

Material Safety Data Sheet

Cobalt(II,III)oxide

Revision Date: 01/12/2010

Date Issued: 01/03/2007

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY / UNDERTAKING

Product name	Cobalt(II,III)oxide, Nanopowder
Product code	NO-0002-HP
Supplier	IoLiTec Ionic Liquids Technologies GmbH Salzstrasse 184 D-74076 Heilbronn Germany
Telephone	+49 (0)7131 - 898390
Fax	+49 (0)7131 - 89839109
Emergency telephone	+49 (0)179 - 5322578
Email	msds@iolitec.de

2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (67/548/EEC or 1999/45/EC)

Harmful by inhalation. Irritating to eyes, respiratory system and skin.

Classification (REGULATION (EC) No 1272/2008)

Skin corrosion/irritation, Category 2, H315

Serious eye damage/Eye irritation, Category 2, H319

Skin sensitisation, Category 1, H317

Carcinogenicity, Category 2, H351

Specific Target Organ Toxicity - Single exposure:

Respiratory tract irritation, Category 3, H335

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2.2 Label elements

Labelling (67/548/EEC or 1999/45/EC)

Hazard description:

Label for supply



Xn Harmful

Information pertaining to particular dangers for man and environment

Risk phrases

R36/37/38: Irritating to eyes, respiratory system and skin.

R40: Limited evidence of a carcinogenic effect.

R43: May cause sensitisation by skin contact.

Safety phrases

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

Labelling (REGULATION (EC) No 1272/2008, GHS)

Hazard statements



Warning

H-phrases

H315: Causes skin irritation.

H317: May cause an allergic skin reaction.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

H351: Suspected of causing cancer.

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Precautionary statements

P-phrases

P201: Obtain special instructions before use.

P261: Avoid breathing dust/fume/gas/mist/vapours/spray.

P280: Wear protective gloves.

P281: Use personal protective equipment as required.

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313: IF exposed or concerned: Get medical advice/attention.

3 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient name	Cobalt(II,III)oxide, 99.8 %
CAS No.	1308-06-1
Empirical Formula	Co ₃ O ₄
Molecular weight	240.8 amu

4 FIRST AID MEASURES

General	Contaminated clothing should be removed and washed before being reused.
Inhalation	Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen.
Ingestion	Immediately rinse mouth and provide fresh air. Do not induce vomiting. Get medical attention immediately.

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Skin Wash the skin immediately with soap and water.

Eyes Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

5 FIRE FIGHTING MEASURES

Extinguishing media Water spray, carbon dioxide, dry chemical powder or appropriate foam.

Special fire fighting procedures No special procedures required.

Unusual fire & explosion hazards Emission of toxic fumes

Protective measures in fire Wear self-contained breathing apparatus as combustion may produce hazardous fumes.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions during spill Wear protective clothing and avoid inhalation of powder, fume and vapor as well as skin or eye contact.

Precautions to protect environment Avoid washing into water courses. Avoid contaminating public drains or water supply.

Spill cleanup methods Avoid contact with skin or inhalation of spillage, dust or vapor, Avoid dust formation.

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Collect and reclaim or dispose in sealed containers in license waste. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate.

7 HANDLING AND STORAGE

Handling precautions

Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage precautions

Keep container closed. Material is hygroscopic.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Protective equipment

Safety goggles. Chemical resistant gloves. Protective clothing. Protective mask when high concentrations are present.

Process control measures

Provide eyewash station and safety shower. Use engineering controls to reduce air contamination to permissible exposure levels.

Ventilation

Provide adequate general and local exhaust ventilation.

Respirators

Use high efficiency particulate respirator with appropriate filter.

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Exposure limits

<u>Co₃O₄</u>	<u>mg/m³</u>
USA ACGIH TLV	0.02
USA PEL	0.1
Belgium TWA	0.05
Denmark TWA	0.05
Finland TWA	0.05
Greece TWA	0.05
Netherland MAC-TGG	0.05
Norway TWA	0.05
Poland TWA	0.05
Sweden NGV	0.05
Switzerland MAK-W	0.1
United Kingdom TWA	0.1

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Solid
Odor/taste	No characteristic odor.
PH	N/A
Boiling Point	N/A
Melting Point	900 °C
Flash Point	N/A
Flammability	N/A
Autoignition Temp	N/A
Oxidizing Properties	N/A
Explosive Properties	N/A
Explosion Limits	N/A
Vapor Pressure	N/A

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SG/Density	6.11 g/cm ³ at 25 °C
Partition Coefficient	N/A
Viscosity	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
Evaporation Rate	N/A
Bulk Density	N/A
Decomposition Temp.	N/A
Solvent Content	N/A
Water Content	N/A
Surface Tension	N/A
Conductivity	N/A
Solubility	N/A

10 STABILITY AND REACTIVITY

Stability	No particular stability concerns.
Conditions/materials to avoid	Moisture, reducing agents
Hazardous Decomposition	Toxic metal oxide fumes

11 TOXICOLOGICAL INFORMATION

Ingestion	Harmful if swallowed.
Inhalation	May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.
Skin	Causes irritation
Eyes	Causes irritation

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Sensitization	May cause allergic skin reaction
Acute toxicity	LD50, oral, rat, > 5000mg/kg LD50, intraperitoneal, mouse, 1890 mg/kg

12 ECOLOGICAL INFORMATION

Do not allow material to be released to the environment without proper governmental permits.

13 DISPOSAL CONSIDERATIONS

Disposal method Contact specialist disposal companies. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose of in accordance with Local Authority requirements. Recover and reclaim or recycle, if practical.

14 TRANSPORT INFORMATION

General	Not classified as dangerous for transport purposes.
UN No.	0
Road transport notes	Not classified as dangerous for road transport.
Rail transport notes	Not classified as dangerous for rail transport.
Sea transport notes	Not classified as dangerous for sea transport.
Air transport notes	Not classified as dangerous for air transport.

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15 REGULATORY INFORMATION

In accordance with local and national regulations.

16 OTHER INFORMATION

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