

PRODUCT NAME: RAW MATERIAL - RM006	ISSUED: March 2006
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UN NO:	None Allocated	D.G. CLASS:	None Allocated	CAS NO:	1308-06-1
HAZCHEM:	None Allocated	SUB. RISK:	None Allocated	SUSDP:	None Allocated
G.T.EPG:	None Allocated	SPEC.EPG:	None Allocated	PACK.GRP:	None Allocated

OTHER NAMES:

Cobalt Black, Cobalt Monoxide.

INGREDIENTS:

CHEMICAL ENTITY:	CAS NO:	PROPORTION:
CoO.Co ₂ O ₃	1308-06-01	> 86% (Co > 74%)
NiO	1313-99-1	0.1 - 1%
CuO		< 0.05%
MnO ₂		< 0.1%
ZnO		< 0.05%
Fe ₂ O ₃		< 0.05%

Above results obtained from a chemical analysis of a typical sample of Cobalt Oxide.

USE:

MAJOR:

Colorant in glaze, underglaze and other kiln fired media.

PHYSICAL DESCRIPTION/PROPERTIES:

APPEARANCE:	Black Powder
ODOUR:	None
BOILING POINT:	Not Applicable
MELTING POINT:	Not Applicable
VAPOUR PRESSURE:	Not Applicable
SPECIFIC GRAVITY:	4.8 – 6.4 (CoO – Co ₂ O ₃ subject to composition)
FLASH POINT:	Not Applicable
FLAMMABILITY LIMITS:	No Data
SOLUBILITY IN WATER:	Negligible
VISCOSITY:	No Data
pH:	Neutral
VOLATILE ORGANIC COMP:	None

HEALTH HAZARD INFORMATION:

COBALT OXIDE

Chronic exposure may affect thyroid, lungs, heart and kidneys. May act as carcinogen.

ACUTE:

SWALLOWED:	May be harmful if swallowed.
EYE:	Dust or powder irritates eyes. Rubbing may cause abrasion of cornea.
SKIN:	Causes irritation to skin. Symptoms include redness, itching, and pain.
INHALED:	Causes irritation of the nose, throat, and respiratory tract.

CHRONIC:

SWALLOWED:	-
EYE:	-
SKIN:	Prolonged or repeated skin contact may produce severe irritation or dermatitis
INHALED:	Lungs may be affected by repeated or prolonged exposure

to the dust or powder of this material.

NICKLE OXIDE

ACUTE:

SWALLOWED: May be harmful if swallowed.
EYE: Dust or powder irritates eyes. Rubbing may cause abrasion of cornea.
SKIN: Causes irritation to skin. Symptoms include redness, itching, and pain.
INHALED: Causes irritation of the nose, throat, and respiratory tract.

CHRONIC:

SWALLOWED: -
EYE: -

SKIN: Prolonged or repeated skin contact may produce severe irritation or dermatitis
INHALED: The National Toxicology Program has listed Nickel Oxide as reasonably anticipated to be a carcinogen based on the production of injection-site tumours. The International Agency for Research on Cancer concluded there was sufficient evidence that nickel compounds are carcinogenic to humans and that nickel oxide is carcinogenic to animals. Epidemiological studies of workers exposed to nickel powder and to dust and fume generated in the production of nickel alloys and of stainless steel have not indicated the presence of a significant respiratory cancer hazard.

FIRST AID:

SWALLOWED: Rinse mouth with water and drink large amounts of water. Induce vomiting only in conscious person. Seek medical attention.
EYE: Irrigate with copious amounts of water for at least 15 minutes. Do not rub eyes. Seek medical attention if irritation persists.
SKIN: Wash thoroughly with soap and water. Remove contaminated clothing and wash before re-use. If irritation occurs, seek medical attention.
INHALED: Remove victim immediately from exposure. If breathing has stopped, apply artificial respiration. Seek medical attention.

ADVICE TO DOCTOR:

Treat symptomatically.

COMPONENT ANALYSIS LD50/LC50:

COBALT OXIDE

Oral LD50 (Rat): 202 mg/kg
Dermal LD50 (rabbit 4 hr): N/A
Inhalation LC50 (Rat): N/A
Acute Irritation to eye in rabbits: N/A

NICKLE OXIDE

Oral LD50 (Rat): >5000 mg/kg
Dermal LD50 (rabbit 4 hr): N/A
Inhalation LC50 (Rat): N/A
Acute Irritation to eye in rabbits: N/A

The product has not been tested. The statements on toxicology have been derived from products of a similar structure and composition.

PRECAUTIONS FOR USE:

EXPOSURE STANDARDS:

Exposure Standards (air)

CAS#: 1308-06-1	Cobalt Oxide	CoO.Co ₂ O ₃
	ACGIH-TLVs	0.05mg/m ³ Respirable as Co
	OSHA PELs	0.05mg/m ³ Respirable as Co
	NOISHA	-
CAS#: 1313-99-1	Nickel Oxide NiO	
	ACGIH-TLVs	1mg/m ³ Respirable as Ni
	OSHA PELs	1mg/m ³ Respirable as Ni
	NOISHA	-

ENGINEERING CONTROLS:

Ventilation should effectively remove and prevent build-up of any dust generated from the handling of this product. Local exhaust ventilation is recommended when generating excessive levels of airborne dust or vapours from handling or thermal processing. Use explosion-proof equipment if high dust/air concentrations are possible.

PERSONAL PROTECTION:

PERSONAL PROTECTION GUIDE: COTTON OVERALLS, GLOVES & GLASSES. Avoid eye contact and repeated or prolonged skin contact. Wear overalls, safety glasses and impervious gloves. If ventilation is not sufficient to effectively prevent build-up of dusts, appropriate NIOSH/MSHA respiratory protection must be provided. Always wash hands before smoking, eating, drinking or using the toilet.

FLAMMABILITY:

Flash Point: N/A

Method Used: N/A

Flammability Classification: N/A

ENVIRONMENT:

Slightly water soluble inorganic product. It can be eliminated mechanically from water in purification tanks.

SAFE HANDLING INFORMATION:

STORAGE:

Keep container dry. Store away from excessive heat and away from strong oxidizing agents, strong acids food and feedstuffs. Keep container tightly closed to prevent contamination.

HANDLING:

Remove all ignition sources from material handling, transfer, and processing areas where dust may be present. Local exhaust ventilation should be provided in work areas. Ensure that airborne dust concentrations are controlled within regulatory dust standards.

TRANSPORT:

Not a hazardous material for transportation.

DOT REGULATIONS:

Hazard Class: None

Land transport ADR/RID (cross-border)

ADR/RID Class: None
Maritime transport IMDG:
IMDG Class: None
Air transport ICAO-TI and IATA-DGR:
ICAO/IATA Class: None

SPILLS & DISPOSAL:

Sweep spilled substance into containers and if appropriate, moisten first to minimize or prevent dusting and the generation of airborne particulates, then move to a safe place. Do not let the spilled substance enter the environment. Avoid the generation of dust during clean-up. Collect dust or powder using a vacuum cleaner with a HEPA filter. Evacuate the area promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering.

Cobalt containing waste is normally collected to recover cobalt values. Should waste disposal be deemed necessary follow EPA and local regulations.

FIRE/EXPLOSION HAZARD:

HAZARDS OF USE/STORAGE:

Dust accumulation from this product may present an explosion hazard in the presence of an ignition source.

DANGEROUS DECOMPOSITION/COMBUSTION PRODUCTS:

Product is not considered combustible. Toxic and irritating fumes are given off of unknown composition if burned. If the substance is heated, it will decompose producing toxic and irritating fumes.

PERSONAL PROTECTION:

Wear a NIOSH approved positive pressure self-contained breathing apparatus and fire fighter turnout gear.

REACTIVITY:

Chemical Stability

This is a stable material.

Chemical Stability: Conditions to Avoid

Avoid contact with strong oxidizers, acids, excessive heat, sparks or open flame or dust accumulation.

Incompatibility

Strong oxidizing agents, acids, and heat.

Hazardous Decomposition

Produces toxic and irritating fumes.

Hazardous Polymerization

Will not occur.

FIRE EXTINGUISHING AGENTS:

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

REGULATORY INFORMATION:

COMPONENT CLASSIFICATION AND LABELLING (EEC)

Cobalt Oxide (1308-06-1)

Annex #: - EINECS #: 215-157-2

Classification:

N/A

Label Information:

R-20 Harmful by inhalation.
R-22 Harmful if swallowed.
R-36/37/38 Irritating to eyes, respiratory system and skin.
S-7 Keep container tightly closed.
S-22 Do not breath dust.
S-24/25 Avoid contact with skin and eyes.
S-28 After contact with skin, wash immediately with plenty of water.
S-51 Use only in well ventilated areas.

Nickel Oxide (11099-02-8)

Annex #: - EINECS #: 234-323-5

Classification:

N/A

Label Information:

R-20 Harmful by inhalation.
R-22 Harmful if swallowed.
R-36/37/38 Irritating to eyes, respiratory system and skin.
S-7 Keep container tightly closed.
S-22 Do not breath dust.
S-24/25 Avoid contact with skin and eyes.
S-28 After contact with skin, wash immediately with plenty of water.
S-51 Use only in well ventilated areas.

COMPONENT ANALYSIS - INVENTORY

Component	CAS #	TSCA	DSL	EINECS
Cobalt Oxide	1308-06-1	Yes	Yes	Yes
Nickel Oxide	11099-02-8			Yes

OTHER INFORMATION:

DISCLAIMER:

Supplier gives no warranty of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser will make his own tests to determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental and/or consequential property damage arising out of the use of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights. Read the Material Safety Data Sheet before handling product.

KEY/LEGEND:

NA = Not available or Not Applicable. ACGIH = American Conference of Governmental Industrial Hygienists. TLV = Threshold Limit Value. NTP = National Toxicology Program. OSHA = Occupational Safety and Health Administration.

END OF MATERIAL SAFETY DATA SHEET