



MATERIAL SAFETY DATA SHEET
COMPLIES WITH 29 CFR 1910.1200.
OSHA HAZARD COMMUNICATION RULE

DATE OF LAST REVISION: 06-20-96

CHEMICAL IDENTITY

LABEL IDENTITY	Cobalt Oxide	
CHEMICAL NAME/SYNONYMS	Cobalt Monoxide, Cobalt (II) oxide	
FORMULA	CoO	
CHEMICAL FAMILY	Metal Oxide	
CAS REGISTRY NUMBER	1307-96-6, Reportable Chemical SARA Title III.	
HAZARDOUS INGREDIENTS	Cobalt Oxide, Listed in the TSCA Inventory.	
	(all cobalt materials may include typically 0.1-1% nickel unless otherwise specified.)	
%	TLV	OSHA/PEL
100	not set	not set
	0.05mg/m3 (Co)	0.1mg/m3 (Co)

PHYSICAL AND CHEMICAL PROPERTIES

COLOR, FORM AND ODOR	Green-brown crystalline powder, odorless.
BOILING POINT	ND
DENSITY (gm/cc)	6.45
VAPOR PRESSURE @ 20°	NA
% VOLATILE BY VOLUME (%)	NA
REACTION WITH WATER	None
EVAPORATION RATE (H2O=1)	NA
SOLUBILITY IN WATER	Insoluble
MELTING POINT	1795 ±50
OTHER	Readily absorbs at room temperature. Soluble in acid; insoluble in alcohol,

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	NA
AUTOIGNITION TEMPERATURE (°C)	NA
FLAMMABILITY	Non flammable
EXTINGUISHING MEDIA	Use dry chemical, CO2.
SPECIAL FIRE FIGHTING PROCEDURES	Wear a self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes.
UNUSUAL FIRE & EXPLOSION HAZARDS	When heated to decomposition, it may emit toxic fumes.



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HEALTH HAZARD INFORMATION

TOXICITY DATA	ims-rat TDLO:	135mg/kg	orl-rat LD50:	202mg/kg
	ims-rat TD:	90mg/kg	scu-mus LD50:	125mg/kg
	ims-mus LDLO:	800mg/kg	itr-rat LDLO:	50mg/kg
	orl-dog LDLO:	89mg/kg		

HMIS RATING:

HEALTH: **3*** FLAMMABILITY: **0** REACTIVITY: **1** PERSONAL PROTECTION: **X**

ROUTES OF ENTRY: INHALATION: **Yes** SKIN: **Yes** INGESTION: **Yes**

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: **Respiratory disorders**

EFFECTS OF OVEREXPOSURE (acute and chronic):

INHALATION: **may cause sneezing, coughing, difficulty breathing and irritation of the mucous membrane of the respiratory tract.**

DERMAL: **may cause irritation, itching, inflammation and dermatitis.**

EYES: **may cause burning sensation, irritation, redness and watering if in contact with eyes.**

OTHER: ***SEE ATTACHED SHEET***

CARCINOGENICITY: **Suspect (Cobalt)**

NTP: **No**

IARC MONOGRAPHS: **No**

OSHA REGULATE: **Yes**

EMERGENCY FIRST AID PROCEDURES:

INGESTION: **give 1-2 glasses of water or milk and induce vomiting. Seek medical attention.**

INHALATION: **remove victim to fresh air; administer oxygen if breathing is difficult; seek medical attention.**

SKIN CONTACT: **brush material off skin; wash affected area with soap and water; seek medical attention.**

EYE CONTACT: **flush eyes with lukewarm water for 15 minutes; seek medical attention.**

REACTIVITY DATA

STABILITY

CONDITIONS CONTRIBUTING TO UNSTABILITY

INCOMPATIBILITY (MATERIALS TO AVOID)

HAZARDOUS DECOMPOSITION PRODUCTS

HAZARDOUS POLYMERIZATION

CONDITIONS TO AVOID

Unstable

Air

Hydrogen peroxide

Co, CoOx

Will Not Occur

Heat, flame, air and incompatibles



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SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: **Wear a self-contained breathing apparatus and full protective clothing. Isolate the area where the spill occurred and insure that proper ventilation is available. Vacuum up spill using a high efficiency unit and place in a container for proper disposal. Take care not to raise dust.**

WASTE DISPOSAL METHOD: **Dispose of in accordance with applicable federal, state and local regulations.**

SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION	Wear NIOSH-approved dust-mist-fume cartridge respirator
LOCAL EXHAUST	Maintain exposure below TLV level for Co
MECHANICAL (general)	Not recommended
PROTECTIVE GLOVES	Neoprene
EYE PROTECTION	Safety glasses
OTHER PROTECTIVE EQUIPMENT	Wear protective clothing to prevent contamination of skin and clothes

SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE: **Store in tightly closed containers, in a cool, dry place. Wash hands and face thoroughly after handling and before eating.**

TRANSPORTATION REQUIREMENTS	DOT CLASS:	Not Classified
	UN NUMBER:	NC
	IMCO CLASS:	NC
	OTHER:	

PRECAUTIONARY LABELING **NONE**

THE ABOVE INFORMATION IS ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, SINCE DATA, SAFETY STANDARDS AND GOVERNMENT REGULATIONS ARE SUBJECT TO CHANGE THE CONDITIONS OF HANDLING AND USE, OR MISUSE ARE BEYOND OUR CONTROL, **ANGSTROM SCIENCES** MAKE NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR THE RELIANCE THEREON. USER SHOULD SATISFY HIMSELF THAT HE HAS ALL CURRENT DATA RELEVANT TO HIS PARTICULAR USE.

NA= NOT APPLICABLE

ND= NO DATA FOUND

NR=NOT RECORDED



ATTACHED SHEET FOR: **COBALT OXIDE**
MATERIAL SAFETY DATA SHEET

EFFECTS OF OVEREXPOSURE:

OTHER: **Co compounds**

Experimental evidence shows that the toxicity of cobalt by mouth is low. In animals, administration of cobalt salts produces polycythemia. May cause kidney and liver damage in humans. Locally, cobalt has been shown to produce dermatitis. There have also been reports of hematological, digestive and pulmonary changes in humans. It is a suspected carcinogen of the connective tissue in lungs.