Ceramic Color & Chemical Mfg. Co.
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HAZARDOUS INGREDIENTS

Hazardous Ingredients	Calculated Composition	C.A.S. No.	PEL[1]-mg/m³	TLV[2]-mg/m³
Cobalto-Cobaltic Oxide (Co_3O_4)	86-93	1308-06-1	0.05 as Co	0.05 as Co
Cobaltous oxide (CoO)	7-13	1307-96-6	0.05 as Co	0.05 as Co
Nickel Oxide (NiO)	0.1-1	1313-99-1	1 as Ni	1 as Ni

PHYSICAL and CHEMICAL DATA

Black, odorless powder of which 98% passes through a 350 mesh sieve.

Ingredient	Mol. Wt.	Specific Gravity	m.p. °C	b.p. °C	Sol. In H_2O g/100ml
Co_3O_4	240.8	6.07	n.av.	n.av.	0
CoO	74.93	6.45	1935	n.av.	0
NiO	74.71	6.67	1990	n.av.	0

PHYSICAL HAZARDS

None

The inhalation of nickel oxide has not resulted in an increased incidence of malignant lung tumors in rodents.

Inhalation of nickel oxide at concentrations 50 times the PEL, produced pneumoconiosis in hamsters.

Repeated intratracheal instillation of nickel oxide produced an increased incidence of malignant lung tumors in rats

Wounds: Nickel oxide has caused tumors at the site of injection in rodents.

Ingestion: The U.S. National Institute for Occupational Safety and Health (NIOSH) concluded there is no evidence that Nickel and it inorganic compounds are carcinogenic when ingested.

PRECAUTIONS FOR SAFE STORAGE, HANDLING AND USE

Do not inhale powder. Keep container closed when not in use. Ventilation is normally required when handling or using this product to keep exposure to airborne nickel below the exposure limit. If ventilation alone cannot so control exposure, use NIOSH-approved respirators selected according to OSHA 29 CFR 1910.134. Maintain airborne nickel levels as low as possible.

SPILL, LEAK AND DISPOSAL PROCEDURE

Collect spills by using sweeping compound or by vacuuming with the vacuum exhaust passing through a high efficiency particulate arresting (HEPA) filter if the exhaust is discharged into the workplace.

Wear appropriate NIOSH-approved respirators if collection and disposal of spills is likely to cause the concentration of airborne contaminants to exceed their exposure limits.

BLACK COBALT OXIDE

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

EMERGENCY AND FIRST AID PROCEDURES

Cleanse wounds thoroughly to remove any particles.

HEALTH HAZARDS

Cobalto-Cobaltic Oxide

oral rat: >5000 mg/kg

Inhalation: Some workers engaged long-term in the production of cobalt oxides showed symptoms of chronic bronchitis. Inhalation experiments show that cobalto-cobaltic oxide accumulated in the lymph nodes of dogs suggesting is tissue insoluble.

Eye Contact: Chronic exposure of animal eyes to dusts of mineral containing both cobalt and arsenic has caused corneal injury.

Cobaltous Oxide

oral rat 202 mg/kg

Inhalation: Excessive concentrations of airborne cobaltous oxide resulted in the development of emphysema and pneumoconiosis in hamsters. Some workers engaged long-term in the production of cobalt oxides showed symptoms of chronic bronchitis. The inhalation of cobaltous oxide has not resulted in an increased incidence of malignant lung tumors in rodents.

Eye Contact: Chronic exposure of animal eyes to dusts of minerals containing both cobalt and arsenic has caused corneal injury.

Wounds: Cobaltous oxide has caused tumors at the site of injection in rodents.

Nickel Oxide

oral rat >5000 mg/kg

Inhalation: The National Toxicology Program has listed nickel oxide as reasonably anticipated to be a carcinogen based on the production of injection-site tumors. The International Agency for Research on Cancer (IARC) 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.

SARA SECTION 313 SUPPLIER NOTIFICATION

This product contains the following chemical(s) subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40 CFR 372:

Cobalto-Cobaltic Oxide
Cobaltous Oxide
Nickel Oxide

Refer to the Hazardous Ingredients section of this MSDS for the appropriate CAS numbers and the percent by weight.

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Note:

It is CCC's belief that information set forth in this Material Safety Data Sheet is accurate. CCC makes no warranty, expressed or *implied, with respect thereto and disclaims any liability form reliance thereon.*