

## Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

### Product Identifier:

**Identification as on the label/Trade name:** Helium-3.

**Molecular weight:** 3.016

**Chemical formula:**  $^3\text{He}$

**Synonyms:** Helium, Isotopic Helium,  $^3\text{He}$ , He-3

### Details of the supplier of the Safety Data Sheet:

Neonest AB  
Storgatan 70C, Solna  
SE-17152  
Sweden

### Contact details:

+46-76-219-9731

### 24-hour Emergency Contact:

Swedish Poisons Centre  
Phone: 112 - Ask for Poisons Information, 112 – begär Giftinformation.

### Other International Contacts:

CHEMTREC 24-hour: +1-703-741-5500 (US + Worldwide)  
NHS: 111 (UK)  
Charite: +49 30 450 531 000 (Netherlands)  
INTCF: +34 917689800 (Spain)  
CapTv: +33 1 40 05 48 48 (France)

## Section 2: Hazards Identification

### Classification of the substances or mixture:

**The mixture is classified according to:** Regulation EC 1272/2008 [EU-GHS/CLP]

### **Hazard classes/Hazard categories:**

Compressed Gas

### **Hazard statement:**

H280

### Label elements:

#### **Hazard pictograms:**



**Signal Words:** Warning.

### **Hazard Statements:**

H280 Contains gas under pressure; may explode if heated.

**Precautionary Statements:**

P410 + P403 Protect from sunlight. Store in a well-ventilated place.

**Section 3: Composition/Information on Ingredients****Substance/Mixture:** Substance.**Ingredients:**

Substance name (IUPAC/EC)	CAS-No.	Concentration % by weight	Classification EC1272/2008
	EC-No.		
(3He)helium	14762-55-1	>99.9%	Press. Gas (Comp.) H280
	238-822-9		

For explanation of abbreviations see Section 16.

**Section 4: First-Aid Measures****Description of first aid measures:****Eye Contact:** None under normal use. Get medical attention if symptoms occur.**Skin Contact:** None under normal use. Get medical attention if symptoms occur.**Inhalation:** PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF INHALATION OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious inhalation victims should be assisted to an uncontaminated area and inhale fresh air. If breathing is difficult, administer oxygen. Unconscious persons should be moved to an uncontaminated area and, as necessary, given artificial resuscitation and supplemental oxygen. Treatment should be symptomatic and supportive.**Ingestion:** None under normal use. Get medical attention if symptoms occur. Treat symptomatically.**Most important symptoms and effects, both acute and delayed:****Inhalation:** Principal route of exposure is inhalation. Simple asphyxiant. May cause suffocation by displacing the oxygen in the air. Exposure to oxygen deficient atmosphere (<19.5%) may cause dizziness, drowsiness, nausea, vomiting, excess salivation, diminished mental alertness, loss of consciousness and death. Exposure to atmospheres containing 8-10% or less oxygen will bring about unconsciousness without warning and so quickly that the individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death.**Indication of any immediate medical attention and special treatment needed:** None known.**Section 5: Fire-Fighting Measures****Extinguisher media:****Flammable Properties:** Not flammable.**Suitable Extinguishing Media:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.**Sensitivity to Mechanical Impact:** None.**Sensitivity to Static Discharge:** None.**Specific Hazards Arising from the Chemical:** Cylinders may rupture under extreme heat. Continue to cool fire-exposed cylinders until flames are extinguished. Damaged cylinders should be handled only by specialists.**Protective Equipment and Precautions for Firefighters:** As in any fire, wear Self-Contained Breathing Apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## Section 6: Accidental Release Measures

### **Personal precautions, protective equipment and emergency procedures:**

Ensure adequate ventilation. Evacuate personnel to safe areas. Use personal protective equipment. Monitor oxygen level.

**Environmental precautions:** Prevent spreading of vapours through sewers, ventilation systems and confined areas.

### **Methods and materials for containment and cleaning up:**

Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk. If leak is in container or container valve, contact the appropriate emergency telephone number in Section 1.

## Section 7: Handling and Storage

### **Precautions for safe handling:**

**Handling:** Use only in ventilated areas. Never attempt to lift a cylinder by its valve protection cap. Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distance, use a cart designed to transport cylinders. Use equipment rated for cylinder pressure. Use backflow preventive device in piping. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing leak to occur.

Use an adjustable strap wrench to remove over-tight or rusted caps. Close valve after each use and when empty. If user experiences any difficulty operating cylinder valve, discontinue use and contact supplier. Never put cylinders into trunks of cars or unventilated areas of passenger vehicles. Never attempt to refill a compressed gas cylinder without the owner's written consent. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit. Keep out of the reach of children. Handle in accordance with good industrial hygiene and safety practice.

### **Conditions for safe storage, including any incompatibilities:**

Protect from physical damage. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Store in cool, dry, well-ventilated area of non-combustible construction, away from heavily trafficked areas and emergency exits. Keep at temperatures below 52°C / 125°F. Full and empty cylinders should be segregated.

## Section 8: Exposure Controls/Personal Protection

### **Control parameters:**

**Occupational exposure limits:** This product does not contain any hazardous materials with occupational exposure limits established by the region-specific regulatory bodies.

### **Exposure controls:**

**Appropriate engineering controls:** Local exhaust ventilation to prevent accumulation of high concentrations and maintain air-oxygen levels at or above 19.5%. Ensure adequate ventilation, especially in confined areas.

### **Individual protection measures, such as personal protective equipment:**

**Eye/Face Protection:** Wear protective eyewear (safety glasses).

**Skin and Body Protection:** Work gloves and safety shoes are recommended when handling cylinders.

**Respiratory Protection:** No special protective equipment required.

**Emergency Use:** Use positive pressure airline respirator with escape cylinder or Self-Contained Breathing Apparatus for oxygen-deficient atmospheres (<19.5%).

**Hygiene Measures:** Wear suitable gloves and eye/face protection.

## Section 9: Physical and Chemical Properties

### Information on basic physical and chemical properties

**Appearance (form):** Gas.

**Colour:** Colourless.

**Odour:** Odourless.

**Odour threshold:** No data available.

**pH (concentration):** Not applicable.

**Melting point/range (°C):** No data available.

**Boiling point/range (°C):** No data available.

**Flash point (°C):** No data available.

**Evaporation rate:** No data available.

**Flammability (solid, gas):** Not applicable.

**Ignition temperature (°C):** No data available.

**Upper/lower flammability/explosive limits:** No data available.

**Vapour pressure (20 °C):** No data available.

**Vapour density:** No data available.

**Relative density (25 °C):** No data available.

**Water solubility (g/L) at 20 °C:** 8.61 m<sup>3</sup>/1 kg water

**n-Octanol/Water partition coefficient:** No data available.

**Auto-ignition temperature:** No data available.

**Decomposition temperature:** No data available.

**Viscosity, dynamic (mPa s):** No data available.

**Explosive properties:** The substance or mixture is not classified as explosive.

**Oxidising properties:** The substance or mixture is not classified as oxidizing.

## Section 10: Stability and Reactivity

**Stability:** Stable.

**Incompatible Products:** None known.

**Conditions to Avoid:** None known.

**Hazardous Decomposition Products:** None known, based on information supplied.

**Hazardous Polymerization:** Hazardous polymerization does not occur.

## Section 11: Toxicological Information

### Information on toxicological effects:

Not classified based on available information.

### Classification according to GHS (1272/2008/EG, CLP)

**Skin corrosion/irritation:**

Not classified based on available information.

**Serious eye damage/eye irritation:**

Not classified based on available information.

**Respiratory or skin sensitisation:**

Not classified based on available information.

**Germ cell mutagenicity:**

Not classified based on available information.

**Carcinogenicity:**

Not classified based on available information.

**Reproductive toxicity:**

Not classified based on available information.

**Specific target organ toxicity – single exposure (STOT):**

Not classified based on available information.

**Specific target organ toxicity (STOT) – repeated exposure:**

Not classified based on available information.

**Aspiration toxicity:**

Not classified based on available information.

## Section 12: Ecological Information

**Toxicity:** No data available.

**Persistence and degradability:** No data available.

**Bioaccumulative potential:** No data available.

**Mobility in soil:** No data available.

**Results of PBT& vPvB assessment:** No data available.

**Other adverse effects:** No data available.

## Section 13: Disposal Considerations

**Waste Disposal Methods:** Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED, AND VALVE PROTECTION CAP IN PLACE, to the supplier for proper disposal.

## Section 14: Transport Information

**UN number:** 1046

**UN proper shipping name:** HELIUM, COMPRESSED.

**Transport hazard class:** Class 2.2

**Transport hazard label:**



**Marine pollutant:** No.

## Section 15: Regulatory Information

### EU regulations:

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**  
Not listed.

**Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**  
Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry**  
Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**  
Not listed.

### Authorisations:

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**  
Not listed.

### Restrictions on use:

**Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use**  
Not regulated.

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**  
Not listed.

**Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens and mutagens at work**  
Not regulated.

**Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding.**  
Not regulated.

### Other EU regulations:

**Directive 2012/18/EU on major accident hazards involving dangerous substances**  
Not listed.

**Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.**  
Always applicable.

**Directive 94/33/EC on the protection of young people at work**

Not listed.

**Additional Information:**

**OSHA Hazards:** Compressed Gas.

**SARA 313 Components:** Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazards:** Sudden Release of Pressure Hazard.

**Clean Water Act:** This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61):** This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

**CERCLA/SARA:** This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional or state level pertaining to releases of this material.

**California Prop. 65 Components:** This product does not contain any Proposition 65 chemicals.

**Canadian Regulations:** WHMIS Classification: A

**Chemical safety assessment:** No Chemical Safety Assessment has been carried out.

**Section 16: Other Information****List of abbreviations:**

ACGIH American Conference of Governmental Industrial Hygienists  
ADR European Agreement Concerning the International Carriage of Dangerous Goods by Road  
ALARA As Low As Is Reasonably Achievable  
AMU Atomic Mass Unit  
ANSI American National Standards Institute  
BLS Basic Life Support  
CAM Continuous Air Monitor  
CAS Chemical Abstracts Service (division of the American Chemical Society)  
CEN European Committee for Standardization  
CERCLA Comprehensive Environmental Response Compensation and Liability Act  
CLP Classification, Labelling and Packaging (European Union)  
CPR Controlled Products Regulations (Canada)  
CWA Clean Water Act (USA)  
DAC Derived Air Concentration (USA)  
DOE United States Department of Energy (USA)  
DOT United States Department of Transportation (USA)  
DSL Domestic Substances List (Canada)  
EC50 Half Maximal Effective Concentration  
EINECS European Inventory of Existing Commercial Chemical Substances  
EHS Environmentally Hazardous Substance  
ELINCS European List of Notified Chemical Substances  
EMS Emergency Response Procedures for Ships Carrying Dangerous Goods  
EPA Environmental Protection Agency (USA)  
EPCRA Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986

GHS Globally Harmonized System  
HMIS Hazardous Materials Identification System (USA)  
IARC International Agency for Research on Cancer  
IATA International Air Transport Association  
IBC Intermediate Bulk Containers  
ICAO International Civil Aviation Organization  
IDLH Immediately Dangerous to Life or Health  
IMDG International Maritime Code for Dangerous Goods  
LC50 Lethal concentration, 50 percent  
LD50 Lethal dose, 50 percent  
LDLO Lethal Dose Low  
LOEC Lowest-Observed-Effective Concentration  
MARPOL International Convention for the Prevention of Pollution from Ships  
MSHA Mine Safety and Health Administration (USA)  
NCRP National Council on Radiation Protection & Measurements (USA)  
NDSL Non-Domestic Substances List (Canada)  
NFPA National Fire Protection Association (USA)  
NIOSH National Institute for Occupational Safety and Health (USA)  
NOEC No Observed Effect Concentration  
N.O.S. Not Otherwise Specified  
NRC Nuclear Regulatory Commission (USA)  
NTP National Toxicology Program (USA)  
OSHA Occupational Safety and Health Administration (USA)  
PBT Persistent Bioaccumulative and Toxic Chemical  
PEL Permissible Exposure Limit  
PIH Poisonous by Inhalation Hazard  
RCRA Resource Conservation and Recovery Act (USA)  
RCT Radiation Control Technician  
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (Europe)  
RID Regulations Concerning the International Transport of Dangerous Goods by Rail  
RTECS Registry of Toxic Effects of Chemical Substances  
SARA Superfund Amendments and Reauthorization Act (USA)  
TDG Transportation of Dangerous Goods (Canada)  
TIH Toxic by Inhalation Hazard  
TLV Threshold Limit Value  
TPQ Threshold Planning Quantity  
TSCA Toxic Substances Control Act  
TWA Time Weighted Average  
UN United Nations (Number)  
VOC Volatile Organic Compound  
vPvB Very Persistent Very Bioaccumulative Chemical  
WGK Wassergefährdungsklassen (Germany: Water Hazard Classes)  
WHMIS Workplace Hazardous Materials Information System

**References:**

Not available.

**Full text of any H-statements not written out in full under Sections 2 to 15:**

H280 Contains gas under pressure; may explode if heated.

**Revision information:**



None.

**Training information:**

Follow training instructions when handling this material.

**Further Information:**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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