

SAFETY DATA SHEET

Product Name **STAINLESS STEEL POWDER**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier name AUSTRALIAN METAL POWDERS SUPPLIES
Address 32 Carrington Road, Guildford, NSW, 2161, AUSTRALIA
Telephone (02) 9681 6155
Fax (02) 9681 6092
Emergency 13 11 26 (Poisons Information Centre)
Email sales@metalpowders.com.au
Web site <http://www.metalpowders.com.au/>
Synonym(s) AMPS STAINLESS STEEL POWDER
Use(s) CHEMICAL APPLICATIONS • INDUSTRIAL APPLICATIONS • METALLURGY APPLICATIONS • SURFACE COATING
SDS date 19 March 2014

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

RISK PHRASES

R40 Limited evidence of a carcinogenic effect.
R43 May cause sensitisation by skin contact.
R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.

SAFETY PHRASES

S2 Keep out of reach of children.
S22 Do not breathe dust.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S45 In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN number None Allocated **DG class** None Allocated
Packing group None Allocated **Subsidiary risk(s)** None Allocated
Hazchem code None Allocated

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	Identification	Classification	Content
CHROMIUM	CAS: 7440-47-3 EC: 231-157-5	Not Available	10 to 37%
NICKEL	CAS: 7440-02-0 EC: 231-111-4	Carc.;R40 Xn;R43 T;R48/23	8 to 25%
COPPER	CAS: 7440-50-8 EC: 231-159-6	Not Available	<4%
MOLYBDENUM	CAS: 7439-98-7 EC: 231-107-2	Not Available	<4%
SILICON	CAS: 7440-21-3 EC: 231-130-8	Not Available	<4%

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MANGANESE	CAS: 7439-96-5 EC: 231-105-1	Not Available	<3%
BORON	CAS: 7440-42-8 EC: 231-151-2	Not Available	<2%
IRON	CAS: 7439-89-6 EC: 231-096-4	Not Available	Remainder

4. FIRST AID MEASURES

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).
Advice to doctor	Treat symptomatically.
First aid facilities	Eye wash facilities and safety shower should be available.

5. FIRE FIGHTING MEASURES

Flammability	Non flammable. May evolve toxic nickel oxide when heated to decomposition. Very finely divided nickel metal in the fully reduced state can smoulder in the presence of oxygen or air. Dust may be explosive at high concentrations and/or in confined areas. Prevent contamination of drains or waterways, absorb runoff with sand or similar.
Fire and explosion	Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. 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.
Extinguishing	Use an extinguishing agent suitable for the surrounding fire.
Hazchem code	None Allocated

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Wear Personal Protective Equipment (PPE) as detailed in Section 8 of this SDS.
Environmental precautions	Prevent product from entering drains and waterways.
Methods of cleaning up	Contain spillage, then collect and place in suitable containers for disposal. Avoid generating dust.
References	See Sections 8 and 13 for exposure controls and disposal.

7. STORAGE AND HANDLING

Storage	Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. If stored in bulk, minimise dust generation by dampening with water or covering with a tarp or similar. If stored in packages, ensure packages are adequately labelled, and check regularly for leaks or spills.
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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Borates, anhydrous	SWA (AUS)	--	1	--	--
Chromium Metal	SWA (AUS)	--	0.5	--	--
Copper (fume)	SWA (AUS)	--	0.2	--	--
Copper, dusts & mists (as Cu)	SWA (AUS)	--	1	--	--
Iron oxide fume (Fe ₂ O ₃) (as Fe)	SWA (AUS)	--	5	--	--
Iron salts, soluble, as Fe	SWA (AUS)	--	1	--	--
Manganese, dust & compounds (as Mn)	SWA (AUS)	--	1	--	--
Manganese, fume (as Mn)	SWA (AUS)	--	1	--	3
Molybdenum, insoluble compounds (as Mo)	SWA (AUS)	--	10	--	--
Molybdenum, soluble compounds (as Mo)	SWA (AUS)	--	5	--	--
Nickel, metal	SWA (AUS)	--	1	--	--
Nickel, soluble compounds (as Ni)	SWA (AUS)	--	0.1	--	--
Silicon	SWA (AUS)	--	10	--	--

Biological limits

Ingredient	Reference	Determinant	Sampling Time	BEI
CHROMIUM	ACGIH BEI	Total chromium in urine	End of shift at end or workweek	25 µg/L
	ACGIH BEI	Total chromium in urine	Increase during shift	10 µg/L

Engineering controls

Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain dust / fume levels below the recommended exposure standard.

PPE

- Eye / Face** Wear dust-proof goggles.
- Hands** Wear PVC or rubber gloves.
- Body** Wear coveralls.
- Respiratory** Where an inhalation risk exists, wear a Class P2 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	GREY TO SILVER COLOURED POWDER
Odour	SLIGHT ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	1535°C (Iron)
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Specific gravity	2.40 to 2.60
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE

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% Volatiles NOT AVAILABLE

10. STABILITY AND REACTIVITY

Chemical stability Stable under recommended conditions of storage.

Conditions to avoid Avoid heat, sparks, open flames and other ignition sources.

Material to avoid Incompatible with oxidising agents (eg. hypochlorites) and acids (eg. nitric acid).

Hazardous Decomposition Products May evolve toxic nickel oxides when heated to decomposition.

Hazardous Reactions Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary Harmful. This product has the potential to cause adverse health effects with over exposure. Use safe work practices to avoid eye or skin contact and inhalation. Nickel is classified as possibly carcinogenic to humans (IARC Group 2B). May cause sensitisation by inhalation and skin contact. Individuals with pre-existing respiratory impairment (eg asthmatics) or skin sensitivities may be more susceptible to adverse health effects.

Eye Irritant. Contact may result in irritation, lacrimation, pain and redness.

Inhalation Harmful. Over exposure to dust may result in mucous membrane irritation and sensitisation. High level exposure may result in toxic systemic effects. Nickel salts have been shown to cause an increased incidence of asthma and bronchitis, decreased pulmonary function and increased incidence of lung and nasal cancers.

Skin Irritant. Contact may result in irritation, rash and dermatitis (nickel itch). May cause sensitisation by skin contact.

Ingestion Harmful. Ingestion of large quantities may result in nausea, vomiting and abdominal pain. Nickel is poorly absorbed through the stomach.

Toxicity data

CHROMIUM (7440-47-3)	
LDLo (ingestion)	71 mg/kg (human)
TDLo (ingestion)	1.2 mg/kg/6 weeks (rat)
NICKEL (7440-02-0)	
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 ³ /91W-I (guinea pig - tumors)
TDLo (ingestion)	158 mg/kg (rat - foetotoxic)
COPPER (7440-50-8)	
LD50 (skin)	> 2000 mg/kg (rat)
MANGANESE (7439-96-5)	
LD50 (ingestion)	9000 mg/kg (rat)
TCLo (inhalation)	2300 ug/m ³ (man - CNS)
BORON (7440-42-8)	
LD50 (ingestion)	650 mg/kg (rat)
LD50 (intraperitoneal)	7 g/kg (rat)
IRON (7439-89-6)	
LD50 (ingestion)	20000 mg/kg (guinea pig)
LDLo (intraperitoneal)	20 mg/kg (rabbit)
TDLo (ingestion)	77 mg/kg (child)

12. ECOLOGICAL INFORMATION

Toxicity Metallic nickel is harmful to aquatic life with long lasting effects. Aquatic toxicity classification relates to particle sizes less than 1 mm diameter (equivalent spherical diameter).

Persistence and degradability Not applicable for inorganic substances.

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Bioaccumulative potential	In general, nickel bioaccumulation is relatively low and nickel does not become magnified along food chain.
Mobility in soil	Nickel mobility in soil is dependent on many parameters including pH, and naturally occurring silica and hydrous oxides of iron and manganese.
Other adverse effects	No information provided.

13. DISPOSAL CONSIDERATIONS

Waste disposal	Reuse where possible, or return to the manufacturer or supplier. Alternatively, dispose of at an approved landfill site. Contact the manufacturer for additional information.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
UN number	None Allocated	None Allocated	None Allocated
Proper shipping name	None Allocated	None Allocated	None Allocated
DG class/ Division	None Allocated	None Allocated	None Allocated
Subsidiary risk(s)	None Allocated	None Allocated	None Allocated
Packing group	None Allocated	None Allocated	None Allocated
Hazchem code	None Allocated		

15. REGULATORY INFORMATION

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

16. OTHER INFORMATION

Additional information	<p>NICKEL EXPOSURE 1: NIOSH-USA recommend that workers exposed to Nickel and inorganic nickel compounds should have an initial medical exam covering: 1. Comprehensive medical and work history with emphasis on skin conditions, allergies, upper and lower respiratory tract illnesses and smoking. 2. Complete physical exam with emphasis on upper respiratory tract and skin. 3. Specific clinical tests such as X-ray, pulmonary function and indicated sputum cytology and urine nickel analysis.</p> <p>NICKEL: Reported and potential adverse health effects associated with occupational exposure to Nickel metal and inorganic compounds include; an increased risk of nasal, lung and possibly laryngeal cancer in nickel refinery workers; increased risk of gastric cancer; increased risk of sarcoma (cancer arising from connective tissue); severe irritation of the upper respiratory tract; pulmonary irritation and fibrosis; pneumoconiosis; bronchial asthma; increased susceptibility to respiratory infections; and dermatitis.</p> <p>RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.</p>
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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.

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.

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
GHS	Globally Harmonized System
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
PEL	Permissible Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
REACH	Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals
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

Revision history

Revision	Description
1.1	Standard SDS Review
1.0	Initial SDS creation

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources 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. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, 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 SDS.

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Revision: 1.1
SDS Date: 19 March 2014

End of SDS