosity, kinematic	: No reliable data available.
Viscosity, dynamic	: No reliable data available.
Explosive properties	: Not applicable.
Oxidising properties	: Not applicable.
Explosive limits	: Non flammable.



LIQUID NITROGEN

Safety Data Sheet

In accordance with the Regulation on Safety Data Sheets Regarding Hazardous Substances and Mixtures published in the Official Journal numbered 29204 on December 13, 2014

Date of issue: 23/03/2019 Version: 1.0

9.2. Other information

Gas group : Press. Gas (Ref. Liq.)

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Avoid moisture in installation systems.

10.5. Incompatible materials

For additional information on compatibility refer to ISO 11114. Materials such as carbon steel, low alloy carbon steel and plastic become brittle at low temperatures and are subject to failure. Use appropriate materials compatible with the cryogenic conditions present in refrigerated liquefied gas systems.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified pH: Not applicable for gases and gas mixtures.
Serious eye damage/irritation	: Not classified pH: Not applicable for gases and gas mixtures.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: No ecological damage caused by this product.
Acute aquatic toxicity	: Not classified
Chronic aquatic toxicity	: Not classified

12.2. Persistence and degradability

LIQUID NITROGEN (7727-37-9)	
Persistence and degradability	No ecological damage caused by this product.

12.3. Bioaccumulative potential

LIQUID NITROGEN (7727-37-9)	
Log Pow	Not applicable for inorganic products.
Log Kow	Not applicable for gas mixtures.
Bioaccumulative potential	No data available.

12.4. Mobility in soil

LIQUID NITROGEN (7727-37-9)	
Mobility in soil	No additional information available



LIQUID NITROGEN

Safety Data Sheet

In accordance with the Regulation on Safety Data Sheets Regarding Hazardous Substances and Mixtures published in the Official Journal numbered 29204 on December 13, 2014

Date of issue: 23/03/2019 Version: 1.0

LIQUID NITROGEN (7727-37-9)

Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution. Partition into soil is unlikely.
----------------	--

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment : No data available.

12.6. Other adverse effects

Ozone : Not classified
 Other adverse effects : Can cause frost damage to vegetation.
 Effect on the ozone layer : None.
 Effect on global warming : None.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Disposal must be done according to official regulations. Regulation on Incineration of Waste Materials published in the Official Journal numbered 27721 on October 6, 2010. Waste Management Regulation published in the Official Journal numbered 29314 on April 2, 2015.




Waste treatment methods : May be vented to atmosphere in a well ventilated place. Do not discharge into any place where its accumulation could be dangerous. Return unused product in original cylinder to supplier.

Additional information : External treatment and disposal of waste should comply with applicable local and/or national regulations.

List of hazardous waste codes (from Commission Decision 2000/532/EC as amended) : 16 05 05 : Gases in pressure containers other than those mentioned in 16 05 04.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
1977	1977	1977	Not applicable	Not applicable
14.2. UN proper shipping name				
NITROGEN, REFRIGERATED LIQUID	NITROGEN, REFRIGERATED LIQUID	Nitrogen, refrigerated liquid	Not applicable	Not applicable
Transport document description				
UN 1977 NITROGEN, REFRIGERATED LIQUID, 2.2, (C/E)	UN 1977 NITROGEN, REFRIGERATED LIQUID, 2.2	UN 1977 Nitrogen, refrigerated liquid, 2.2	Not applicable	Not applicable
14.3. Transport hazard class(es)				
2.2	2.2	2.2	Not applicable	Not applicable
			Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				

14.6. Special precautions for user

Special transport precautions : 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 there is adequate ventilation, - Ensure that containers are firmly secured, - Ensure cylinder valve is closed and not leaking, - Ensure valve outlet cap nut or plug (where provided) is correctly fitted, - Ensure valve protection device (where provided) is correctly fitted.



LIQUID NITROGEN

Safety Data Sheet

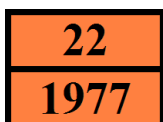
In accordance with the Regulation on Safety Data Sheets Regarding Hazardous Substances and Mixtures published in the Official Journal numbered 29204 on December 13, 2014

Date of issue: 23/03/2019

Version: 1.0

- Overland transport

Classification code (ADR)	: 3A
Special provisions (ADR)	: 345, 346, 593
Limited quantities (ADR)	: 120ml
Excepted quantities (ADR)	: E1
Packing instructions (ADR)	: P203
Mixed packing provisions (ADR)	: MP9
Portable tank and bulk container instructions (ADR)	: T75
Portable tank and bulk container special provisions (ADR)	: TP5
Tank code (ADR)	: RxBN
Tank special provisions (ADR)	: TU19, TA4, TT9
Vehicle for tank carriage	: AT
Transport category (ADR)	: 3
Special provisions for carriage - Packages (ADR)	: V5
Special provisions for carriage - Loading, unloading and handling (ADR)	: CV9, CV11, CV36
Special provisions for carriage - Operation (ADR)	: S20
Hazard identification number (Kemler No.)	: 22
Orange plates	:



Tunnel restriction code (ADR) : C/E

- Transport by sea

Special provisions (IMDG)	: 345, 346
Limited quantities (IMDG)	: 120 ml
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: P203
Tank instructions (IMDG)	: T75
Tank special provisions (IMDG)	: TP5
EmS-No. (Fire)	: F-C
EmS-No. (Spillage)	: S-V
Stowage category (IMDG)	: D
Properties and observations (IMDG)	: Liquefied, non-flammable, odourless gas. Lighter than air (0.97). Arrangements for the containment of the liquid nitrogen and fittings in use should be appropriate to the potential danger to the structure of the freight container or ship from the effect of misuse or accidental spillage.
MFAG-No	: 120

- Air transport

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Forbidden
PCA limited quantity max net quantity (IATA)	: Forbidden
PCA packing instructions (IATA)	: 202
PCA max net quantity (IATA)	: 50kg
CAO packing instructions (IATA)	: 202
CAO max net quantity (IATA)	: 500kg
ERG code (IATA)	: 2L

- Inland waterway transport

No data available

- Rail transport

No data available



LIQUID NITROGEN

Safety Data Sheet

In accordance with the Regulation on Safety Data Sheets Regarding Hazardous Substances and Mixtures published in the Official Journal numbered 29204 on December 13, 2014

Date of issue: 23/03/2019 Version: 1.0

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

15.1.1. National regulations

- Local regulations (Turkey) :
- Regulation on Health and Safety Precautions When Working with Carcinogenic and Mutagenic Substances published in the Official Journal numbered 28730 on August 6, 2013
 - Regulation on Health and Safety Precautions When Working with Chemical Substances published in the Official Journal numbered 28733 on August 12, 2013
 - Personal Protective Equipment Regulation published in the Official Journal numbered 26361 on November 29, 2006
 - Regulation on Use of Personal Protective Equipments in Workplaces published in the Official Journal numbered 28695 on July 2, 2013
 - Aerosol Containers Regulation published in the Official Journal numbered 24246 on November 30, 2000
 - Regulation on Transportation of Dangerous Goods by Road published in the Official Journal numbered 28801 on October 24, 2013.

This product doesn't contain any substances that is controlled or prohibited for use according to the Regulation for Reduction of Ozone Depleting Substances published in the Official Journal numbered 27052 on November 12, 2008.

Restrictions on use : None.

SECTION 16: Other information

Abbreviations and acronyms:

	ATE - Acute Toxicity Estimate
	CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
	REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
	EINECS - European Inventory of Existing Commercial Chemical Substances
	CAS# - Chemical Abstract Service number
	LC50 - Lethal Concentration to 50 % of a test population
	RMM - Risk Management Measures
	PBT - Persistent, Bioaccumulative and Toxic
	vPvB - Very Persistent and Very Bioaccumulative
	STOT- SE : Specific Target Organ Toxicity - Single Exposure
	CSA - Chemical Safety Assessment
	EN - European Standard
	UN - United Nations
	ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
	IATA - International Air Transport Association
	IMDG code - International Maritime Dangerous Goods
	RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
	WGK - Water Hazard Class
	STOT - RE : Specific Target Organ Toxicity - Repeated Exposure

Data sources : Classification according to Classification, Labelling and Packaging of Substances and Mixtures (SEA) Regulation published in the Official Journal numbered 28848 on December 11, 2013.

Training advice : The hazard of asphyxiation is often overlooked and must be stressed during operator training. For more guidance, refer to EIGA SL 01 "Dangers of Asphyxiation", downloadable at <http://www.eiga.eu..>

Other information : Classification using data from databases maintained by the European Industrial Gases Association (EIGA).

Full text of H-statements

Press. Gas (Ref. Liq.)	Gases under pressure : Refrigerated liquefied gas
H281	Contains refrigerated gas; may cause cryogenic burns or injury.

Safety Data Sheet author's

Name : Ezgi Üstün
Certificate number : NBC 01.77.03
Certificate valid until : 28/03/2019



LIQUID NITROGEN

Safety Data Sheet

In accordance with the Regulation on Safety Data Sheets Regarding Hazardous Substances and Mixtures published in the Official Journal numbered 29204 on December 13, 2014

Date of issue: 23/03/2019 Version: 1.0

Contact information : eustun@koyuncutas.com

SDS Turkey

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.