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

Product Identifier:
Identification as on the label/Trade name: Krypton, Enriched Krypton.
Molecular weight: 83.80
Chemical formula: Kr
Synonyms: None.

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: Pressurized Gas
Hazard statements:
H280 Contains gas under pressure; may explode if heated.

Label elements:
Hazard pictograms:

Signal Words: Warning.
Hazard Statements:
H280 Contains gas under pressure; may explode if heated.
Safety Data Sheet for Krypton, Enriched Krypton
According to ISO 11014:2010

First Print Date: 5-Mar-2015
Revision Date: 15-Aug-2019
Version: 1.1.1.

Precautionary Statements: None.
Other hazards: None known.

Section 3: Composition/Information on Ingredients

Substance/Mixture: Substance.
Ingredients:

<table>
<thead>
<tr>
<th>Substance name (IUPAC/EC)</th>
<th>CAS-No.</th>
<th>Molecular weight</th>
<th>Concentration % by weight</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EC-No.</td>
<td></td>
<td></td>
<td>EC1272/2008</td>
</tr>
<tr>
<td>Krypton</td>
<td>7439-90-9</td>
<td>83.80</td>
<td>&gt;99%</td>
<td>Press. Gas (Comp.) H280</td>
</tr>
<tr>
<td></td>
<td>231-098-5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For explanation of abbreviations see Section 16.

Section 4: First-Aid Measures

Description of first aid measures:

In case of inhalation: Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given assisted respiration and supplemental oxygen. Further treatment should be symptomatic and supportive.

In case of skin contact: If frostbite or freezing occurs, flush immediately with plenty of lukewarm water (105-115 °F; 41-46 °C). Do not use hot water. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

In case of eye contact: Flush eyes with plenty of water.

In case of ingestion: If a large amount is swallowed, get medical attention.

Most important symptoms and effects, both acute and delayed:

Inhalation: Effects of exposure to high concentrations so as to displace the oxygen in the air necessary for life are headache, dizziness, laboured breathing and eventual unconsciousness.

Eyes: Short-Term Exposure: Frostbite. Long-Term Exposure: No information is available.

Skin contact: Short-Term Exposure: Frostbite. Long-Term Exposure: No information is available.

Ingestion: No significant adverse effects.

Indication of any immediate medical attention and special treatment needed: Treat symptomatically. Show this safety data sheet to a physician or emergency room.

Section 5: Fire-Fighting Measures

Extinguisher media:

Suitable extinguisher media: Carbon dioxide, regular dry chemical. Large fires: Use regular foam or flood with fine water spray.

Unsuitable extinguishing media: None known.

Special hazards arising from the mixture: None known.

Advice for fire-fighters: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Withdraw immediately in case of rising sound from
venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (½ mile). Use extinguishing agents appropriate for surrounding fire. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Do not get water directly on material. Reduce vapours with water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Consider downwind evacuation if material is leaking.

**Further information:** Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

### Section 6: Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures:**
- **Personal precautions:** Stop leak if possible without personal risk. Evacuate all personnel from affected area, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Use appropriate protective equipment.
- **Environmental precautions:** Prevent spreading of vapours through sewers, ventilation systems, and confined areas.

**Methods for containment and cleaning up:**
If leak is in container or container valve, contact your closest supplier location or call the emergency telephone number listed herein.

**Reference to other sections:**
Treat recovered material as described in the section "Disposal considerations".

### Section 7: Handling and Storage

**Precautions for safe handling:**
- **Advice on safe handling:** Use only in well-ventilated areas. Valve protection caps must remain in place unless cylinder is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure-reducing regulator when connecting cylinder to lower pressure piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from cylinder. Use a check valve or trap in the discharge line to prevent hazardous backflow into the cylinder.
- **Hygiene measures:** Do not eat, drink or smoke when using this product.

**Conditions for safe storage, including incompatibilities:**
- **Requirements for storage areas and containers:** Protect cylinders from physical damage. Store in cool, dry, well-ventilated area, away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125 °F (52 °C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a “first in - first out” inventory system to prevent full cylinders from being stored for excessive periods of time.

### Section 8: Exposure Controls/Personal Protection

**Control parameters:**
- **Occupational exposure limits:** Contains no substances with occupational exposure limit values.

**Exposure controls:**
- **Appropriate engineering controls:** Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.
Individual protection measures, such as personal protective equipment:

Eye/face protection:
Gas: Eye protection not required, but recommended.
Liquid: Wear splash-resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye-wash fountain and quick-drench shower in the immediate work area.

Hand protection: Wear insulated gloves.

Body protection:
Gas: Protective clothing is not required.
Liquid: Wear appropriate protective, cold-insulating clothing.

Respiratory protection: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use. Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode. Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode. For Unknown Concentrations or Immediately Dangerous to Life or Health - Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.

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.
Molecular Weight: 83.80
pH (concentration): No data available.
Melting point/range (°C): No data available.
Boiling point/range (°C): -153.3 °C
Freezing point (°C): -157.2 °C
Flash point (°C): No data available.
Evaporation rate: No data available.
Flammability (solid, gas): No data available.
Ignition temperature (°C): No data available.
Upper/lower flammability/explosive limits: No data available.
Vapour pressure (20 °C): No data available.
Vapour density: 2.92
Relative density (25 °C): No data available.
Water solubility (g/L) at 20 °C: Negligible.
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

Reactivity: No dangerous reaction known under conditions of normal use.
Chemical stability: Stable under normal conditions.
Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.
Conditions to avoid: Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.
Incompatible materials: None known.
Hazardous decomposition products: None known.

Section 11: Toxicological Information

Information on toxicological effects:
Krypton is nontoxic, but the liberation of a large amount in a confined area could displace the amount of oxygen in air necessary to support life.

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:
IARC: Not listed as a carcinogen or potential carcinogen.
NTP: Not listed as a carcinogen or potential carcinogen.
OSHA: Not listed as a carcinogen or potential carcinogen.
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: Not relevant.
Other adverse effects: No data available.
Section 13: Disposal Considerations

**Waste treatment methods:** Do not attempt to dispose of waste or unused quantities. Return in the shipping container, properly labelled, with any valve outlet plugs or caps secured and valve protection cap in place, to your supplier. For emergency disposal assistance, contact your closest supplier location or call the emergency telephone number listed herein.

Section 14: Transport Information

**DOT:**
- **Proper Shipping Name:** KRYPTON, COMPRESSED.
- **Hazard Class:** 2.2
- **UN Number:** 1056
- **Shipping Label:** Non-flammable, non-poisonous gas.
- **Hazard Label:**

![Hazard Label Image]

**IATA:**
- **Proper Shipping Name:** KRYPTON, COMPRESSED.
- **Hazard Class:** 2.2
- **UN Number:** 1056
- **Shipping Label:** Non-flammable, non-poisonous gas.

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.
  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.

Other regulations: The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

U.S. Federal Regulations:
TSCA: Krypton (CAS No. 7439-90-9) is listed.
SARA 311/312: Sudden release of pressure hazard; immediate (acute) health hazard.

International Regulations:
Canada: Krypton (CAS No. 7439-90-9) is listed on the Canadian DSL WHMIS Classification: Class A – Compressed Gas.

EU Regulations:
EC No. 1272/2008 [CLP]: Compressed Gas H280.
National regulations: Listed on AICS, IECSC, Korean ECL, PICCS.

US State Regulations: Not listed in California Proposition 65’s carcinogens list, developmental toxicity list, reproductive toxicity (female) list or reproductive toxicity (male) list.

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
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.