SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006 Version 5.0 Revision Date 29.10.2012

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

1.1 Product identifiers

Product name : Lithium metal
Product Number : 52-7498
Brand : Rapid
Index-No. : 003-001-00-4
CAS-No. : 7439-93-2

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

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Rapid Electronics,
Severalls Lane,
Colchester,
Essex,
CO4 5JS, United Kingdom
Telephone : +44 (0) 1206 751166
Fax : +44 (0) 1206 751188
E-mail address : sales@rapidelec.co.uk

1.4 Emergency telephone number

Emergency Phone # : +44 (0) 1206 751166

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]
Substances, which in contact with water, emit flammable gases (Category 1)
Skin corrosion (Category 1B)

Classification according to EU Directives 67/548/EEC or 1999/45/EC
Contact with water liberates extremely flammable gases. Causes burns. Reacts violently with water.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram
Signal word Danger
Hazard statement(s)
H260 In contact with water releases flammable gases which may ignite spontaneously.
H314 Causes severe skin burns and eye damage.
Precautionary statement(s)
P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire.
P231 + P232 Handle under inert gas. Protect from moisture.
P280 Wear protective gloves/ protective clothing/ eye protection/ face
Supplemental Hazard information (EU)
EUH014 Reacts violently with water.

Hazard symbol(s)

R14/15 Reacts violently with water, liberating extremely flammable gases.
R34 Causes burns.

S-phrase(s)
S 8 Keep container dry.
S43 In case of fire, use fire-fighting equipment on basis class D.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances
Formula : Li
Molecular Weight : 6.94 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>7439-93-2</td>
</tr>
<tr>
<td>EC-No.</td>
<td>231-102-5</td>
</tr>
<tr>
<td>Index-No.</td>
<td>003-001-00-4</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
Large doses of lithium ion have caused dizziness and prostration, and can cause kidney damage if sodium intake is limited. Dehydration, weight loss, dermatological effects, and thyroid disturbances have been reported. Central nervous system effects that include slurred speech, blurred vision, sensory loss, ataxia, and convulsions may occur. Diarrhea, vomiting, and neuromuscular effects such as tremor, clonus, and
hyperactive reflexes may occur as a result of repeated exposure to lithium ion., Cough, Shortness of breath, Headache, Nausea

4.3 Indication of any immediate medical attention and special treatment needed
no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use approved class D extinguishers or smother with dry sand, dry ground limestone, or dry clay. Dry powder

Unsuitable extinguishing media
Do not use water, foam, or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Lithium oxides

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking.

7.2 Conditions for safe storage, including any incompatibilities
Store under argon. Handle under argon. Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Never allow product to get in contact with water during storage.

7.3 Specific end uses
no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.
8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
- Face shield and safety glasses
- Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin protection
- Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

- Immersion protection
  - Material: Nitrile rubber
  - Minimum layer thickness: 0.11 mm
  - Break through time: > 480 min
  - Material tested: Dermatril® (Aldrich Z677272, Size M)

- Splash protection
  - Material: Nitrile rubber
  - Minimum layer thickness: 0.11 mm
  - Break through time: > 30 min
  - Material tested: Dermatril® (Aldrich Z677272, Size M)

Immersion protection data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method: EN374.
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
- Complete suit protecting against chemicals, Flame retardant protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
- Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Appearance</td>
<td>Form: granular</td>
</tr>
<tr>
<td>b) Odour</td>
<td>no data available</td>
</tr>
<tr>
<td>c) Odour Threshold</td>
<td>no data available</td>
</tr>
<tr>
<td>d) pH</td>
<td>no data available</td>
</tr>
<tr>
<td>e) Melting point/freezing point</td>
<td>Melting point/range: 180 °C - lit.</td>
</tr>
<tr>
<td>f) Initial boiling point and boiling range</td>
<td>1,342 °C - lit.</td>
</tr>
</tbody>
</table>
g) Flash point not applicable
h) Evaporation rate no data available
i) Flammability (solid, gas) no data available
j) Upper/lower flammability or explosive limits no data available
k) Vapour pressure 1 hPa at 723 °C
l) Vapour density no data available
m) Relative density 0.534 g/mL at 25 °C
n) Water solubility no data available
o) Partition coefficient: n-octanol/water no data available
p) Autoignition temperature no data available
q) Decomposition temperature no data available
r) Viscosity no data available
s) Explosive properties no data available
t) Oxidizing properties no data available

9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity no data available

10.2 Chemical stability no data available

10.3 Possibility of hazardous reactions
Reacts violently with water.

10.4 Conditions to avoid
Exposure to moisture.

10.5 Incompatible materials
Forms shock-sensitive mixtures with certain other materials., Iron and iron salts., Heavy metals, Phosphorus, Sulphur compounds, Oxygen, Nickel, Do not store near acids., Metals

10.6 Hazardous decomposition products
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity no data available

LD50 Intraperitoneal - mouse - 1,000 mg/kg

Skin corrosion/irritation no data available

Serious eye damage/eye irritation no data available
Respiratory or skin sensitization
no data available

Germ cell mutagenicity
Genotoxicity in vivo - Human - Unreported
Cytogenetic analysis

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion May be harmful if swallowed. Causes burns.
Skin May be harmful if absorbed through skin. Causes skin burns.
Eyes Causes eye burns.

Signs and Symptoms of Exposure
Large doses of lithium ion have caused dizziness and prostration, and can cause kidney damage if sodium intake is limited. Dehydration, weight loss, dermatological effects, and thyroid disturbances have been reported. Central nervous system effects that include slurred speech, blurred vision, sensory loss, ataxia, and convulsions may occur. Diarrhea, vomiting, and neuromuscular effects such as tremor, clonus, and hyperactive reflexes may occur as a result of repeated exposure to lithium ion., Cough, Shortness of breath, Headache, Nausea

Additional Information
RTECS: OJ5540000

12. ECOLOGICAL INFORMATION

12.1 Toxicity
no data available

12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
no data available

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
no data available

12.6 Other adverse effects
no data available
13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

**Product**
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**
Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number
ADR/RID: 1415  
IMDG: 1415  
IATA: 1415

14.2 UN proper shipping name
ADR/RID: LITHIUM  
IMDG: LITHIUM  
IATA: Lithium  
Passenger Aircraft: Not permitted for transport

14.3 Transport hazard class(es)
ADR/RID: 4.3  
IMDG: 4.3  
IATA: 4.3

14.4 Packaging group
ADR/RID: I  
IMDG: I  
IATA: I

14.5 Environmental hazards
ADR/RID: no  
IMDG Marine pollutant: no  
IATA: no

14.6 Special precautions for user
no data available

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available

15.2 Chemical Safety Assessment
no data available

16. OTHER INFORMATION

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.