

Material Safety Data Sheet

Product Name **COAL (WHITEHAVEN COAL MINING BITUMINOUS COAL)**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier Name WHITEHAVEN COAL MINING
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Synonym(s) BELMONT SEMI SOFT • HOSKINSON • KAMILAROI SEMI SOFT • KAMILAROI THERMAL • MERRIOWN • NARRABRI PCI • NARRABRI THERMAL • SUNNYSIDE THERMAL • TARRAWONGA PCI • TARRAWONGA SEMI SOFT • TARRAWONGA THERMAL • WERRIS CREEK HIGH ASH • WERRIS CREEK PCI • WERRIS CREEK THERMAL • WHITEHAVEN SEMI SOFT • WHITEHAVEN THERMAL

Use(s) BOILER FUEL • COKE PRODUCTION • COKING COAL • ELECTRICITY GENERATION
SDS Date 29 Mar 2010

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO HAZARDOUS SUBSTANCES [CLASSIFICATION] REGULATIONS 2001

RISK PHRASES

R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

SAFETY PHRASES

S22 Do not breathe dust.

S38 In case of insufficient ventilation, wear suitable respiratory equipment.

NOT CLASSIFIED AS A DANGEROUS GOOD ACCORDING TO LAND TRANSPORT RULE: DANGEROUS GOODS 2005; NZS 5433:2007, UN, IMDG OR IATA

UN No.	None Allocated	DG Class	None Allocated	Subsidiary Risk(s)	None Allocated
Packing Group	None Allocated	Hazchem Code	None Allocated	EPG	None Allocated

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Content
QUARTZ (SILICA CRYSTALLINE)	14808-60-7	1-10%
CARBON	7440-44-0	40-55%
VOLATILES	Not Available	20-40%
ASH	Not Available	4-30%
SULPHUR COMPOUNDS	Not Available	0.2-0.75%

4. FIRST AID MEASURES

Eye If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre on 0800 764 766 (0800 POISON) or +643 479 7248 (New Zealand) or a doctor, or for at least 15 minutes.

Inhalation If irritation or discomfort exists, remove the exposed individual to fresh air. Blow nose to clear breathing passages and rinse mouth with water. Recovery should be rapid after removal from exposure. If other than minor symptoms are displayed, seek immediate medical attention. May aggravate pre-existing respiratory conditions such as bronchitis or asthma due to nuisance dust nature. Due to the potential to cause coal worker's pneumonconiosis, medical surveillance involving spirometry and/or chest x-ray is often mandated where exposures are likely to exceed the respirable crystalline silica occupational exposure limit.

Skin Wash exposed skin for hygienic purposes. Seek medical attention if irritation develops. May aggravate pre-existing skin conditions.

Ingestion Not a normal route of exposure due to product form. Ingestion may cause irritability of the digestive system. Give a

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drink of water. Do not make a semi-conscious or unconscious person vomit. If signs or symptoms develop, get medical attention.

Advice to Doctor Treat symptomatically

5. FIRE FIGHTING MEASURES

Flammability	Combustible. Contact with strong oxidising agents (ozone, chlorine, liquid oxygen) may result in fire. May evolve toxic gases (carbon/ nitrogen/ sulphur oxides, hydrocarbons) when heated to decomposition. Caution: Spontaneously combustible. Dust may form explosive mixtures with air.
Fire and Explosion	Initiate site emergency procedures, 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.
Extinguishing	For small fires, use dry chemical, sand, earth, water spray or regular foam. For large fires involving coal dust, use water spray, fog, regular foam or CO ₂ . Water is effective on shallow layers, but may intensify deep-seated fire in large storage areas. Exposed fire fighters should wear approved pressure demand and self-contained breathing apparatus (SCBA), with full-face mask and full protective equipment. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Use water fog to cool intact pressure containers and nearby storage areas.
Hazchem Code	None Allocated

6. ACCIDENTAL RELEASE MEASURES

Spillage	Contact emergency services where appropriate. Use personal protective equipment. Clear area of all unprotected personnel. Ventilate area where possible. Contain spillage, then collect and place in suitable containers for disposal. Eliminate all ignition sources.
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7. STORAGE AND HANDLING

Storage	Store in a cool, dry, well ventilated area, removed from oxidising agents, active metals, unsaturated oils, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. 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

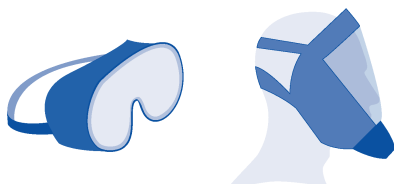
Exposure Stds	Ingredient	Reference	TWA		STEL	
			ppm	mg/m ³	ppm	mg/m ³
	Silica, Crystalline Quartz	WES (NZ)	--	0.2	--	--

CARBON

ES-TWA: 3 mg/m³ (Coal dust - respirable)

Engineering Controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Wet where possible. Maintain dust levels below the recommended exposure standard.

PPE Wear dust-proof goggles and a Class P1 (Particulate) respirator. When using large quantities or where heavy contamination is likely, wear: cotton or rubber or PVC gloves and coveralls. At high dust levels, wear: a Class P3 (Particulate) respirator or an Air-line respirator or a Powered Air Purifying Respirator (PAPR) with Class P3 (Particulate) filter.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	DARK BROWN TO BLACK AGGREGATE OR COBBLES	Solubility (Water)	INSOLUBLE
Odour	ODOURLESS TO SLIGHT ODOUR	Specific Gravity	1.2 to 1.6

pH	7	% Volatiles	30 % (400°C)
Vapour Pressure	NOT AVAILABLE	Flammability	COMBUSTIBLE
Vapour Density	NOT AVAILABLE	Flash Point	400°C
Boiling Point	NOT AVAILABLE	Upper Explosion Limit	NOT AVAILABLE
Melting Point	NOT AVAILABLE	Lower Explosion Limit	NOT AVAILABLE
Evaporation Rate	NOT AVAILABLE		

10. STABILITY AND REACTIVITY

Material to Avoid	May ignite or explode in contact with oxidising agents (eg. hypochlorites) and metals. Finely divided particles can cause dust explosions, particularly in confined areas. Caution: Spontaneously combustible.
Hazardous Decomposition Products	May evolve toxic gases (carbon/ nitrogen/ sulphur oxides, hydrocarbons) when heated to decomposition.
Polymerization	Polymerization is not expected to occur.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Low to moderate toxicity. Over exposure may result in irritation of the nose and throat with coughing, due to inhalation of high dust levels well above the 8-hour occupational exposure limits. Coal contains a small amount of silica (quartz). Crystalline silica is classified as carcinogenic to humans (IARC Group 1). However, IARC have also concluded that there was inadequate evidence in humans and in experimental animals for the carcinogenicity of coal dust and that coal dust cannot be classified as to its carcinogenicity to humans (Group 3).
Eye	Low irritant. Contact may result in irritation, lacrimation and redness.
Inhalation	Where dust is generated, may result in irritation of the nose and throat, with coughing, due to inhalation of high dust levels well above the 8-hour occupational exposure limits. Chronic exposure to coal dust has the potential to cause Coal Workers Pneumoconiosis (CWP) (a respiratory disorder) and may progress to progressive fibrosis (ie scarring of the lungs). This condition results in the production of a black sputum, bronchitis and emphysema. CWP is a benign condition that is a precursor for a more complicated disease, Progressive Massive Fibrosis (PMF) (ie scarring of the lungs). The potential for respiratory disease increases with concentration of respirable crystalline silica dust and duration of exposure.
Skin	Low irritant. Prolonged or repeated contact may result in mild irritation, rash and dermatitis.
Ingestion	Low to moderate toxicity. Ingestion is considered unlikely due to product form. However, ingestion via hand-mouth transfer may result in gastrointestinal irritation, nausea and vomiting. Maintain good personal hygiene standards.
Toxicity Data	QUARTZ (SILICA CRYSTALLINE) (14808-60-7) LCLo (Inhalation): 300 ug/m3/10 years (human) LDLo (Intratracheal): 200 mg/kg (rat) LDLo (Intravenous): 20 mg/kg (dog) TCLo (Inhalation): 16 000 000 particles/ft3/8 hours/17.9 years (human-fibrosis) CARBON (7440-44-0) LDLo (Intravenous): 440 mg/kg (mouse)

12. ECOLOGICAL INFORMATION

Environment	Coal itself is persistent in the environment. being of low degradability, but is of very low ecotoxicity and mobility. When burnt (eg. in coal-fired power stations) coal has a number of ecological impacts such as; contribution to green house gases, stored fly ash and bottom ash produced can contribute to elevated levels of selenium in natural waters, acidic sulphur and nitrogen oxides derived from a range of sources included coal-fired power stations and industrial plants fuelled by fossil fuels contribute to acid deposition and depending on the exact composition of the coal, it may also evolve coal ash decomposition products such as mercury, arsenic, selenium, cadmium and lead.
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13. DISPOSAL CONSIDERATIONS

Waste Disposal	Reclaim and reuse where possible. Recovered material should be delivered to the intended receiver or returned to the producer.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

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Shipping Name None Allocated

UN No. None Allocated

DG Class None Allocated

Subsidiary Risk(s) None Allocated

Packing Group None Allocated

Hazchem Code None Allocated

EPG None Allocated

15. REGULATORY INFORMATION

Approval Code Not Available

Group Name Not Available

HSNO Controls Refer to the ERMA website for more information: www.ermanz.govt.nz

16. OTHER INFORMATION

Additional Information 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.

ABBREVIATIONS:

ADB - Air-Dry Basis.

BEI - Biological Exposure Indice(s)

CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.

CNS - Central Nervous System.

EINECS - European INventory of Existing Commercial chemical Substances.

IARC - International Agency for Research on Cancer.

M - moles per litre, a unit of concentration.

mg/m³ - Milligrams per cubic metre.

NOS - Not Otherwise Specified.

NTP - National Toxicology Program.

OSHA - Occupational Safety and Health Administration.

pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).

ppm - Parts Per Million.

RTECS - Registry of Toxic Effects of Chemical Substances.

TWA/ES - Time Weighted Average or Exposure Standard.

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 Chem Alert 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 Chem Alert 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.

Report Status

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

It is based on information concerning the product which has been provided to RMT by the manufacturer 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.

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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End of Report