1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name: INDUSTRIAL NICKEL CADMIUM STORAGE BATTERY W/ POCKET PLATE
Synonym(s): BATTERIES WET, FILLED WITH ALKALI ELECTRIC STORAGE • F../..H1C TYPES • FP CELLS •
GAZ/VARTA - KGM, VGM, KGL, VGL,KH, RH, KL, RL, KLP, RLP, KDNFF, RFNG, DKFMH, GRHM, KMP,
RMP, SOL-G, SOL-R, TP, T, TSP AND TS RANGE • NICKEL CADMIUM RECHARGEABLE AIRCRAFT
BATTERIES (FORMERLY)

1.2 Uses and uses advised against

Use(s): BATTERIES

1.3 Details of the supplier of the safety data sheet

Supplier name: ENERSYS AUSTRALIA PTY LTD
Address: 46 Egerton St, Silverwater, NSW, Australia, 2128
Telephone: (02) 9739 9999
Fax: (02) 9739 9900
Email: danny.ross@enersys.com.au
Website: http://www.enersys-hawker.com

1.4 Emergency telephone number(s)

Emergency: (02) 9739 9999

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

GHS Classification(s):
- Acute Toxicity: Oral: Category 4
- Skin Corrosion/Irritation: Category 1B
- Acute Toxicity: Inhalation: Category 4
- Carcinogenicity: Category 1B
- Toxic to Reproduction: Category 1A
- Aquatic Toxicity (Chronic): Category 2

2.2 Label elements

Signal word: DANGER

Pictograms:

Hazard statement(s):
- H302: Harmful if swallowed.
- H314: Causes severe skin burns and eye damage.
- H332: Harmful if inhaled.
- H350: May cause cancer.
- H360: May damage fertility or the unborn child.
- H411: Toxic to aquatic life with long lasting effects.

Prevention statement(s):
- P201: Obtain special instructions before use.
- P202: Do not handle until all safety precautions have been read and understood.
- P260: Do not breathe dust/fume/gas/mist/vapours/spray.
- P264: Wash thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
INDUSTRIAL NICKEL CADMIUM STORAGE BATTERY W/ POCKET PLATE

Use only outdoors or in a well-ventilated area.

Avoid release to the environment.

Wear protective gloves/protective clothing/eye protection/face protection.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove to fresh air and keep at rest in a position 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.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P310 Immediately call a POISON CENTER or doctor/physician.
P321 Specific treatment is advised - see first aid instructions.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.

Store locked up.

Dispose of contents/container in accordance with relevant regulations.

2.3 Other Hazards

The materials contained in this product may only represent a hazard if the integrity of the cell or battery is compromised; physically or electrically abused.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS number</th>
<th>EC number</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>POTASSIUM HYDROXIDE</td>
<td>1310-58-3</td>
<td>215-181-3</td>
<td>30 - 40%</td>
</tr>
<tr>
<td>IRON</td>
<td>7439-89-6</td>
<td>231-096-4</td>
<td>20 - 25%</td>
</tr>
<tr>
<td>CADMIUM</td>
<td>7440-43-9</td>
<td>231-152-8</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>NICKEL</td>
<td>7440-02-0</td>
<td>231-111-4</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>COBALT</td>
<td>7440-48-4</td>
<td>231-158-0</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>LITHIUM HYDROXIDE MONOHYDRATE</td>
<td>1310-66-3</td>
<td>215-183-4</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>STAINLESS STEEL</td>
<td>Not Available</td>
<td>Not Available</td>
<td>7 - 15%</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

No information provided.

Treat symptomatically.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

No information provided.

5.2 Special hazards arising from the substance or mixture

No information provided.

5.3 Advice for firefighters

No information provided.
5.4 Hazchem code
2W

W  Fine Water Spray.

Risk of violent reaction or explosion. Wear liquid-tight chemical protective clothing and breathing apparatus. Contain spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
No information provided.

6.2 Environmental precautions
No information provided.

6.3 Methods of cleaning up
No information provided.

6.4 Reference to other sections
No information provided.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
No information provided.

7.2 Conditions for safe storage, including any incompatibilities
No information provided.

7.3 Specific end use(s)
No information provided.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 Control parameters

<table>
<thead>
<tr>
<th>Substance</th>
<th>Reference</th>
<th>TWA ppm</th>
<th>mg/m³</th>
<th>STEL ppm</th>
<th>mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium and compounds (as Cd)</td>
<td>SWA (AUS)</td>
<td>--</td>
<td>0.01</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Cobalt, metal dust &amp; fume (as Co)</td>
<td>SWA (AUS)</td>
<td>--</td>
<td>0.05</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Iron oxide fume (Fe₂O₃) (as Fe)</td>
<td>SWA (AUS)</td>
<td>--</td>
<td>5</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Iron salts, soluble, as Fe</td>
<td>SWA (AUS)</td>
<td>--</td>
<td>1</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Nickel, metal</td>
<td>SWA (AUS)</td>
<td>--</td>
<td>1</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Nickel, soluble compounds (as Ni)</td>
<td>SWA (AUS)</td>
<td>--</td>
<td>0.1</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Potassium hydroxide</td>
<td>SWA (AUS)</td>
<td>--</td>
<td>2</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Biological limits</th>
<th>Reference</th>
<th>Determinant</th>
<th>Sampling time</th>
<th>BEI</th>
</tr>
</thead>
<tbody>
<tr>
<td>CADMIUM</td>
<td>ACGIH BEI</td>
<td>Cadmium in urine</td>
<td>Not critical</td>
<td>5 µg/g creatinine</td>
</tr>
<tr>
<td></td>
<td>ACGIH BEI</td>
<td>Cadmium in blood</td>
<td>Not critical</td>
<td>5 µg/L</td>
</tr>
<tr>
<td>COBALT</td>
<td>ACGIH BEI</td>
<td>Cobalt in urine</td>
<td>End of shift at end of workweek</td>
<td>15 µg/L</td>
</tr>
<tr>
<td></td>
<td>ACGIH BEI</td>
<td>Cobalt in blood</td>
<td>End of shift at end of workweek</td>
<td>1 µg/L</td>
</tr>
</tbody>
</table>
Product name: INDUSTRIAL NICKEL CADMIUM STORAGE BATTERY W/ POCKET PLATE

8.2 Exposure controls

Engineering Controls: No information provided.

PPE

Eye/face: No PPE specified.
Hand: Wear PVC or rubber gloves.
Body: No PPE specified.
Respiratory: No PPE specified.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance: CLEAR LIQUID (BATTERY ENCLOSED)
Odour: ODOURLESS
Odour Threshold: NOT AVAILABLE
Flammability: NON FLAMMABLE
Flash Point: NOT RELEVANT
Boiling Point: NOT AVAILABLE
Melting Point: NOT AVAILABLE
Evaporation Rate: NOT AVAILABLE
pH: NOT AVAILABLE
Specific Gravity: 1.2
Solubility (water): SOLUBLE
Vapour Density: NOT AVAILABLE
Vapour Pressure: NOT AVAILABLE
Upper Explosion Limit: NOT RELEVANT
Lower Explosion Limit: NOT RELEVANT
Partition Coefficient: NOT AVAILABLE
Autoignition Temperature: NOT AVAILABLE
Decomposition Temperature: NOT AVAILABLE
Viscosity: NOT AVAILABLE
Explosive Properties: NOT AVAILABLE
Oxidising Properties: NOT AVAILABLE

9.2 Other information

No information provided.

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information in sections 10.2 to 10.6.

10.2 Chemical stability

No information provided.

10.3 Possibility of hazardous reactions

No information provided.

10.4 Conditions to avoid

No information provided.

10.5 Incompatible materials

No information provided.

10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.
11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Health Hazard Summary
No information provided.

No information provided.
No information provided.
No information provided.
No information provided.

POTASSIUM HYDROXIDE (1310-58-3)
LD50 (Ingestion): 333 mg/kg (rat)

IRON (7439-89-6)
LD50 (Ingestion): 20000 mg/kg (guinea pig)

CADMIUM (7440-43-9)
LC50 (Inhalation): 25 mg/m³/30M (rat)
LD50 (Ingestion): 890 mg/kg (mouse)
LD50 (Intraperitoneal): 5700 ug/kg (mouse)

NICKEL (7440-02-0)
LD50 (Ingestion): > 9000 mg/kg (Sprague-Dawley rat)
LD50 (Intraperitoneal): 250 mg/kg (rat)
LDLo (Ingestion): 5 mg/kg (guinea pig)
LDLo (Subcutaneous): 7.5 mg/kg (rabbit)
TCLo (Inhalation): 15 mg/m³/91W-I (guinea pig - tumors)
TDLo (Ingestion): 158 mg/kg (rat - foetotoxic)

COBALT (7440-48-4)
LD50 (Ingestion): 6170 mg/kg (rat)
LD50 (Intraperitoneal): 100 mg/kg (rat)
LDLo (Ingestion): 750 mg/kg (rabbit)
LDLo (Intraperitoneal): 100 mg/kg (mouse)
LDLo (Intravenous): 100 mg/kg (mouse)

LITHIUM HYDROXIDE MONOHYDRATE (1310-66-3)
LD50 (Ingestion): 368 mg/kg (rat)

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No information provided.

12.2 Persistence and degradability
No information provided.

12.3 Bioaccumulative potential
No information provided.

12.4 Mobility in soil
No information provided.

12.5 Results of PBT and vPvB assessment
No information provided.

12.6 Other adverse effects
No information provided.
13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
No information provided.

Legislation
Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

<table>
<thead>
<tr>
<th>Land Transport (ADG)</th>
<th>Sea Transport (IMDG/IMO)</th>
<th>Air Transport (IATA/ICAO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2795</td>
<td>2795</td>
<td>2795</td>
</tr>
</tbody>
</table>

14.1 UN number 2795
14.2 UN proper shipping name BATTERIES, WET, FILLED WITH ALKALI, electric storage
14.3 Transport hazard classes
   DG Class 8 8 8
   Subsidiary risk(s) None Allocated - -
14.4 Packing group III III III
14.5 Environmental hazards None Allocated
14.6 Special precautions for user
   Hazchem Code 2W
   EMS F-A, S-B

15. REGULATORY INFORMATION

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

Poison schedule
Classified as a Schedule 6 Poison using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications
C - Corrosive
Carc. - Carcinogen
N - Dangerous for the environment
Repr. - Reproductive toxin
Xn - Harmful

Risk phrases
R20/22: Harmful by inhalation and if swallowed.
R34: Causes burns.
R40: Limited evidence of a carcinogenic effect.
R51/53: Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.
R60: May impair fertility.
R61: May cause harm to the unborn child.

Safety phrases
S1/2: Keep locked up and out of reach of children.
S22: Do not breathe dust.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.
INDUSTRIAL NICKEL CADMIUM STORAGE BATTERY W/ POCKET PLATE

S45: In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).

S60: This material and its container must be disposed of as hazardous waste.

S61: Avoid release to the environment. Refer to special instructions/safety data sheets.

### WHS regulatory information

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>CAS number</th>
<th>Regulation</th>
<th>Details</th>
</tr>
</thead>
</table>
| CADMIUM         | 7440-43-9  | Restricted Hazardous Chemicals | Cadmium & its compounds. For abrasive blasting >0.1%.
|                 |            | Schedule 14 - Health Monitoring | Cadmium |
| COBALT          | 7440-48-4  | Restricted Hazardous Chemicals | Cobalt & its compounds. For abrasive blasting >0.1%.
| NICKEL          | 7440-02-0  | Restricted Hazardous Chemicals | Nickel & its compounds. For abrasive blasting >0.1%.

### Inventory listing(s)

AUSTRALIA: AICS (Australian Inventory of Chemical Substances)
All components are listed on AICS, or are exempt.

### 15.2 Chemical safety assessment

No information provided.

### 16. OTHER INFORMATION

**Additional information**

**HEALTH EFFECTS FROM EXPOSURE:**
It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a ChemAlert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

**PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:**
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

**Abbreviations**
- ACGIH: American Conference of Governmental Industrial Hygienists
- CAS #: Chemical Abstract Service number - used to uniquely identify chemical compounds
- CNS: Central Nervous System
- EC No.: EC No - European Community Number
- EMS: Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
- GHS: Globally Harmonized System
- GTEPG: Group Text Emergency Procedure Guide
- IARC: International Agency for Research on Cancer
- LC50: Lethal Concentration, 50% / Median Lethal Concentration
- LD50: Lethal Dose, 50% / Median Lethal Dose
- mg/m³: Milligrams per Cubic Metre
- OEL: Occupational Exposure Limit
- pH: relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
- ppm: Parts Per Million
- STEL: Short-Term Exposure Limit
- STOT-RE: Specific target organ toxicity (repeated exposure)
- STOT-SE: Specific target organ toxicity (single exposure)
- SUSMP: Standard for the Uniform Scheduling of Medicines and Poisons
- SWA: Safe Work Australia
PRODUCT NAME

INDUSTRIAL NICKEL CADMIUM STORAGE BATTERY W/ POCKET PLATE

TLV
Threshold Limit Value

TWA
Time Weighted Average

REPORT STATUS

This ChemAlert report has been independently compiled by RMT’s scientific department utilising the original Safety Data Sheet ("SDS") for the product provided to RMT by the manufacturer. The information is based on the latest chemical and toxicological research and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. It is an independent collation by RMT of information obtained from the original SDS for this product. Its content has not been authorised or verified by the manufacturer / distributor of the chemical to which it relates.

This ChemAlert report does not constitute the manufacturer's original SDS and is not intended to be a replacement for same. It is provided to subscribers of ChemAlert as a reference tool only, is not all-inclusive and does not represent any guarantee as to the properties of the product. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer.

While RMT has taken all due care to include accurate and up-to-date information in this ChemAlert report, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this ChemAlert report.

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End of Report