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

Product Identifier:

Identification as on the label/Trade name: Rubidium (100%), Enriched Rubidium.
Molecular weight: 85.47
Chemical formula: Rb
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:	Hazard statement:
Water Reactive (Category 1)	H260
Skin Corrosive (Category 1B)	H314

Label elements:

Hazard pictograms:

Signal Words: Danger.

Hazard Statements:
H260 In contact with water releases flammable gasses which may ignite spontaneously.
H314 Causes severe skin burns and eye damage.
EUH014 Reacts violently with water.
Precautionary Statements:
P223 Do not allow contact with water.
P231 + P232 Handle and store contents under inert gas/protect from moisture.
P260 Do not breathe dust or mists.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302 + P335 + P334 IF ON SKIN: Brush off loose particles from skin and immerse in cool water.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P402 + P404 Store in a dry place. Store in a closed container.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local and national regulations.
Other hazards: None known.

Section 3: Composition/Information on Ingredients

Substance/Mixture: Substance.
Ingredients:

Substance name (IUPAC/EC)	**CAS-No.** / **EC-No.**	**Molecular weight**	**Concentration % by weight**	**Classification** EC1272/2008
Rubidium	7440-17-7 / 231-126-6	85.47	>99%	Water-react. 1 H260 Skin Corr. 1B H314

For explanation of abbreviations see Section 16.

Section 4: First-Aid Measures

Description of first aid measures:

In case of inhalation: Remove from exposure to fresh air immediately. Supply fresh air. If required, provide artificially. Seek immediate medical advice!
In case of skin contact: Immediately wash with water and soap and rinse thoroughly. Get medical attention.
In case of eye contact: Rinse opened eye for several minutes under running water. Seek medical attention.
In case of ingestion: Seek medical attention immediately! Keep the victim calm. Give the victim water (only if conscious). Induce vomiting only if directed by medical personnel.

Most important symptoms and effects, both acute and delayed:

Eyes: Severe thermal burns, corrosion and ulceration of the eyes may occur on direct contact.
Skin contact: Severe thermal burns, corrosion and ulceration of the skin may occur on direct contact.

Ingestion: Ingestion will cause burns and perforations of the gastrointestinal tract.
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: DO NOT USE WATER. Use Class D metal fire agent, dry salt or sand.
Unsuitable extinguishing media: Water, carbon dioxide & halogenated extinguisher. Contact with water releases explosive hydrogen. Burning material may release toxic fumes.
Special hazards arising from the mixture: Material may ignite spontaneously on contact with air.
Advice for fire-fighters: As in any fire, wear a self-contained breathing apparatus in pressure demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Runoff from fire control or dilution water may cause pollution.
Further information: None.

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:

Personal precautions: Wear protective equipment as indicated in Section 8. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources.
Environmental precautions: Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. Local authorities should be advised if significant spillages cannot be contained.

Methods for containment and cleaning up:

Methods for cleaning up: Pick up mechanically. Dispose of contaminated material as waste according to Section 13. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation. Do not flush with water or aqueous cleansing agents.

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: The material will react with air and moisture. Handle this material under an inert atmosphere of nitrogen or argon. Ensure good ventilation at the workplace. Keep container tightly sealed.
Hygiene measures: Do not eat, drink or smoke when using this product.

Conditions for safe storage, including incompatibilities:

Requirements for storage areas and containers: Store in a cool, dry place in tightly closed containers. Keep container tightly sealed. Store away from water/moisture. Store away from oxidizing agents. Do not store together with acids. Store away from halogens. Store this material under an inert atmosphere of nitrogen or argon.

Section 8: Exposure Controls/Personal Protection

Control parameters:

Occupational exposure limits: Contains no substances with occupational exposure limit values.

Exposure controls:

Appropriate engineering controls: Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Individual protection measures, such as personal protective equipment:

Eye/face protection: Safety glasses, tightly sealed goggles, full face protection.
Hand protection: Impervious gloves.
Body protection: Wear appropriate protective clothing to prevent skin exposure.
Respiratory protection: Use NIOSH/MSHA-approved respirator when high concentrations are present.

Section 9: Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance (form): Solid.
Colour: Silver.
Odour: Odourless.
Odour threshold: No data available.
Molecular Weight: 85.47
pH (concentration): No data available.
Melting point/range (°C): 38.9 °C
Boiling point/range (°C): 688 °C
Freezing point (°C): No data available.
Flash point (°C): No data available.
Evaporation rate: No data available.
Flammability (solid, gas): Contact with water liberates extremely flammable gases.
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): 1.532 g/cc
Water solubility (g/L) at 20 °C: Reacts violently.
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: Moisture sensitive, pyrophoric.
Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.
Conditions to avoid: Water/moisture, air.
Incompatible materials: Oxidizing agents, alcohols, acids, halogens, carbon dioxide.
Hazardous decomposition products: Flammable hydrogen with moisture, caustic oxide with air. Decomposition will not occur if used and stored according to specifications.

Section 11: Toxicological Information

Information on toxicological effects:

Acute Toxicity: LD_{50} Intraperitoneal (mouse) 1,200 mg/kg

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

Skin corrosion/irritation:
Not classified based on available information.
Serious eye damage/eye irritation:
Causes severe skin burns and eye damage.
Respiratory or skin sensitisation:
Not classified based on available information.
Germ cell mutagenicity:
Not classified based on available information.
Carcinogenicity:
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
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: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult local or national regulations to ensure proper disposal.

Section 14: Transport Information

DOT:

Proper Shipping Name: RUBIDIUM.
Hazard Class: 4.3
UN Number: 1423
Packing Group: I
Hazard Labels:

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.

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.
Hazard Symbols: C Corrosive, F Highly flammable.
Risk Phrases: 14/15 Reacts violently with water, liberating extremely flammable gases. 34 Causes burns.
Safety Phrases:
7/8 Keep container tightly closed and dry.
20 When using, do not eat or drink.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
30 Never add water to this product.
33 Take precautionary measures against static discharges.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
43 In case of fire, use sand or powdered extinguishing agent. Never use water.
45 In case of accident or if you feel unwell, seek medical advice immediately.
National Regulations: All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory.
SARA 302 Components: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards: Reactivity Hazard, Acute Health Hazard.
Massachusetts Right To Know Components: No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right To Know Components: Rubidium / CAS No. 7440-17-7 / Revision Date 2007-03-01
New Jersey Right To Know Components: Rubidium / CAS No. 7440-17-7 / Revision Date 2007-03-01
California Prop. 65 Components: This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.
National regulations: Follow national regulation for work with chemical agents.
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:

H260 In contact with water releases flammable gasses which may ignite spontaneously.
H314 Causes severe skin burns and eye damage.
EUH014 Reacts violently with water.

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.