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SAFETY DATA SHEET
NITROGEN

According to EC Regulation no. 1907/2006 (REACH) / EC Regulation no. 1272/2008 / *Regulation no. 2020/878.*

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY

1.1. Product identification

Name: NITROGEN
Other names: GASEOUS NITROGEN or LIQUID NITROGEN
Chemical formula: N_2
CAS number: 7727-37-9
EINECS number: 231-783-9
According to EC Regulation no. 1907/2006 of the European Parliament and the Council of the European Union, (REACH) nitrogen is exempted form registration.

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

Identified uses: Gaseous nitrogen – inertization agent for various reactors with catalysts in active phase, pressurization, pneumatic transport, in chromatography, for fire extinguishing.
Liquid nitrogen – achieving extremely low temperatures for preserving various products, oil gas extraction using pocket principle, in research, processing, genetics, medicine, cryogenic agent.
Uses advised against: none

1.3. Details concerning the supplier of the Safety Data Sheet

Producer:
Azomureş S.A.Tg.-Mureş, 300 Gheorghe Doja St., tel.0040-265 253 700, Romania
Fax: 0040-265 252 986, e-mail: office@azomures.com, www.azomures.com
e-mail (competent person responsible for the SDS): fds.azo@azomures.com

1.4. Emergency telephone number

The institution responsible with providing information in case of a health emergency is The National Institute for Public Health, Department for the International Sanitary Regulation and Toxicological Information.
Telephone: 0040-21.318.36.06, working hours: Monday – Friday from 8 a.m. to 3 p.m.

SECTION 2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Nitrogen is an inorganic, monoconstituent substance, which is considered hazardous only during transportation, according to ADR, RID and IMDG.

Classification in accordance with EC Regulation no. 1272/2008 (CLP)

This substance is not classified according to CLP Regulation, as it does not meet the criteria specified in Annex I of the CLP Regulation, which sets forth the criteria for classification into hazard classes.

Human health hazards

Nevertheless, the following aspects will be taken into consideration:

Skin contact: in liquid state it may cause thermal burns

Eye contact: causes burning of the cornea, eyeball and conjunctive tissue

Inhalation: it causes dizziness, leading even to death by asphyxiation if the oxygen content in the area decreases below 18% volume.

Environmental hazards:

Nitrogen is not hazardous for the environment.

Ignition or explosion hazard:

Nitrogen is a non-combustible gas. In case of a fire in progress, compressed nitrogen cylinders are hazardous, as they may explode due to a decrease of the wall resistance, caused by a gas pressure increase inside the cylinder.

2.2. *Label elements*

EU label (according to ADR)

Substance name: NITROGEN

EINECS number: 231-783-9

Producer:

Azomureş S.A.Tg.-Mureş, 300 Gheorghe Doja St., tel. 0040-265 253 700, Romania

Fax: 0040-265 252 986, e-mail: office@azomures.com, www.azomures.com

Emergency telephone number: 0040-21.318.36.06, working hours: Monday – Friday from 8 a.m. to 3 p.m.

Class 2 - gaze, Group 1A – asphyxiating gases (which do not pose secondary risks)

Group 3A – refrigerated liquid gas

Hazard symbol: 2.2 – non-flammable, non-toxic gases

2.3. Other hazards

According to Annex XIII of EC Regulation no. 1907/2006, the PBT and vPvB assessment was not conducted, as nitrogen is an inorganic substance, exempted from REACH provisions.

Other hazards: unknown.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1. *Substance*

The product must be considered: Substance
NITROGEN is a monoconstituent substance
CAS number: 7727-37-9
EINECS number: 231-783-9
IUPAC name: nitrogen
Molecular formula: N_2
Typical concentration: 99.9999%
Concentration limit: > 99% - < 100%
Chemical identification of impurities: does not contain impurities that would influence product classification.

SECTION 4. FIRST AID MEASURES

4.1. Description of the first aid measures

4.1.1 First aid instructions are provided depending on the relevant exposure routes.
Skin contact: in case of burns, wash the affected area with plenty of water and get immediately medical assistance.
Eye contact: irrigate with plenty of water (including under the eyelids), cover the exposed area with dry bandages and get immediately medical assistance.
Inhalation: remove the contaminated person to fresh air; place the victim in a resting position and give oxygen; perform artificial respiration and, if necessary, get medical assistance immediately.
4.1.2 Recommendations:
Keep the victim under medical observation in case delayed symptoms occur.

4.2. The most important symptoms and effects, acute as well as delayed

Connected symptoms: loss of mobility and loss of consciousness.

4.3. Indications concerning any emergency medical assistance and necessary special treatments

Victims will be provided a medical consult, rest in bed and warmth. In case of a respiratory arrest, artificial respiration must be performed.

SECTION 5. FIREFIGHTING MEASURES

5.1. Fire extinguishing means

Adequate extinguishing means
All known fire extinguishing means may be used.
Inadequate extinguishing means: not applicable

5.2. *Special hazards arising from the substance or mixture*

Fire coming into contact with the container may cause its mechanical breaking or explosion.
Hazardous fire products: none

5.3. Advice for firefighters

Special fire fighting procedures
If possible, stop gas leaks. Isolate the container in a protected area, or continue to cool from a safe distance.
In closed areas, use a self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1 ***For non - emergency personnel***
(a) Protective equipment
Hand protection: protective gloves (leather).
Eye protection: tight safety goggles (plastic frame, polycarbonate lens) or protective face shield (polycarbonate).
Protective clothing:
Dust resistant overalls (breastplate duck overalls, coat), winter or summer shirt (natural fibers – duck), antichemical suit type A.
Protective footwear:
For compressed nitrogen – metal toed boots
For liquid nitrogen – rubber boots
(b) Keep gas cylinders away form heat and fire sources.
Wear a self-contained breathing apparatus and adequate protection equipment for firefighting.
Open doors and windows in order to produce maximum ventilation of the room.
(c) Emergency procedures
Evacuate the area. The victims will be evacuated from the danger area by a rescuer, equipped with a self-contained breathing apparatus.
6.1.2 For the personnel involved in emergency situations
Evacuate the area. Use a self-contained breathing apparatus if the atmosphere at the entrance to the affected area is considered dangerous.

6.2. Precautions for the environment

Try to stop the gas leaks.

6.3. Methods and material for containing fires and for cleaning

Ventilate the rooms.

6.4. Reference to other sections

Note: see chapter Exposure control / individual protection, for information concerning personal protection equipment and the section Disposal considerations.

SECTION 7. HANDLING AND STORAGE

7.1. Precautions for safe handling

7.1.1 Recommendations for safe handling
Handling and storage of containers carrying gaseous or liquid nitrogen is done in accordance with the instructions in use regarding under pressure containers, ISCIR technical provisions, and other technical instructions regarding work safety, as well as with ADR stipulations.
7.1.2. Recommendations concerning good general hygiene practices at the work place
(a) Do not eat, drink or smoke in the working area. “NO SMOKING” signs are to be placed in the working area.

7.2. Safe storage conditions, including possible incompatibilities

Gaseous nitrogen is transported in steel containers, at a pressure value between 150 and 200 bar and temperatures between 20 – 30 °C, according to ISCIR technical provisions (C - 5/2003). Prevent water from reaching inside the containers. Avoid gas recirculation in the container.
Gaseous nitrogen containers must be brought by the beneficiaries for loading, with a residual pressure of minimum 0.5 bar.
Gaseous nitrogen containers must be stored horizontally, in isolated areas, away from heat or direct sunlight, at temperatures below 50 °C, away from combustible materials and in well ventilated areas.
Liquid nitrogen is delivered at pressures between 1.5 - 3 bar and a temperature of – 196 °C, in containers specially built for transporting and storing cold liquids, such as: special vessels (DEWAR type); aluminum or stainless steel containers. The container is equipped with thermal insulation and a nozzle with a supply valve, flexible tube specially designated for the connection to the filling station, vent valve, level gauge, pressure gauge and safety valve, in strict compliance with containers working instructions.
Gaseous and liquid nitrogen containers must be checked and approved for filling, in accordance with instructions in use regarding under pressure containers issued by ISCIR.
Gaseous and liquid nitrogen containers will be homologated according to Order no. 2737/17.12.2012 regarding the approval of the Procedure concerning the designation of the bodies in charge with the issuance of the aggregation certificates and of the prototype conformity certificates according to the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), as well as with the inspection for the certification for maintaining the exploitation conformities for the specialized superstructures installed on the road vehicles for the carriage of dangerous goods and of packaging of dangerous goods transported on the road.

7.3 Specific end use (s)

Not applicable.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

No official limits are specified.

8.2. Exposure control

8.2.1 Adequate technical controls

General measures at company level

The CSSM (The Committee for Work Health and Safety) was constituted at the company level, where the risk factors of professional injury and illness in the work place are assessed.

The evaluation of the risks of professional injury and illness at the work place was carried out by committees established by the management; preventive measures were taken to eliminate or to diminish the risks that cannot be avoided, having as purpose the work safety and health, reduction of work injuries and of professional illnesses.

The Chemical Plant:

- Risk evaluation when using dangerous chemical substances
- Ammonium Nitrate Plant II-III-ADEX (operation – chemists, packing machinists)

As a result of the analysis and evaluation of the risks at the work place:

The plan for prevention and protection at company level was elaborated and approved

A record is held of the work places of great danger and imminent danger of injury

A situation of the hazardous chemical substances used in the work process is kept

The toxic gases, released by chemical substances at the work place, are monitored.

The health of the staff exposed to the action of chemical substances is supervised and monitored

The auditing of the safety and health at the work place is carried out, establishing the noncompliance with the law in force and taking measures to ensure compliance with such laws.

Statistics are drafted, referring to work accidents and professional illnesses caused by hazardous chemical substances

Intervention teams in case of chemical accident with periodically instructed staff are organized at company level

Authorized employees of the internal prevention and protection service perform the inspection of the work places according to the operational procedure

The explosion protection document is elaborated according to Government Ordinance no. 1058/2006 for the following plants: Ammonia, Nitric Acid, and Ammonium Nitrate.

The equipment used in areas with danger of explosion is certified upon availability date.

Workers have access to personal instructions regarding the usage of dangerous chemical substances:

- The staff has individual protection equipment
- Measures of collective protection are ensured.

Collective protection measures for the source of risk - Nitrogen

Technical Measures

Monitoring system of the main functioning parameters for the safety of the equipment (pressure, temperature, concentration, flow capacity, level etc), with acoustic and optical warning signals in case of malfunction.

Toxic gas, fire and explosion detectors

Protection devices – flange fenders on all the dangerous liquids layouts

Ammonia and nitric acid layouts painted in conventional colors

Signaling for work safety health and according to Government Ordinance no. 971/2006 (safety, warning, interdiction, obligation marks, delimitation of danger zones)

Ventilation systems.

Rescue showers for the danger of splashing with corrosive substances.

Water sources with upward jet (for washing the eyes in case of splashing)

Periodical ISCIR inspections of under-pressure equipment.

Toxic gases level control

Organization and provision of individual insulating protection equipment

Endowment and organization of medical help trained in case of gassing.

Administrative measures

Manufacturing regulation, work instructions regarding work safety and health and fire prevention

Safety data sheets for hazardous substances

Organization of an information system for surveillance and intervention:

- Action plan in case of fire
- Internal Emergency Plan (PUI).
- Evacuation action plan in emergency situations
- Action plan in case of earthquake
- Action plan for safe road transport (PSTR).

Authorization for the job position, employees in the production sector, maintenance, repair (mechanic, electric, automation) in technological installations.

Work safety and health training for Azomures employees, in all stages (upon hiring, at work, periodically, supplementary) and work safety and health instruction for the employees from the companies that perform services based on contract and for the persons that are on the platform with the employer's permission, related to:

- risk of professional injury and illness at the work place
- minimal requests of health and safety of work, stipulated by legal regulations applicable to the specific activity at the work place
- tasks and responsibilities of the employees
- usage of work equipment and individual protection equipment
- prevention and protection measures, action plan in case of danger
- giving first aid to the injured at the work place

8.2.2. Personal protection measures, such as personal protection equipment

Technical measures: install a ventilation system where necessary

Hygiene measures: do not eat, drink or smoke while handling the product. Wash hands after handling, before eating, smoking or using the toilet, as well as at the end of the working period.

(a) Respiratory protection: self-contained breathing apparatus ARIAC, EVAK or AD

(b) Hand protection: protective gloves (leather)

(c) Eye protection: tight safety goggles (plastic frame, polycarbonate lens) or protective face shield (polycarbonate).

Protective clothing:

Dust resistant overalls (breastplate duck overalls, coat), winter or summer shirt (natural fibers – duck), antichemical suit type A.

Protective footwear:

For compressed nitrogen - metal toed boots

For liquid nitrogen - rubber boots

8.2.3 Environmental exposure control

Ensure adequate ventilation.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information concerning the main physical and chemical properties

a) Physical state: gaseous or liquid

b) Color: colorless

c) Odor: odorless

Liquid nitrogen

No.	Physical and chemical properties of the substance /mixtures	Unit	Value Substance /mixture	Remarks
d)	Boiling point/ boiling temperature range	°C	- 195.8	
e)	Liquefying temperature	°C	- 196	
f)	Flammability	% vol.		Not flammable
g)	Density	kg/l	0.809	
h)	Autoflammability	°C		Not flammable
i)	Explosivity			No explosive properties
j)	Oxidizing properties			No oxidizing properties
k)	Specific heat	kcal/ Nm^3	0.616	
l)	Latent heat of vaporization	kcal/Nm^3	59.6	

Gaseous nitrogen

No.	Physical and chemical properties of the substance /mixtures	Unit	Value Substance /mixture	Remarks
d)	Melting point	°C	-210	
e)	Boiling point/ boiling temperature range	°C	-196	
f)	Dew point	°C	-59	
g)	Flammability	% vol.		Not flammable
h)	Water solubility	kg /l	0.0156	at 20 °C and 1 atm
i)	Density	kg/m^3	1.17	at 15 °C and 1 atm

j)	Relative density		0.97	In gaseous state (air =1)
k)	Specific weight	kg /m^3	1.2505	at 0 °C and 1 atm
l)	Explosivity			No explosive properties
m)	Oxidizing properties			No oxidizing properties
n)	Vapor pressure	mm Hg		
o)	Autoflammability	°C		Not flammable
p)	Specific heat	kcal/ Nm^3	0.310	la 15 °C and 1 atm

WARNING!
In normal conditions, from one liter of liquid nitrogen result 700 l of gaseous nitrogen!

9.2. Additional information

9.2.1. Information with regard to physical hazard classes
Nitrogen is not classified according to Regulation (EC) no. 1272/2008.
9.2.2. Other safety characteristics
Compressed nitrogen is part of asphyxiating gas group, or gas that does not present a danger secondary.
Refrigerated liquid nitrogen is part of liquefied, refrigerated and asphyxiating gas group.

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity

Not applicable.

10.2. Chemical stability

The product is stable in normal conditions of storage, handling and usage.

10.3. Hazardous reactions potential

Not applicable.

10.4. Conditions to avoid

Exceeding the admitted pressure value in the work area.
Mechanical shocks on containers.
Contact with heat sources.

10.5. Incompatible materials

Not applicable.

10.6. Hazardous decomposition products

No hazardous decomposition products.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicokinetics (absorption, metabolism, distribution and elimination)
No available data.

11.1. *Information on hazard classes as defined in Regulation (EC) No 1272/2008*

The relevant hazard classes for which information is provided are:
(a) Acute toxicity
(b) Skin corrosion / irritation
(c) Eye irritation / damage
(d) Sensitization of the skin or the respiratory system
(e) Mutagenicity germ cell
(f) Carcinogenicity
(g) Toxicity for reproduction
(h) STOT (specific target organs of toxicity) – unique exposure
(i) STOT (specific target organs of toxicity) – repeated exposure
(j) Aspiration hazard

11.1.1 Information for each hazard class
(a) Acute toxicity - no data available
(b) Skin corrosion/irritation - no data available
(c) Serious eye damage/irritation - no data available
(d) Respiratory and skin sensitization - no data available
(e) Mutagenicity - no data available
(f) Cancerogenicity - no data available
(g) Toxicity for reproduction - no data available
(h) STOT (specific target organs of toxicity) – unique exposure - no data available
(i) STOT (specific target organs of toxicity) – repeated exposure - no data available
(j) Aspiration hazard - no data available

11.1.2 The data in this subsection apply to the gaseous nitrogen or liquid nitrogen - no data available.

11.1.3 The results of *critical studies* by route of exposure:
The acute toxicity after oral administration - no data available
The acute toxicity after administration by inhalation - no data available
The acute toxicity after dermal administration - no data available

11.1.4 For the following hazard classes: STOT – single exposure, STOT – repeated exposure, aspiration hazard – no data available.

11.1.5 Information on the likely routes of exposure
The likely routes of exposure are inhalation and skin / eyes exposure - no data available.

11.1.6 Symptoms related to the physical, chemical and toxicological characteristics
No data available.

11.1.7 The known delayed and immediate effects and the chronic effects of long term exposure and short term exposure

Skin contact: in liquid state it may cause thermal burns

Eye contact: causes burning of the cornea, eyeball and conjunctive tissue

Inhalation: it causes dizziness, leading even to death by asphyxiation if the oxygen content in the area decreases below 18% volume.

11.1.8 Interactive effects

No data available.

11.1.9 Absence of specific data

No data available.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

No data available.

11.2.2. Other information

No data available.

SECTION 12. ECOLOGICAL INFORMATION

12.1. Toxicity

No toxicity for aquatic organisms. The product is not pollutant for air or water.

12.2. Persistence and degradability

No available data.

12.3. Potential for bioaccumulation

No available data.

12.4. Mobility in soil

No available data.

12.5. PBT and vPvB assestment results

No available data.

12.6. Other adverse effects

Not applicable.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Disposal methods
Dispose of in accordance with local and national regulations in use.
Relevant provisions of the harmonized EU legislation and domestic legislation regarding waste.
National legislation in force:
Law no. 211/2011 concerning wastes treatment.
Law no. 265/2006 – The Law on environment protection.
Law no. 249/2015 releated to the packaging and waste packaging management.
GD no. 856/2002 - The evidence of wastes management, with subsequent modifications.
Law on labor security and health no. 319/2006, GD no. 1425/2006 on approving the Methodological Norms for the enforcement of the provisions set by the Law on labor security and health no. 319/2006, GD no.355/2007 on the surveillance of workers' health with subsequent modifications.
Decision no. 1061/2008 on transport of hazardous or non-hazardous wastes on Romanian territory, with subsequent modifications.
UE Legislation in force:
Regulation (EC) no. 1907/2006 of the European Parliament and of the Council regarding the Registration, evaluation authorization and restriction of chemicals (REACH), *with subsequent modifications.*
Regulation (EC) no. 1272/2008 of the European Parliament and of the Council on the classification, labeling and packaging of substances and mixtures, *with subsequent modifications.*
European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).
European Agreement concerning the International Carriage of Dangerous Goods by Rail (RID).

SECTION 14. TRANSPORT INFORMATION

Information concerning classification for:

Road transportation (ADR):

14.1. UN number *or ID number*: 1066 for compressed nitrogen
1977 for refrigerated liquid nitrogen
14.2. UN name for dispatch: COMPRESSED NITROGEN
REFRIGERATED LIQUID NITROGEN
14.3. Transportation hazard class:
Compressed nitrogen: class 2, danger identification no. 20, classification code 1A, transport category 3, hazard label 2.2
Refrigerated liquid nitrogen: class 2, danger identification no. 22, classification code 3A transport category 3, hazard label 2.2
14.4. Special provisions:
Compressed nitrogen: *special provisions: 378, 653, 660, 662*
packaging instructions - P 200
mixed packing provisions - MP 9
loading, unloading, handling – CV9, CV10, CV36

transport category / tunnel restriction code - 3 (E)

Refrigerated liquid nitrogen: special provision: *345, 346,* 593
packaging instructions - P
mixed packing provisions - MP 9
loading, unloading, handling – CV9, CV10, CV36
transport category / tunnel restriction code - 3 (C/E)

Rail transportation (RID):

14.1. UN number *or ID number*: 1066 for compressed nitrogen
1977 for refrigerated liquid nitrogen

14.2. UN name for dispatch: COMPRESSED NITROGEN
REFRIGERATED LIQUID NITROGEN

14.3. Transportation hazard class:

Compressed nitrogen: class 2, danger identification no. 20, classification code 1A, hazard label 2.2+13**,** NHM code 280430

Refrigerated liquid nitrogen: class 2, danger identification no. 22, classification code 3A, hazard label 2.2+13, NHM code 280430

14.4. Special provisions:

Compressed nitrogen: *special provisions: 378, 392, 653, 662*
packaging instructions - P 200
mixed packing provisions - MP 9
loading, unloading, handling – CW9, CW10, CW36
transport category - 3

Refrigerated liquid nitrogen: *special provisions: 345, 346, 593*
packaging instructions - P 203
mixed packing provisions - MP 9
loading, unloading, handling – CW9, CW11, CW30, CW36
transport category - 3

Marine transportation (IMDG/IMO Code):

14.1. UN number *or ID number*: 1066 for compressed nitrogen
1977 for refrigerated liquid nitrogen

14.2. UN name for dispatch: COMPRESSED NITROGEN
REFRIGERATED LIQUID NITROGEN

14.3. Transportation hazard class:

Compressed nitrogen: hazard class 2.2, category A
EmS Fire - F- C, EmS Spiel - S-V

Refrigerated liquid nitrogen: hazard class 2.2, category D
EmS Fire - F- C, EmS Spiel - S-V

14.4. Special provisions:

Compressed nitrogen: Packaging instructions - P 200

Refrigerated liquid nitrogen: Packaging instructions - P 203

14.5. Environmental hazards

According to the criteria of the IMDG Code, nitrogen is not pollutant for the marine aquatic compartment.

14.6. Special precautions for users

Nitrogen is transported in under pressure, rechargeable containers, or tank cars.
UN under pressure, rechargeable containers must bear the clear and legible certification, operation and manufacture marks. These marks must be applied permanently on under pressure containers, and must comply with ADR stipulations.
Vehicles (tanks), carrying nitrogen should be signaled by applying **2** rectangular reflective **orange plates** (front and back), which indicate on the top hazard identification number and on the bottom UN number specific for dangerous substance, of dimensions specified in legislation in use (ADR), labeled so that in case of fire the markings must remain legible for at least 15 minutes (see figure 1 – for liquid nitrogen and figure 2 – for gaseous nitrogen).

Figure 1

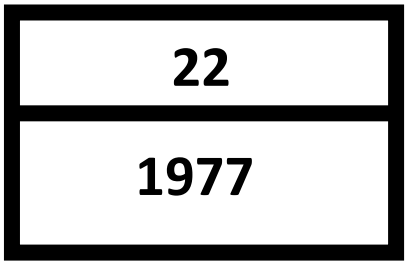

Figure 2

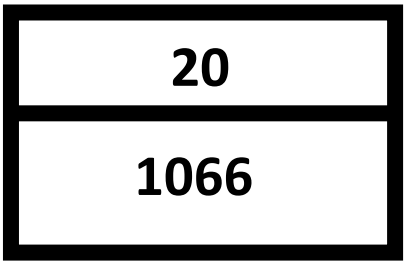

Figure 3

Figure 4

For completing signaled plates will be applied **label plate** in this case: square (with the diagonal in a horizontal position) on a green background, having as conventional sign a white or black cylinder in the upper corner, and in the lower corner the number 2, corresponding to the substance class – figure 3 or figure 4, in sight on the sides and on the backside of the vehicle, applied so that they cannot be removed.
Personnel transporting nitrogen must be trained and examined periodically in this respect by the company where the personnel are employed. The personnel must use adequate individual protective equipment.
It is prohibited to transport any other goods in the vehicles transporting liquid nitrogen cylinders-recipients or tanks.
Before transporting containers, make sure they are tightly fastened and that:

- the container valves are closed and do not present leaks;

- all containers have their valve protection caps installed;
- adequate ventilation is ensured;
- regulations imposed by authorities are respected.

Vehicles transporting nitrogen will not be parked in crowded areas, but in special monitored and safe parking areas designated for this purpose.
All transports will be accompanied by transport documents specific for the transported products, according to the legislation in use.

14.7. *Maritime transport in bulk according to IMO instruments*

Not applicable.

SECTION 15. REGULATORY INFORMATION

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

Relevant information regarding the domestic legislation
Law on labor security and health no. 319/2006, GD no. 1425/2006 on approving the Methodological Norms for the enforcement of the provisions set by the Law on labor security and health no. 319/2006, GD no. 355/2007 on the surveillance of workers' health with subsequent modifications.
Law no. 265/2006 for the amendment of GEO no. 195/2005 on environment protection
Decision no. 1391/2006 for the approval of the Regulation concerning the application of Government Emergency Ordinance no. 195/2002 regarding traffic on public roads, with subsequent amendments and supplements.
ISCIR technical prescriptions in use.
Order no. 2737/17.12.2012 regarding the approval of the Procedure concerning the designation of the bodies in charge with the issuance of the aggregation certificates and of the prototype conformity certificates according to the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), as well as with the inspection for the certification for maintaining the exploitation conformities for the specialized superstructures installed on the road vehicles for the carriage of dangerous goods and of packaging of dangerous goods transported on the road.
Law no. 59/2016 referring to the control of hazards in case of serious accidents involving dangerous substances.
Decision no. 1175/2007 for the approval of the Norms referring to the performance of road transportation activities for dangerous goods in Romania.
Law no. 360/2003 on dangerous substances and preparations republished in 12.03.2014.
Law no. 278/2013 on industrial emissions.
Relevant information regarding the EU legislation
Regulation (EC) no. 1907/2006 of the European Parliament and of the Council regarding the Registration, evaluation authorization and restriction of chemicals (REACH), *with subsequent modifications*.
Regulation (EC) no. 1272/2008 of the European Parliament and of the Council on the classification, labeling and packaging of substances and mixtures, *with subsequent modifications*.

Regulation (EU) no. 286/2011 by the Commission from 10.03.2011 amending Regulation (EC) no. 1272/2008.
Regulation (EU) No. 2019/521 by the Commission from 27 March 2019 amending, for the purposes of its adaptation to technical and scientific progress Regulation (EC) No. 1272/2008.
Regulation (EC) No. 2020/878 of 18.06.2020 amending Regulation (EC) No. 1907/2006 of the European Parliament and of the Council on the registration, evaluation and restriction of chemicals (REACH).
Directive no. 2012/18/UE of the European Parliament and of the Council from 4.07.2012 on the control of major-accident hazards including dangerous substances (SEVESO III).
European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), 2021 edition.
Regulation referring to the International Carriage of Dangerous Goods by Rail (RID), 2021 edition
International Maritime Dangerous Goods (IMDG), 2020 edition.

15.2 Chemical safety assestment

Not applicable.

SECTION 16. ADDITIONAL INFORMATION

a) A clear evidence of added, deleted or modified information

Version (revision, edition) number	Date	Page number	Evolution of the information
edition 5, revision 0	06.01.2014	7, 13	At page 7, chapter 8.2.1. - Organizational measures, Monitoring and intervention plans were modified At page 13 section 15.1 – information regarding national legislation was modified
version 6	23.01.2015	5, 13	At page 5, chapter 7.2 and at page 13, chapter 15.1 - information regarding national legislation was modified
version 7	01.06.2015	1, 2, 10	At page 1 section 1.4 emergency telephone number was modified. At page 2 section 2.1 it was removed classification in accordance with directive 67/548/ EEC. At page 10, chapter 13.1 - Waste treatment methods national legislation was modified. At page 10, section 14 they were added specials provisions for carriage.
version 8	21.07.2016	9, 13	At page 9, section 11 they have introduced additional toxicological data. At page 13, section 15.1 it was introduced Law 360/2003 republished, Regulation no.

			830/2015 and the legislation was amended SEVESO.
version 9	22.02.2017	11, 12, 14	At page 11, in chapter 14.4 was introduced transport category / tunnel code. At page 12, chapter 14.6 it changed the name of the hazard labels in label places, according to ADR 2017. At page 14, chapter 15.1 it changed the edition number ADR, RID, IMDG.
version 10	22.02.2021	9, 11, 13, 16	Change of the drafting framework annex. At page 9 section 9.2 changes due to legislation. At page 11 section 11.2 other hazards information was introduced. At page 13 section 14.4 special provisions ADR, RID has been introduced. At page 16 section 15.1 new legislation has been introduced.

b) List of abbreviations and acronyms used throughout the Safety Data Sheet

ADR	-	European Agreement referring to the International Carriage of Dangerous Goods by Road, 2021 edition
EC	-	European Commission
ECHA	-	European Chemicals Agency
ESIS	-	European Chemical Substances Information System
(FE) EFMA	-	Fertilizers Europe (European Fertilizer Manufacturers Association)
HG	-	Government Decision
IMDG	-	Regulations referring to the maritime transportation of hazardous Substances, 2020 edition
ISCIR	-	State Inspection for the Control of Boilers, Under-Pressure Vessels and Lifting Devices
OMI	-	*International Maritime Organization*
PBT	-	Persistent, Bioaccumulative, Toxic
REACH	-	EC Regulation No. 1907/2006 of the European Parliament and Council concerning the registration, evaluation, authorization and restriction of chemical substances
RID	-	Regulation referring to the International Carriage of Dangerous Goods by Rail (RID), 2021 edition
SDS	-	Safety Data Sheet
SEVESO III	-	European Council Directive no. 2012/18/UE of July 4, 2012 on the control of major-accident hazards involving dangerous substances
SSM	-	Occupational health and safety
STOT	-	Specific target organs of toxicity
vPvB	-	very Persistent, very Bioaccumulative

c) Bibliography

Information used for elaborating the present SDS were taken form the following bibliography:

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Amuliu Proca, Gabriel Stănescu - Substanţe şi produse utilizate în industria chimică-pericol de incendiu - pericol de explozie – toxicitate (Substances and products used in the chemical -industry-fire hazard-explosion hazard-toxicity), 1984

ESIS – European Chemical Substances Information System

Official Journal of the European Union - EU Regulation no. 2020/878 of the European Council of 18.06.2020

Official Journal of the European Union - EC Regulation no. 1907/2006 of the European Parliament and Council concerning the registration, evaluation, authorization and restriction of chemical substances (REACH)

ADR - European Agreement referring to the International Carriage of Dangerous Goods by Road, 2021 edition

RID - Regulation referring to the International Carriage of Dangerous Goods by Rail (RID), 2021 edition

IMDG - Regulations referring to the maritime transportation of hazardous substances, 2020 edition

Relevant hazard statements / Relevant precautionary phrases

The product is not classified according to EC Regulation no. 1272/2008 (CLP).

e) Recommendations concerning training of specialists

The risk of asphyxiation must not be ignored. During training, this aspect will be permanently treated.

Before using this product in a new technological process or lab testing, a compatibility study and a work safety study will be performed.

The information resulted from these studies will underlie the data that will ensure the users and mass media about the lack of any accident or incident risks.

Note:

The information included in this safety data sheet is based on the data available at the time of publication.
The client and the user assume all risks regarding usage, handling and storage of this product.
There are no guarantees for the product in case of improper handling, transport and storage of the product, not complying with the specifications of the Technical Specification and the Safety Data Sheet.