

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.

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- P271 Use only outdoors or in a well-ventilated area.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response statement(s)

- 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.

Storage statement(s)

- P405 Store locked up.

Disposal statement(s)

- P501 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

3.1 Substances / Mixtures

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

4. FIRST AID MEASURES

No information provided.

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.

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5.4 Hazchem code

2W

- 2 Fine Water Spray.
- W 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

Exposure standards

| Substance | Reference | TWA | | STEL | |
|---|-----------|-----|-------------------|------|-------------------|
| | | ppm | mg/m ³ | ppm | mg/m ³ |
| Cadmium and compounds (as Cd) | SWA (AUS) | -- | 0.01 | -- | -- |
| Cobalt, metal dust & fume (as Co) (h) | SWA (AUS) | -- | 0.05 | -- | -- |
| Iron oxide fume (Fe ₂ O ₃) (as Fe) | SWA (AUS) | -- | 5 | -- | -- |
| Iron salts, soluble, as Fe | SWA (AUS) | -- | 1 | -- | -- |
| Nickel, metal | SWA (AUS) | -- | 1 | -- | -- |
| Nickel, soluble compounds (as Ni) | SWA (AUS) | -- | 0.1 | -- | -- |
| Potassium hydroxide | SWA (AUS) | -- | 2 | -- | -- |

Biological limits

| Ingredient | Reference | Determinant | Sampling time | BEI |
|------------|-----------|------------------|---------------------------------|-------------------|
| CADMIUM | ACGIH BEI | Cadmium in urine | Not critical | 5 µg/g creatinine |
| | ACGIH BEI | Cadmium in blood | Not critical | 5 µg/L |
| COBALT | ACGIH BEI | Cobalt in urine | End of shift at end of workweek | 15 µg/L |
| | ACGIH BEI | Cobalt in blood | End of shift at end of workweek | 1 µg/L |

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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.

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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.

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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



| | Land Transport (ADG) | Sea Transport (IMDG/IMO) | Air Transport (IATA/ICAO) |
|--|--|-----------------------------|------------------------------|
| 14.1 UN number | 2795 | 2795 | 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. |

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- 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

| Ingredient name | CAS number | Regulation | Details |
|-----------------|------------|---------------------------------|---|
| 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/m ³ | 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 |

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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.

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Prepared By Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmt.com.au

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End of Report