

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 PRODUCT IDENTIFIER:

PRODUCT NAME: COBALT OXIDE
PRODUCT CODE : P3403

Chemical Name: Tricobalt tetraoxide
CAS-No: 1308-06-1
EINECS-No: 215-157-2
Registration Number: 01-2119517310-56-0000

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST:

Identified uses. See Section 7.3.
Uses advised against. None

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET:

Supplier: Pottery crafts Ltd.,
Campbell Road,
Stoke-on-Trent.
Staffordshire.
England
ST4 4ET.

Telephone number: 44(0)1782 745000
Fax number: 44(0) 1782 746000
E-mail address: sales@pottery crafts.co.uk

1.4 EMERGENCY TELEPHONE NUMBER:

+44 (0)1782 745000

2. HAZARDS IDENTIFICATION

2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

CLASSIFICATION ACCORDING TO DIRECTIVE 1999/45/EC OR 67/548/EEC

Xn; R42

R52/53

CLASSIFICATION ACCORDING TO REGULATION (EC) NO 1272/2008

Respiratory sensitization Category 1B ; H334

Chronic aquatic toxicity Category 3 ; H412

2.2 Label Elements



SIGNAL WORD: DANGER

HAZARD STATEMENTS:

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

2.

PRECAUTIONARY STATEMENTS:

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray. P273 - Avoid release to the environment. P285 - In case of inadequate ventilation wear respiratory protection. P304 + P341 - IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. P501 - Dispose of contents/container to an approved waste disposal plant.

2.3 OTHER HAZARDS:

Not classified as PBT or vPvB.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME:	PERCENT:	EINECS NO:	REGISTRATION Number:	WARNING SYMBOL, R PHRASES AND OTHER INFORMATION:	GHS Classification
Tricobalt tetraoxide 1308-06-1	97-100	215-152-2	01-2119517310-56-0000	Xn;R42.R52/53,	Resp,Sens 1B H334 Aquatic Chronic3,H412
Cobalt Oxide 1307-96-6	<1	215-154-6	None	Xn;R22,R42/43. T+;R26 N;R50/53	Acute Tox.3;H301 Acute Tox. 2 ; H330 Resp.Sens 1B; H334 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor: 1

FURTHER INFORMATION:

Substance

4. FIRST AID MEASURES**4.1 DESCRIPTION OF FIRST AID MEASURES****EYE CONTACT:**

Separate eyelids, wash the eyes thoroughly with water (15 min). If eye irritation persists, consult a specialist.

SKIN CONTACT:

Wash off with soap and plenty of water. Remove soiled or soaked clothing immediately. Wash contaminated clothing before re-use.

INHALATION:

Remove affected person from the immediate area. Ensure supply of fresh air. Irregular breathing/no breathing: artificial respiration. Consult a physician.

INGESTION:

Rinse mouth. Consult a physician.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

Inhalation: Cough. Sore throat. Breathing difficulties. Shortness of breath.

Ingestion: Abdominal pain. Vomiting.

Skin/Eye contact: Redness.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:

No special requirements.

5. FIRE FIGHTING MEASURES**5.1 EXTINGUISHING MEDIA****SUITABLE EXTINGUISHING MEDIA:**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment e.g.: Water spray. Carbon dioxide (CO2). Dry chemical.

UNSUITABLE EXTINGUISHING MEDIA:

None.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

In the event of fire the following can be released: Cobalt oxide dust.

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3.

5.3 ADVICE FOR FIREFIGHTERS:

Wear self-contained breathing apparatus and protective suit. Dike fire-control water for later disposal. Do not allow run-off from fire fighting to enter drains or water courses.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURE:

Ensure adequate ventilation. Avoid breathing dust. Wear personal protective equipment. Avoid contact with skin, eyes and clothing.

6.2 ENVIRONMENTAL PRECAUTIONS:

Avoid dust formation. Do not discharge into the drains/surface waters/groundwater.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

Sweep spilled substances into containers if appropriate moisten first to prevent dusting. Use mechanical handling equipment. Collect spillage. Send in suitable containers for recovery or disposal.

6.4 REFERENCE TO OTHER SECTIONS:

For handling advice see section 7. For personal protection see section 8. For waste disposal see section 13.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING:

Provide adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid breathing dust. If workplace exposure limits are exceeded, respiratory protection approved for this particular job must be worn.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Keep containers tightly closed in a dry, cool and well-ventilated place.

7.3 SPECIFIC END USE(S):

- Manufacture of tricobalt tetraoxide as catalyst
- Industrial use of tricobalt tetraoxide as catalyst
- Industrial use of tricobalt tetraoxide in the manufacture of inorganic pigments and frits, glass, ceramic ware, varistors and magnets (calcination/sintering processes)
- Manufacture and industrial use of UPR/plastics/PET/FRP using tricobalt tetraoxide
- Manufacture and industrial use of coatings and inks using tricobalt tetraoxide as drier and/or pigment
- Industrial use of tricobalt tetraoxide in the manufacture of chemicals and in other wet-chemical processes as intermediate
- Professional uses of coatings and inks containing tricobalt tetraoxide
- Professional uses of UPR/plastics/PET/FRP containing tricobalt tetraoxide

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

Chemical Name:	Exposure Limit(s):	Source:
Tri Cobalt Oxide	Cobalt & Cobalt Compounds TWA. 0.1mg/m³ Capable of respiratory sensitization	UK Workplace Exposure Limits
Cobalt Oxide	Cobalt & cobalt Compounds TWA. 0.1 mg/m³ Capable of respiratory sensitization	UK Workplace Exposure Limits

Derived No Effect Level (DNEL)	Oral	Inhalation	Dermal
Industry-Long Term Local Effects	-	54.5µg/m ³	-
Industry-Long Term Systematic Effects	-	-	-
Industry- Short Term-Local Effects	-	-	-
Industry –Short Term Systematic Effects	-	-	-
Customer Longt Term Effects	-	8.6µg/m ³	-
Customer Short Term Systematic Effects	12.9		
Consumer-Short Term Local Effect & Systematic Effects	-	-	-

	Predicted No. Effect Concentration (PNEC)
Aquatic Compartment	0.51µg Co/L (fresh water)
Marine Compartment	2.36µg Co/L (Marine Water)
Aquatic Compartment -Sediment	9.5 mg Co/kg sediment dry/wt.
Marine Compartment - Sediment	9.5mg Co/Kg sediment dry wt.
Terrestrial Compartment	7.9mg Co/Kg Soil dw.
Sewage Treatment Plant- Microorganisms	0.373µg Co/L
Atmosphere Compartment	

8.2 EXPOSURE CONTROLS

Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

APPROPRIATE ENGINEERING CONTROLS:

Provide adequate ventilation.

PERSONAL PROTECTIVE EQUIPMENT:

EYE/FACE PROTECTION: Face-shield. Safety glasses.

SKIN PROTECTION: Protective gloves: Rubber. Neoprene. PVC. Butyl.

RESPIRATORY PROTECTION: Use a respirator with filter model P3 (DIN 3181).

ENVIRONMENTAL EXPOSURE CONTROLS:

The employer shall fulfill requirements of IPPC Directive.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

Appearance	Powder
Colour	Grey-Black
Odour	None
Odour Threshold	Not established.
pH	Not applicable.
Melting point/range	Decomposes without melting
Boiling point/range	Not applicable.
Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	The product is not flammable.
Vapour pressure	Not applicable.
Vapour density	Not applicable.
Relative density	6.11 at 20°C

Solubility

-Water solubility	1.62 mg/L at 20 °C
-Fat solubility	No data available.
-Solubility in other solvents	Acids. Ammonia.
Partition coefficient (n-octanol/water)	No data available.
Autoignition temperature	Not applicable.
Decomposition temperature	900 °C
Viscosity	Not applicable.
Explosive properties	Not explosive.
Oxidizing properties	Non oxidizing material according to EEC criteria.

9.2 OTHER INFORMATION:

Bulk density	0.7-2.9 g/cm ³
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10. STABILITY AND REACTIVITY

10.1 REACTIVITY:

Stable under recommended storage conditions.

10.2 CHEMICAL STABILITY:

Stable under recommended storage conditions.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS:

Stable under recommended storage conditions.

10.4 CONDITIONS TO AVOID:

Avoid dust formation.

10.5 INCOMPATIBLE MATERIALS:

None.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS:

Cobalt oxide dust.

11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

ACUTE TOXICITY:

Ingestion:	LD50/oral/rat: >5,000 mg/m ³ . Low acute toxicity.
Inhalation:	Low acute toxicity. Main symptoms: Cough. Sore throat. Shortness of breath. Breathing difficulties.
Skin contact:	LD50/dermal: >2000 mg/kg Low acute toxicity.
Eye contact:	Low acute toxicity.

SKIN CORROSION/IRRITATION:

No data available. Not classified.

SERIOUS EYE DAMAGE/EYE IRRITATION:

No data available. Not classified.

RESPIRATORY OR SKIN SENSITIZATION:

May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

GERM CELL MUTAGENICITY:

No data available. There is no evidence of mutagenic potential.

CARCINOGENICITY:

No evidence of carcinogenicity.

REPRODUCTIVE TOXICITY:

No data available.

SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (SINGLE EXPOSURE):

Not expected.

SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (REPEATED EXPOSURE):

Not expected.

ASPIRATION HAZARD:

Not applicable.

12. ECOLOGICAL INFORMATION

12.1 TOXICITY:

Harmful to aquatic life. By analogy to similar materials:

Cobalt Chloride:

Fish: LC50= 1.5 mg/l (Fresh Water):

Aquatic invertebrates: LC50= 0.61 mg/l (Fresh Water); 2.32 mg/l (Sea Water)

Algae: LC50= 144 µg/l (Fresh Water); 24.1 µ/l (Sea Water)

EC10 (Fresh Water Fish) = 351.4 mg/l

NOEC Aquatic invertebrates= 5.47 µg/l (Fresh Water); 206 µg/l (Sea water)

NOEC Algae= 4.9 µg/l (Fresh water); 1.23 µg/l (Sea water)

12.2 PERSISTENCE AND DEGRADABILITY:

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 BIOACCUMULATIVE POTENTIAL:

Cobalt:

Aquatic plants: Bioconcentration factor (BCF): >100-5000

Aquatic invertebrates: BCF <300

Fresh water, Fish: BCF/BAF <10

Marine fish: BCF/BAF <10

The substance has a low potential for bioaccumulation.

12.4 MOBILITY IN SOIL:

Insoluble in water.

12.5 RESULTS OF PBT AND vPvB ASSESSMENT:

Not classified as PBT or vPvB.

12.6 OTHER ADVERSE EFFECTS:

No data available.

13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS:

EWC WASTE CODE:

06 03 16 - Metallic oxides other than those mentioned in 06 03 15.

The listed waste code numbers, according to the European Waste Catalogue (EWC), are to be understood as a recommendation (2000/532/EC).

WASTE FROM RESIDUES / UNUSED PRODUCTS:

Contact manufacturer. Dispose of as special waste in compliance with local and national regulations.

CONTAMINATED PACKAGING:

Contaminated packaging should be emptied as far as possible. Packaging that cannot be cleaned should be disposed as special waste in compliance with local and national regulations.

14. TRANSPORT INFORMATION

	Land Transport	Sea Transport	Air Transport
14.1 UN-Number	None	None	None
14.2 UN proper shipping name	None	None	None
14.3 Transport Hazard class(es)	None	None	None
14.4 Packing Group	None	None	None
14.5 Environmental hazards	None	None	None
14.6 Special Precautions for users	None	None	None
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable	Not applicable	Not applicable

15. REGULATORY INFORMATION**15.1 SAFETY, HEALTH AND ENVIRONMENT REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE:**

EU REGULATIONS: None known.

NATIONAL REGULATIONS: Cobalt and cobalt compounds are subject to the UK Chemical Hazards Information and Packaging (CHIP 4).

15.2 CHEMICAL SAFETY ASSESSMENT:

A Chemical Safety Assessment has been carried out for this substance.

16. OTHER INFORMATION**LIST OF RELEVANT R-PHRASES:**

R22 - Harmful if swallowed.

R26 - Very toxic by inhalation.

R42 - May cause sensitization by inhalation.

R42/43 - May cause sensitization by inhalation and skin contact.

R43 - May cause sensitization by skin contact.

R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

HAZARD STATEMENTS:

H301 - Toxic if swallowed

H317 - May cause an allergic skin reaction

H330 - Fatal if inhaled

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H400 - Very toxic to aquatic life.

H410 - Very toxic to aquatic life with long lasting effects.

H412 - Harmful to aquatic life with long lasting effects.

LIST OF ABBREVIATIONS USED IN THE SAFETY DATA SHEET:

Resp. Sens. 1 = Respiratory Sensitization Category 1

Aquatic Chronic 3 = Aquatic Chronic Toxicity Category 3

Acute Tox. 2 = Acute Toxicity Category 2

Acute Tox. 3 = Acute Toxicity Category 3

Skin Sens. 1 = Skin Sensitization 1

Aquatic Acute 1 = Aquatic Acute Toxicity Category 1

Aquatic Chronic 1 = Aquatic Chronic Toxicity Category 1

vPvB = very Persistent, very Bioaccumulative

REVISED INFORMATION:

This data sheet contains changes from the previous version in section(s): 1; 2; 3; 12; 16;

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