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Emergency Information 24hr: 703-527-3887

Material Safety Data Sheet

1. Identification of the Substance / Preparation and of the Company

Trade Name: **Cobalt Oxide**
Chemical Name: Cobalt (II) Oxide; Tricobalt tetraoxide
Chemical characterization:
Molecular Weight: Not available
CAS No.: 1307-96-6 / 1308-06-1
EINECS No. 215-154-6 / 215-157-2
Chemical Formula: Not available

2. Composition / Information on Ingredients

CAS #	Chemical Name	%	EINECS #
1307-96-6	Cobalt (II) oxide	None listed	215-154-6
1308-06-1	Tricobalt tetraoxide	None listed	215-157-2

Hazard Symbol: XN N
Risk Phrases: 22 43 50 / 53

3. Hazards Identification

EMERGENCY OVERVIEW

Appearance: black-gray crystalline powder. Warning! May cause allergic skin reaction. Hygroscopic. May be harmful if swallowed. May cause cancer based on animal studies. May cause eye, skin, and respiratory tract irritation. This product contains cobalt(II) oxide, a chemical known to the state of California to cause cancer.

Target Organs: Lungs, skin.

Potential Health Effects

Eye: May cause eye irritation.
Skin: May cause skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May be harmful if swallowed.
Inhalation: May cause respiratory tract irritation. May cause chronic airway hyperreactivity and asthma, with changes in pulmonary function.

Chronic: Cobalt compounds may cause cancer based upon animal studies. May cause chronic heart disease due to effects on the heart muscle.

4. First-aid Measures

Eyes : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin : In case of contact, immediately flush skin soap and plenty of water. Remove contaminated clothing and shoes. Get medical aid. Wash clothing before reuse.

Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Get medical aid.

Inhalation : If inhaled, removed to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically aid.

5. Fire-Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Runoff from fire control or dilution water may cause pollution.

Extinguishing Media: Use extinguishing media most appropriate for the surrounding fire.

Autoignition Temperature: Not available.

Flash Point: Not available.

Explosion Limits, lower: Not available.

Explosion Limits, upper: Not available.

NFPA Rating: (estimated) Health:2; Flammability: 0; Instability:0

6. Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills / Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

7. Handling & Storage

Handling: Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture.

8. Exposure Controls / Personal Protection

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA-Final PELs
Cobalt (II) Oxide	0.02mg/m3 TWA(as Co) (listed under **no name**).	None listed.	None listed.
Tricobalt Tetraoxide	0.02mg/m3 TWA(as Co) (listed under **no name**).	None listed.	None listed.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin : Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

9. Physical & Chemical Properties

Physical State: Crystalline Powder.
 Appearance: Black-gray
 Odor : Not available.
 pH Not available.
 Vapor Pressure: Not available.
 Viscosity: Not available.
 Boiling Point: Not available.
 Freezing/Melting Point: 895 deg C (dec).
 Decomposition Temperature: 895 deg C
 Solubility in water: Insoluble
 Specific Gravity/Density: 6.11 g/cm³
 Molecular Formula : Not available.
 Molecular Weight : Not available.

10. Stability & Reactivity

Chemical Stability:

Stable at room temp. in closed containers under normal storage & handling conditions.

Conditions to Avoid: Incompatible materials, Dust generation, Excess heat.

Incompatibilities with Other Materials: No information found.

Hazardous Decomposition Products: Cobalt /cobalt oxide.

Hazardous Polymerization: Will not occur.

11. Toxicological Information

RTECS #: CAS # 1307-96-6: GG 280 0000.
CAS # 1308-06-1: GG 250 0000

LD50 / LC50 : CAS # 1307-96-6: Oral, rat: LD50=202 mg/kg;
CAS # 1308-06-1: Oral, rat: LD50=>5mg/kg.

Carcinogenicity: Cobalt (II) oxide-

- ACGIH: A3-Animal Carcinogen (as Co) (listed as**undefined**)
- California: carcinogen; initial date 7/1/92 IARC: Group 2B carcinogen (listed as**undefined**).

Tricobalt tetraoxide-

- ACGIH:A3-Animal Carcinogen (as Co) (listed as**undefined**)

IARC: Group 2B carcinogen (listed as **undefined**).

Epidemiology: IARC Group 2B: No data available on human carcinogenicity, however sufficient evidence of carcinogenicity in animals.

Teratogenicity: No information found.

Reproductive Effects: No information found.

Neurotoxicity: No information found.

Mutagenicity: No information found.

Other Studies: See actual entry in RTECS for complete information.

12. Ecological Information

Other: No information found.

13. Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

14. Transport Information

US DOT: No information available.

Canadian TDG: No information available.

15. Regulatory Information

US FEDERAL

TSCA CAS # 1307-96-6 is listed on the TSCA inventory.

CAS # 1308-06-1 is listed on the TSCA inventory.

Health & Safety Reporting List:

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules:

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b: None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule:

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs:

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances:

None of the chemicals in this product have a TPQ.

SARA codes:

CAS # 1308-06-1: acute, chronic.

Section 313: This chemicals is not at a high enough concentration to be reportable.

Clean Air Act:

- CAS # 1307-96-6 listed as ****no name**** is listed as a hazardous air pollutant(HAP).
- CAS # 1308-06-1 listed as ****no name**** is listed as a hazardous air pollutant(HAP).
- This material does not contain any Class 1 Ozone depletors.
- This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

- None of the chemicals in this product are listed as Hazardous Substances under the CWA.
- None of the chemicals in this product are listed as Priority Pollutants under the CWA.
- None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

- None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

Cobalt (II) oxide can be found on the following state right to know lists :Minnesota (listed as ****no name****).

Tricobalt tetraoxide can be found on the following state right to know lists:

Minnesota (listed as ****no name****).

The following statement(s) is (are) made in order to comply with the California Safe Drinking Water Act:

- **WARNING:** This product contains Cobalt (II) oxide, a chemical known to the state of California to cause cancer.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations:

- Hazard Symbols: XN N
- Risk Phrases:
 - R 22 Harmful if swallowed.
 - R 43 May cause sensitization by skin contact.
 - R 50/33 Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.
- Safety Phrases:
 - S 22 Do not breathe dust.
 - S 24 Avoid contact with skin.

S 37 Wear suitable gloves.

S 60 This material and/or its container must be disposed of as hazardous waste.

S 61 Avoid release to the environment. Refer to special instructions.

WGK (Water Danger/Protection)

- CAS # 1307-96-6: 2
- CAS # 1308-06-1: 0

United Kingdom Occupational Exposure Limits

United Kingdom Maximum Exposure Limits

- CAS # 1307-96-6: MEL-United Kingdom, TWA (listed as ****undefined****): 0.1 mg/cm³
TWA (as Co)

Canada

- CAS # 1307-96-6 is listed on Canada's DSL List.
- CAS # 1308-06-1 is listed on Canada's DSL List.
- This product has a WHMIS classification of D2B, D2A.
- CAS # 1307-96-6 is listed on Canada's Ingredient Disclosure List.
- CAS # 1308-06-1 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits:

- CAS # 1307-96-6: Not available.
- CAS # 1308-06-1: Not available.

16. Other Information

MSDS Creation Date: 07/10/2006.

The information above is believed to be accurate and represents the best information currently available to us. However, we made no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

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