Revision: 01 Date of preparation: 25/10/2023

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

1.1. Product identifier: Helium UN 1956

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

Use of substance / mixture: Industrial General, Balloon Injection

Usage advised against: Do not inhale the product intentionally; choking hazard

1.3. Identification of the supplier of the safety data sheet

Identification: Amtrol-Alfa, SA
Address: Rua de Pontilhões, Apartado 37
4801-909 Brito, Guimarães – Portugal
Email: www.amtrol-alfa.com
Phone N.º: +351 253 540 200

1.4. Emergency telephone number:

Centro de Informação Antivenenos - CIAV +351 808 250 143

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Gases under pressure: Compressed gas. H280- Contains gas under pressure; risk of explosion under the influence of heat.

2.2. Label Elements

Hazard pictograms

Signal Word (CLP): Attention

Hazard statements: H280 - Contains gas under pressure; risk of explosion under the influence of heat.

Precautionary statements

Storage: P403 - Store in a well-ventilated place.

Additional Information: Do not inhale the product intentionally; choking hazard

2.3. Other hazards Asphyxiant at high concentrations.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances/ Mixtures

Name	Product identification	%	Classification according to Regulation (EC) No 1272/2008 (CLP)
Helium	CAS n.º – 7440-59-7 CE n.º – 231-168-5 Índex n.º - Not applicable. REACH n.º - exempt from registration	80%	Press.Gas (Comp.), H280
Nitrogen	CAS nº: 7727-37-9	20%	

Contains no other components or impurities that may modify the product classification.

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

Inhalation	- May suffocate in high concentrations. Symptoms are loss of motility and consciousness, headaches, nausea and loss of coordination. - The victim may not be aware of asphyxiation, as this is caused by the decrease of oxygen in the air, which can lead to an acceleration of breathing and severe headaches. - Remove victim to a well-ventilated place in the event of deficiencies or loss of respiration. Give artificial respiration if victim is not breathing. Keep victim warm and at rest. - Call medical help.
Skin / eyes contact	- No adverse effects are expected for this product.
Ingestion	- Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed
At high concentrations it may cause choking. Symptoms may include loss of consciousness and motor impairment. The victim may not be aware of suffocation. - See section 11.

4.3. Indications about urgent medical care and special treatment needed None.

SECTION 5: FIRE FIGHTING MEASURES

5.1. Extinghishing 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

Specific Hazards	Exposure to fire may cause containers to rupture and / or explode.
Hazardous combustion products	None.

5.3. Advice to firefighters

Specific Methods

- Coordinate fire extinguishing measures with surrounding fire. Exposure to fire and radiation can cause containers to rupture. Cool endangered containers with water spray and protect them. Prevent entry of fire water into sewers and drainage systems.
- If possible, eliminate leakage of the product.
- Use water spray to eliminate fumes if possible.
- Remove containers away from fire area if this can be done without risk.

Personal protective equipment for fire-fighting

- In enclosed spaces, use self-contained breathing apparatus with positive pressure.
- Clothing and equipment (self-contained breathing apparatus) standardized for firefighters.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

- Try to eliminate leakage or spillage.
- Evacuate the area.
- Use positive pressure self-contained breathing apparatus when entering the area unless the atmosphere is found to be breathable.
- Ensure adequate ventilation.
- Act according to your local emergency plan.
- Keep against the wind.
- Oxygen detectors should be used whenever asphyxiating gases can be released.

6.2. Environmental precautions Attempts to eliminate leakage or spillage.

6.3. 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 storage

Safe use of the product

- The substance should be handled in accordance with good industrial hygiene and safety procedures.
- Only trained and experienced persons should handle compressed gases under pressure.
- Consider pressure relief systems in gas installations.
- Verify that the gas system assembly has been, or is regularly checked, before use for leaks.
- Do not smoke while handling the product
- Use equipment with appropriate specification for this product and its delivery pressure and temperature. Contact your supplier if you have any questions.
- Avoid return of water, acids or bases.
- Do not breathe gas.
- Avoid release of the product to the work area.

Safe handling of gas containers

- Follow the supplier's instructions for handling the container
- Do not allow the product to return to the container.
- Protect cylinders from property damage, do not drag, swivel, slide or drop.
- Always use your own equipment for the transport / movement (mechanical, manual, etc.) of the bottles, even at short distance,
- If the user detects any problem with a valve of a bottle in use, stop using it and contact the supplier.
- Never attempt to repair or modify valves in containers or safety devices.
- Damaged valves must be reported immediately to the supplier.
- Keep valve fittings clean, free from contaminants, especially oil and water.
- Always close the container valve after each use and when empty.
- Never attempt to transfer gases from one container to another.
- Never use direct flame or any electrical heating equipment to raise the pressure in the vessel.
- Do not remove identification labels from the contents of the bottles, given by the supplier.
- Prevent water from entering the container.
- Slowly open the valve to avoid pressure shock.

7.2. Conditions for safe storage, including any incompatibilities

- Observe all local regulations and regulations required for the storage of containers.
- Containers should not be stored under conditions that favor corrosion.
- Valve protections of the containers must always be in place.
- The containers should be stored in an upright position and properly secured to prevent them from falling.
- Stored containers should be checked periodically for their general condition and possible leakage.
- Place the container in a well-ventilated place, at temperatures below 50ºCelsius.
- Store containers in a place free from fire hazards and away from heat and ignition sources.
- Keep away from combustible material.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Appropriate technical controls

- Ensure adequate ventilation.
- Pressure systems must be checked for leaks
- Oxygen detectors should be used whenever asphyxiating gases can be released.

8.2. Personal protective equipment

Eye and face protection	Wear safety glasses with side protection
Skin protection	Wear work gloves when handling containers. Wear protective shoes when handling containers.
Respiratory protection	Ensure adequate ventilation. Self-contained breathing apparatus or positive-pressure air lines should be used in oxygen-depleted atmospheres

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Informações sobre propriedades físicas e químicas de base

Appearance	
Physical State 20ºC/ 101.3 kPa	Gss.
Color	Colorless.
Odor	Not detectable by smell.
pH	Not applicable to gases or gas mixture.
MMelting point/ freezing point	-272 ºC
Boiling point	-269 ºC
Flash point	Not applicable to gases or gas mixture.
Evaporation rate	Not applicable to gases or gas mixture.
Flammability (solid / gas)	Non flammable.
Vapor pressure (20ºC)	Not applicable
Vapor pressure (50 ° C)	Not applicable.
Gaseous density	Not applicable.
Relative density, liquid (water = 1)	Not applicable.
Relative density, gas (air = 1)	0,14
Solubility in water	1,5 mg/L
Partition coefficient n-octanol / water (Log Kow)	Not applicable
Auto-ignition temperature	Non flammable.
Decomposition temperature	Not applicable.
Viscosity	No data available.
Explosive properties	Not applicable.
Oxidizing properties	Not applicable.

9.2. Other information Molecular Weight: 4mg/mol
Critical temperature (ºC): -268ºC

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity	No danger of reactivity other than those described in the 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 on the premises.
10.5. Incompatible materials	None. For additional compatibility information refer to ISO 11114.
10.6. Hazardous decomposition products	None.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity	No toxicological effects are to be expected from this product if the occupational exposure limit values are not exceeded.
Skin corrosion / irritation	No known effects from this product.
Serious eye damage / eye irritation	No known effects from this product.
Respiratory or skin sensitization	No known effects from this product.
Mutagenicity	No known effects from this product.
Carcinogenicity	No known effects from this product.
Toxic for reproduction - fertility	No known effects from this product.
Toxic to reproduction - fetus	No known effects from this product.
Specific target organ toxicity (STOT) - single exposure	No known effects from this product.
Specific target organ toxicity (STOT) - repeated exposure	No known effects from this product.
Aspiration hazard	Not applicable to gases or gas mixture.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Evaluation	Product without ecological risk.
EC50 48 hrs – Daphnia magna (mg/l)	No data available.
EC50 72 hrs – Algae (mg/l)	No data available.
CL50 96 hrs – Peixe (mg/l)	No data available.

12.2. Persistence and degradability Product without ecological risk.

12.3. Bioaccumulative potential No data available.

12.4. Mobility in Soil It is difficult to produce soil or water pollution due to its high volatility. Partition on improbable ground.

12.5. Results for PBT e vPvB assesment No data available.

12.5. Other adverse effects

Other side effects	No known effects from this product.
Effect on the ozone layer	None.
Effect on global warming	None.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods Open in a well-ventilated place.
Do not discharge into a location where its accumulation could be dangerous.

13.2. Further information The treatment and disposal of waste by third parties must be carried out in accordance with local and / or national legislation.

SECTION 14: TRANSPORT INFORMATION

14.1. UN Number and transport hazard classes

	Carriage / Expedition by Road / Rail (ADR / RID)	Transport / dispatch by air (ICAO-TI / IATA-DGR)	Transport / Shipping by Sea (IMGD)
UN Number	1956	1956	1956
UN proper shipping name	HELIUM, COMPRESSED	HELIUM, COMPRESSED	HELIUM, COMPRESSED
Labeling			
Class or division	2.2	2.2	2.2
Classification code	1A		
Hazard Number	20		
Transport category	3 (E)		

14.2. Other transport information

- Do not carry the product in vehicles where the cab is not separated from the loading area.
- Ensure that the driver knows the hazards of the load and how to operate in the event of an accident.
- Ensure that the valve outlet plug (if fitted) is correctly positioned, check that the device is properly ventilated, check that the containers are securely attached, check that the valves are closed and that they are not leaking, check that the device (where applicable) is properly installed.
- Comply with current shipping regulations.

SECTION 15: REGULATORY INFORMATION

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

UE regulation	
Restrictions on use	None.
SEVESO Directive: 2012/18 / EU (Seveso III)	Not covered.

15.2. Chemical safety assesment No chemical risk assessment is required for this product.

SECTION 16: OTHER INFORMATION

16.2. Abreviaturas e Acrónimos

CLP	Classification Labelling Packaging – Regulation (EC) No 1272/2008 on the classification, labeling and packaging
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals – Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals.
CAS N.º	Assigned number by Chemical Abstract Service (USA)
LC50	Lethal concentration for 50% of the population tested.
PBT	Persistent, bioaccumulative and toxic.
vPvB	Very Persistent and Very Bioaccumulative.
STOT-SE	Specific Target Organ Toxicity; Single Exposure
STOT-RE	Specific Target Organ Toxicity; RepeatedExposure
EN	European Standard.
ADR	European Road Transport Agreement for Dangerous Goods.
IATA	International Air Transport Association
IMDG code	Inetrnational Maritime Dangerous Goods Code
RID	Regulation on the international carriage of dangerous goods by road

16.1. Training Instructions

All personnel responsible for the handling and use of this product should receive prior training regarding safety standards and usage regulations.

Disclaimer of Liability

Before using this product, carefully examine the safety procedures for its handling, storage and transportation.
The information in this document is believed to be accurate based on information available at the time of its completion.
No liability will be accepted in case of damages or accidents resulting from its use. Reading this document does not invalidate or supersede compliance with current rules and regulations.