SAFETY DATA SHEET
Cobalt Oxide

Version 5.3
Revision Date
12/11/2017

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Cobalt Oxide
Product code :

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Arlimin Industries, LLC

333 W. Drake St.
Suite 220
Fort Collins, CO 80526

Telephone : +1 970-494-0244

1.4 Emergency telephone number

CHEMTREC (24h emergency): 1-800-424-9300

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance with REGULATION (EC) No 1272/2008
Respiratory sensitisation (Category 1B), H334
Chronic aquatic toxicity (Category 3), H412
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H412	Harmful to aquatic life with long-lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood
P261	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P284	Wear respiratory protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P363	Wash contaminated clothing before reuse.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1Substances

Formula : Co_3O_4
Molecular Weight : 240.80 g/mol
CAS-No. : 1308-06-1

Component	Classification	Concentration
Tricobalt tetraoxide		
	Resp. Sens. 1B; Aquatic Chronic 3; H334, H412	< 100%

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Cobalt/cobalt oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.
Hygroscopic Keep in a dry place.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Tricobalt tetraoxide	1308-06-1	TWA	0.02 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Pulmonary function Asthma Myocardial effects Substances for which there is a Biological Exposure Index or Indices (see BEI® section)		

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Black powder
b)	Odor	Odorless
c)	Odor Threshold	not applicable
d)	pH	3-8
e)	Melting point/freezing point	1935°C @760mm Hg
f)	Initial boiling point and boiling range	no data available
g)	Flash point	no data available
h)	Evaporation rate	not applicable
i)	Flammability (solid, gas)	non flammable
j)	Upper/lower flammability or explosive limits	no data available
k)	Vapor pressure	not applicable
l)	Vapor density	no data available
m)	Relative density	6.11 g/mL at 25 °C (77 °F)
n)	Water solubility	insoluble
o)	Partition coefficient: n-octanol/water	no data available
p)	Auto-ignition temperature	no data available
q)	Decomposition temperature	> 900 °C (> 1,652 °F)
r)	Viscosity	Not applicable
s)	Explosive properties	no data available
t)	Oxidizing properties	no data available

9.2 Other safety information

Bulk density 0.78 g/l

10. STABILITY AND REACTIVITY

10.1 Reactivity
no data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
no data available

10.4 Conditions to avoid
Avoid moisture.

10.5 Incompatible materials
Reducing agents

10.6 Hazardous decomposition products
Other decomposition products - no data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on the likely routes of exposure

By respiratory organ:	May cause respiratory tract irritation.
By mouth:	May cause gastrointestinal irritation with nausea, vomiting and diarrhea.
By skin and eye contact:	No information available

11.2 Health hazard information

Acute toxicity	Oral:	LD50>5000 mg/kg (Rat)
	Inhalation:	LC50>4.83 mg/L/4h (Rat)
	Dermal:	LD50>2000mg/kg (Rat)
Skin corrosion/irritation:		Not irritating.
Serious eye damage/irritation:		Not irritating.
Respiratory sensitization:		Not sensitizing
Skin sensitization:		Not sensitizing.
Carcinogenicity:		No information available.
Germ Cell Mutagenicity:		No information available.
Reproductive Toxicity:		No information available.
Specific target organ toxicity: (single exposure)		No information available.
Specific target organ toxicity: (repeated exposure)		No information available.
Aspiration Hazard:		No information available.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Danio rerio (zebra fish) - > 136 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - > 136 mg/l - 48 h
Toxicity to algae	EC50 - Pseudokirchneriella subcapitata (green algae) - 88 mg/l - 72 h

12.2 Persistence and degradability no data available

12.3 Bioaccumulative potential no data available

12.4 Mobility in soil no data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

TSCA. Chemical listed and approved on the TSCA Inventory.

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:
Tricobalt tetraoxide CAS-No. 1308-06-1 Revision Date 2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components
Tricobalt tetraoxide CAS-No. 1308-06-1 Revision Date 2007-07-01

Pennsylvania Right To Know Components
Tricobalt tetraoxide CAS-No. 1308-06-1 Revision Date 2007-07-01

New Jersey Right To Know Components
Tricobalt tetraoxide CAS-No. 1308-06-1 Revision Date 2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer. Tricobalt tetraoxide	CAS-No. 1308-06-1	Revision Date 2007-07-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sect 2 and 3.

Aquatic Chronic	Chronic aquatic toxicity
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H412	Harmful to aquatic life with long lasting effects.
STOT RE	Specific target organ toxicity - repeated exposure

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Arlimin Industries, LLC shall not be held liable for any damage resulting from handling or from contact with the above product.

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