

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

### 1.1 Product identifier

**Product name** SAFT NICKEL CADMIUM AIRCRAFT BATTERY/CELL (9008-4)  
**Synonym(s)** NSN: XXXX-14-284-8610  
9008-4 • AIRCRAFT NICKEL CADMIUM BATTERIES • NICKEL CADMIUM AIRCRAFT BATTERY • NICKEL CADMIUM AIRCRAFT BATTERY/CELL

### 1.2 Uses and uses advised against

**Use(s)** BATTERIES

### 1.3 Details of the supplier of the safety data sheet

**Supplier name** SAFT AUSTRALIA  
**Address** Unit 18, 167 Prospect Hwy, Seven Hills, NSW, Australia, 2141  
**Telephone** (02) 9674 0700  
**Fax** (02) 9620 9990  
**Email** Not supplied  
**Website** <http://www.saftbatteries.com>

### 1.4 Emergency telephone number(s)

**Emergency** +61 3 9573 3112 (24hrs) or 1800 039 008 (24hrs)

## 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  
Acute Toxicity: Skin: Category 4  
Skin Corrosion/Irritation: Category 1A  
Skin Sensitisation: Category 1  
Serious Eye Damage / Eye Irritation: Category 1  
Acute Toxicity: Inhalation: Category 4  
Respiratory Sensitisation: Category 1  
Carcinogenicity: Category 2  
Toxic to Reproduction: Category 1B  
Specific Target Organ Systemic Toxicity (Repeated Exposure): Category 1  
Aquatic Toxicity (Chronic): Category 1

### 2.2 Label elements

**Signal word**

**DANGER**

**Pictograms**



**Hazard statement(s)**

H302 Harmful if swallowed.  
H312 Harmful in contact with skin.  
H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.  
H332 Harmful if inhaled.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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- H351 Suspected of causing cancer.
- H360 May damage fertility or the unborn child.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H410 Very toxic to aquatic life with long lasting effects.

**Prevention statement(s)**

- 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.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P285 In case of inadequate ventilation wear respiratory 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**

No information provided.

**3. COMPOSITION/ INFORMATION ON INGREDIENTS**

**3.1 Substances / Mixtures**

Ingredient	CAS number	EC number	Content
NICKEL HYDROXIDE	12054-48-7	235-008-5	19 - 36%
POTASSIUM HYDROXIDE	1310-58-3	215-181-3	13 - 19%
CADMIUM HYDROXIDE	21041-95-2	244-168-5	8 - 16%
COPPER	7440-50-8	231-159-6	9 - 11%
CADMIUM	7440-43-9	231-152-8	Not Available
COBALT (II) HYDROXIDE	21041-93-0	244-166-4	Not Available
NICKEL	7440-02-0	231-111-4	Not Available
STEEL	Not Available	Not Available	22 - 34%
UNDECANOIC ACID, 11-AMINO-, HOMOPOLYMER	25587-80-8	Not Available	11 - 13%

**4. FIRST AID MEASURES**

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#### **4.1 Description of first aid measures**

<b>Eye</b>	Exposure is considered unlikely unless casing is damaged. Flush gently with running water. Seek medical attention if irritation develops.
<b>Inhalation</b>	Exposure is considered unlikely. Due to product form / nature of use, an inhalation hazard is not anticipated.
<b>Skin</b>	Exposure is considered unlikely unless casing is damaged. Gently flush affected areas with water. Seek medical attention if irritation develops.
<b>Ingestion</b>	For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting. Ingestion is considered unlikely due to product form.
<b>First aid facilities</b>	Eye wash facilities and safety shower should be available.

#### **4.2 Most important symptoms and effects, both acute and delayed**

Adverse effects not expected from this product. Exposure to battery contents may cause irritation and potential burns.

#### **4.3 Immediate medical attention and special treatment needed**

Treat symptomatically.

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## **5. FIREFIGHTING MEASURES**

### **5.1 Extinguishing media**

Use an extinguishing agent suitable for the surrounding fire.

### **5.2 Special hazards arising from the substance or mixture**

Non flammable. May explode if exposed to high temperatures due to pressure build up in battery casing.

### **5.3 Advice for firefighters**

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas. CAUTION: Batteries may explode.

### **5.4 Hazchem code**

2R

2 Fine Water Spray.

R Wear liquid-tight chemical protective clothing and breathing apparatus. Dilute spill and run-off.

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## **6. ACCIDENTAL RELEASE MEASURES**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

### **6.2 Environmental precautions**

Prevent product from entering drains and waterways.

### **6.3 Methods of cleaning up**

If battery casing is damaged and contents released, contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

### **6.4 Reference to other sections**

See Sections 8 and 13 for exposure controls and disposal.

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## **7. HANDLING AND STORAGE**

### **7.1 Precautions for safe handling**

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

### **7.2 Conditions for safe storage, including any incompatibilities**

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs.

### **7.3 Specific end use(s)**

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No information provided.

**8. EXPOSURE CONTROLS/ PERSONAL PROTECTION**

**8.1 Control parameters**

**Exposure standards**

Substance	Reference	TWA		STEL	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Cadmium and compounds (as Cd)	SWA (AUS)	--	0.01	--	--
Copper (fume)	SWA (AUS)	--	0.2	--	--
Copper, dusts & mists (as Cu)	SWA (AUS)	--	1	--	--
Iron oxide fume (Fe <sub>2</sub> O <sub>3</sub> ) (as Fe)	SWA (AUS)	--	5	--	--
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
CADMIUM HYDROXIDE	ACGIH BEI	Cadmium in blood	Not critical	5 µg/L
	ACGIH BEI	Cadmium in urine	Not critical	5 µg/g creatinine

**8.2 Exposure controls**

**Engineering Controls** Avoid inhalation. Use in well ventilated areas. Maintain fume levels below the recommended exposure standard.

**PPE**

- Eye/Face** Wear safety glasses.
- 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**

<b>Appearance</b>	BATTERY ARTICLE
<b>Odour</b>	SLIGHT ODOUR
<b>Odour Threshold</b>	NOT AVAILABLE
<b>Flammability</b>	NON FLAMMABLE
<b>Flash Point</b>	NOT RELEVANT
<b>Boiling Point</b>	NOT AVAILABLE
<b>Melting Point</b>	NOT AVAILABLE
<b>Evaporation Rate</b>	NOT AVAILABLE
<b>pH</b>	NOT AVAILABLE
<b>Specific Gravity</b>	1.17 to 1.25
<b>Solubility (water)</b>	SOLUBLE (Electrolyte)
<b>Vapour Density</b>	NOT AVAILABLE
<b>Vapour Pressure</b>	0.26 kPa @ 20°C

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<b>Upper Explosion Limit</b>	NOT RELEVANT
<b>Lower Explosion Limit</b>	NOT RELEVANT
<b>Partition Coefficient</b>	NOT AVAILABLE
<b>Autoignition Temperature</b>	NOT AVAILABLE
<b>Decomposition Temperature</b>	NOT AVAILABLE
<b>Viscosity</b>	NOT AVAILABLE
<b>Explosive Properties</b>	NOT AVAILABLE
<b>Oxidising Properties</b>	NOT AVAILABLE

**9.2 Other information**

<b>% Volatiles</b>	NOT AVAILABLE
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**10. STABILITY AND REACTIVITY**

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**10.1 Reactivity**

Carefully review all information in sections 10.2 to 10.6.

**10.2 Chemical stability**

Stable under recommended conditions of storage.

**10.3 Possibility of hazardous reactions**

Hazardous polymerization is not expected to occur.

**10.4 Conditions to avoid**

Avoid heat, sparks, open flames and other ignition sources.

**10.5 Incompatible materials**

Battery cell is encased, however contents may be incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), alkalis (e.g. sodium hydroxide), heat and ignition sources.

**10.6 Hazardous decomposition products**

May evolve toxic gases if heated to decomposition.

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**11. TOXICOLOGICAL INFORMATION**

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**11.1 Information on toxicological effects**

<b>Health hazard summary</b>	Due to the product form (encased battery) adverse health effects are not anticipated unless casing is deliberately broken or damaged, and contact with contents occurs. Battery contents may be corrosive and cause eye or skin burns. Cadmium, cadmium compounds, nickel and nickel compounds are classified as carcinogenic to humans (IARC Group 1). However, due to product form, exposure to contents is not anticipated.
<b>Eye</b>	Exposure considered unlikely. Product may present a hazard if battery ruptures. Contact with contents may cause pain, redness and possible burns with prolonged contact.
<b>Inhalation</b>	Liquid encased in battery casing. Over exposure to battery contents may result in respiratory irritation and possible lung damage.
<b>Skin</b>	Exposure considered unlikely. Product may present a hazard if battery ruptures. Contact with battery contents may result in irritation, redness, sensitisation and possible burns with prolonged contact.
<b>Ingestion</b>	Exposure considered unlikely. Product may present a hazard if battery ruptures. Ingestion may result in burns to the mouth, throat and gastrointestinal tract.
<b>Toxicity data</b>	NICKEL HYDROXIDE (12054-48-7) LC50 (Inhalation): 1200 mg/m <sup>3</sup> /4 hours (rat) LD50 (Ingestion): 1515 mg/kg (rat) LD50 (Skin): > 2000 mg/kg (rat) LD50 (Subcutaneous): 50 mg/kg (mouse) TDLo (Intramuscular): 0.48 mg/kg (rat) POTASSIUM HYDROXIDE (1310-58-3)

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LD50 (Ingestion): 333 mg/kg (rat)  
 COPPER (7440-50-8)  
 LD50 (Skin): > 2000 mg/kg (rat)  
 CADMIUM (7440-43-9)  
 LC50 (Inhalation): 25 mg/m<sup>3</sup>/30M (rat)  
 LD50 (Ingestion): 890 mg/kg (mouse)  
 LD50 (Intraperitoneal): 5700 ug/kg (mouse)  
 COBALT (II) HYDROXIDE (21041-93-0)  
 LD50 (Ingestion): > 5000 mg/kg (rat)  
 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/m<sup>3</sup>/91W-I (guinea pig - tumors)  
 TDLo (Ingestion): 158 mg/kg (rat - foetotoxic)  
 STEEL (Not Available)  
 LD50 (Ingestion): 30000 mg/kg (rat)

**12. ECOLOGICAL INFORMATION**

**12.1 Toxicity**

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**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**

**Waste disposal** Reuse or recycle where possible. Return to manufacturer/supplier. Contact your state EPA or the manufacturer for additional information.  
**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)
<b>14.1 UN number</b>	2795	2795	2795

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**14.2 UN proper shipping name** BATTERIES, WET, FILLED WITH ALKALI, electric storage

**14.3 Transport hazard classes**

<b>DG Class</b>	8	8	8
<b>Subsidiary risk(s)</b>	None Allocated	-	-

**14.4 Packing group**

None Allocated	-	-
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**14.5 Environmental hazards**

None Allocated

**14.6 Special precautions for user**

<b>Hazchem Code</b>	2R	
<b>EMS</b>		F-A, S-B

**15. REGULATORY INFORMATION**

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

**Poison schedule** A poison schedule number has not been allocated to this product 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
- T - Toxic
- Xi - Irritant
- Xn - Harmful

**Risk phrases**

R20/21/22:	Harmful by inhalation, in contact with skin and if swallowed.
R35:	Causes severe burns.
R40:	Limited evidence of a carcinogenic effect.
R41:	Risk of serious damage to eyes.
R42/43:	May cause sensitisation by inhalation and skin contact.
R48/23:	Toxic: danger of serious damage to health by prolonged exposure through inhalation.
R50/53:	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R61:	May cause harm to the unborn child.

**Safety phrases**

S25:	Avoid contact with eyes.
S40:	To clean the floor and all objects contaminated by this material use [appropriate material to be specified by the manufacturer].
S45:	In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).

**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
CADMIUM HYDROXIDE	21041-95-2	Restricted Hazardous Chemicals	Cadmium & its compounds. For abrasive blasting >0.1%.
COBALT (II) HYDROXIDE	21041-93-0	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%.
NICKEL HYDROXIDE	12054-48-7	Restricted Hazardous Chemicals	Nickel & its compounds. For abrasive blasting >0.1%.

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**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** EXPOSURE STANDARDS - TIME WEIGHTED AVERAGES: Exposure standards are established on the premise of an 8 hour work period of normal intensity, under normal climatic conditions and where a 16 hour break between shifts exists to enable the body to eliminate absorbed contaminants. In the following circumstances, exposure standards must be reduced: Strenuous work conditions; hot, humid climates; high altitude conditions; extended shifts (which increase the exposure period and shorten the period of recuperation).

WORKPLACE CONTROLS AND PRACTICES: Unless a less toxic chemical can be substituted for a hazardous substance, ENGINEERING CONTROLS are the most effective way of reducing exposure. The best protection is to enclose operations and/or provide local exhaust ventilation at the site of chemical release. Isolating operations can also reduce exposure. Using respirators or protective equipment is less effective than the controls mentioned above, but is sometimes necessary.

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.

<b>Abbreviations</b>	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 <sup>3</sup>	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
	TLV	Threshold Limit Value
	TWA	Time Weighted Average

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**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**