

Safety Data Sheet



1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: **COBALT OXIDE CATALYST**

Other name(s): Cobalt tetraoxide; Cobalt tetroxide; Tricobalt tetraoxide; Tricobalt tetroxide.

Recommended Use of the Chemical and Restrictions on Use Catalyst.

Supplier: Ixom Operations Pty Ltd
ABN: 51 600 546 512
Street Address: Level 8, 1 Nicholson Street
East Melbourne Victoria 3002
Australia

Telephone Number: +61 3 9906 3000
Emergency Telephone: **1 800 033 111 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

2. HAZARDS IDENTIFICATION

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail; NON-DANGEROUS GOODS.

This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

Classification of the chemical:

Skin Sensitisation - Category 1
Respiratory Sensitisation - Category 1
Carcinogenicity - Category 2

The following health/environmental hazard categories fall outside the scope of the Workplace Health and Safety Regulations:

Acute Aquatic Toxicity - Category 3
Chronic Aquatic Toxicity - Category 3

SIGNAL WORD: DANGER



Hazard Statement(s):

H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H351 Suspected of causing cancer.
H412 Harmful to aquatic life with long lasting effects.

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Precautionary Statement(s):

Prevention:

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 / vapours / spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves / protective clothing / eye protection / face protection.
P281 Use personal protective equipment as required.
P285 In case of inadequate ventilation wear respiratory protection.
P273 Avoid release to the environment.

Response:

P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P321 Specific treatment (see First Aid Measures on Safety Data Sheet).
P363 Wash contaminated clothing before re-use.
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.
P308+P313 IF exposed or concerned: Get medical advice/attention.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents and container in accordance with local, regional, national, international regulations.

Poisons Schedule (SUSMP): None allocated.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Components	CAS Number	Proportion	Hazard Codes
Tricobalt tetraoxide	1308-06-1	100%	H317 H334 H351 H412

4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor.

Inhalation:

Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discolouration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.

Skin Contact:

If skin or hair contact occurs, immediately remove any contaminated clothing and wash skin and hair thoroughly with running water and soap. If swelling, redness, blistering or irritation occurs seek medical assistance.

Eye Contact:

If in eyes, wash out immediately with water. In all cases of eye contamination it is a sensible precaution to seek medical advice.

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Ingestion:

Rinse mouth with water. If swallowed, give a glass of water to drink. If vomiting occurs give further water. Never give anything by the mouth to an unconscious patient. Seek medical advice.

Indication of immediate medical attention and special treatment needed:

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:

Not combustible, however, if material is involved in a fire use: Extinguishing media appropriate to surrounding fire conditions.

Specific hazards arising from the chemical:

Non-combustible material. Environmentally hazardous.

Special protective equipment and precautions for fire-fighters:

Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition.

6. ACCIDENTAL RELEASE MEASURES

Emergency procedures/Environmental precautions:

Clear area of all unprotected personnel. Do not allow container or product to get into drains, sewers, streams or ponds. If contamination of sewers or waterways has occurred advise local emergency services.

Personal precautions/Protective equipment/Methods and materials for containment and cleaning up:

Wear protective equipment to prevent skin and eye contact and breathing in vapours/dust. Avoid breathing in dust. Work up wind or increase ventilation. Cover with damp absorbent (inert material, sand or soil). Sweep or vacuum up, but avoid generating dust. Collect and seal in properly labelled containers, bags or drums for disposal or re-use.

7. HANDLING AND STORAGE

Precautions for safe handling:

Avoid skin and eye contact and breathing in dust. When using do not eat, drink or smoke. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities:

Store in a cool, dry, well ventilated place. Store away from incompatible materials described in Section 10. Keep containers closed when not in use - check regularly for spills.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters: No value assigned for this specific material by Safe Work Australia. However, Workplace Exposure Standard(s) for constituent(s):

Cobalt, metal dust & fume (as Co): 8hr TWA = 0.05 mg/m³, Sen

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As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

'Sen' Notice - sensitiser. The substance can cause a specific immune response in some people. An affected individual may subsequently react to exposure to minute levels of that substance and should not be further exposed to the substance.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Appropriate engineering controls:

Ensure ventilation is adequate to maintain air concentrations below Workplace Exposure Standards. Keep containers closed when not in use.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

Individual protection measures, such as Personal Protective Equipment (PPE):

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, SAFETY GLASSES, GLOVES, DUST MASK.



Wear overalls, safety glasses and impervious gloves. Avoid generating and inhaling dusts. If determined by a risk assessment an inhalation risk exists, wear a dust mask/respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Solid
Colour:	Black
Odour:	Odourless
Odour Threshold:	Not available
Specific Gravity:	Not available
Relative Vapour Density (air=1):	Not available
Vapour Pressure (20 °C):	Not available
Flash Point (°C):	Not available
Flammability Limits (%):	Not available

Product Name: COBALT OXIDE CATALYST
Substance No: 000034612601

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Autoignition Temperature (°C): Not available
Solubility in water (g/L): 0.00156 @20°C
Melting Point/Range (°C): >800
Decomposition Point (°C): >900
pH: Not available

10. STABILITY AND REACTIVITY

Reactivity: No information available.

Chemical stability: Stable under normal conditions of use.

Possibility of hazardous reactions: Hazardous polymerisation will not occur.

Conditions to avoid: Avoid exposure to moisture.

Incompatible materials: Incompatible with reducing agents.

Hazardous decomposition products: None known.

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Ingestion: Swallowing can result in nausea, vomiting, diarrhoea, and abdominal pain.

Eye contact: May be an eye irritant. Exposure to the dust may cause discomfort due to particulate nature. May cause physical irritation to the eyes.

Skin contact: Contact with skin may result in irritation. A skin sensitiser. Repeated or prolonged skin contact may lead to allergic contact dermatitis.

Inhalation: Breathing in dust may result in respiratory irritation. A respiratory sensitiser. Can cause possible allergic reactions, producing asthma-like symptoms.

Acute toxicity:

Oral LD50 (rat): >5000 mg/kg
Dermal LD50 (rabbit): >2000 mg/kg
Inhalation LC50 (rat): >5.06 mg/L/4h

Skin corrosion/irritation: Non-irritant (rat).
Serious eye damage/irritation: Non-irritant (rabbit).
Respiratory or skin sensitisation: A respiratory sensitiser. A skin sensitiser.

Chronic effects: Available evidence from animal studies indicate that repeated or prolonged exposure to this material could result in effects on the lungs.

Cobalt and cobalt compounds (evaluated as a group) have been classified by the International Agency for Research on Cancer (IARC) as a Group 2B carcinogen. Group 2B - The agent is possibly carcinogenic to humans.

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For COBALT:

Oral LD50 (rat): 91 mg/kg (cobalt fluoride) to 317 mg/kg (cobalt carbonate).

Inhalation LC50(rat): 165 mg/m³/0.5hr (mixed oxides).

A significant decrease in lung function due to chronic bronchial obstruction was observed in humans exposed to 0.038 mg/m³ cobalt for 6 hours. Evidence from animal tests and studies with exposed workers indicate that repeated or prolonged exposure to cobalt metal dust and fumes can cause respiratory sensitisation. Exposure may also lead to wheezing, bronchitis and asthma.

Rats and guinea pigs (but not dogs) exposed to 9 mg/m³ cobalt as cobalt oxide for 3 months had increased levels of haemoglobin and subfractions of white blood cells.

Cobalt sulfate administered to guinea pigs at 20 mg cobalt/kg bw/day for 5 weeks resulted in the development of abnormal heart conditions in some of the animals. In workers, transient heart changes (myocardial) have been reported at exposure concentrations below 0.06 mg/m³ as cobalt.

There is some evidence to suggest that cobalt compounds are carcinogenic in test animals, however this effect has occurred following the chronic administration of cobalt directly into the trachea of the animals. Exposure to humans in this manner is highly unlikely and as such cobalt is not likely to present a carcinogenic risk to man.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Avoid contaminating waterways.
Persistence/degradability:	Biodegradation is not an applicable endpoint since the product is an inorganic chemical.
Bioaccumulative potential:	No information available.
Mobility in soil:	No information available.
Aquatic toxicity:	Harmful to aquatic organisms. May cause long lasting harmful effects to aquatic life.
48hr EC50 (Daphnia magna):	>136 mg/L
96hr LC50 (fish):	>136 mg/L (zebrafish)
96hr EC50 (algae):	<88 mg/L (Green algae)

13. DISPOSAL CONSIDERATIONS

Disposal methods:

Refer to Waste Management Authority. Dispose of contents and container in accordance with local, regional, national, international regulations.

14. TRANSPORT INFORMATION

Road and Rail Transport

Not classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail; NON-DANGEROUS GOODS.

Marine Transport

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; NON-DANGEROUS GOODS.

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Air Transport

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; NON-DANGEROUS GOODS.

15. REGULATORY INFORMATION

Classification:

This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

Classification of the chemical:

Skin Sensitisation - Category 1

Respiratory Sensitisation - Category 1

Carcinogenicity - Category 2

The following health/environmental hazard categories fall outside the scope of the Workplace Health and Safety Regulations:

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Chronic Aquatic Toxicity - Category 3

Hazard Statement(s):

H317 May cause an allergic skin reaction.

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

H351 Suspected of causing cancer.

H412 Harmful to aquatic life with long lasting effects.

Poisons Schedule (SUSMP): None allocated.

This material is listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

In: 'The Dictionary of Substances and their Effects'. Ed.Gangolli S. Royal Society of Chemistry, 1999.

International Agency for Research on Cancer. In: 'IARC Monographs on the Evaluation of Carcinogenic Risk to Humans'. World Health Organisation, 1975.

In 'Agency for Toxic Substances and Disease Registry, Toxicological Profile for Cobalt', US Department of Health & Human Services, ATSDR, 1992.

American Conference of Governmental and Industrial Hygienists. In: 'Threshold Limit Values and Biological Exposure Indices'. American Conference of Governmental and Industrial Hygienists Inc., 2001.

Agency for Toxic Substances and Disease Registry. Toxicology Profile. US Dept of Health and Human Services, 1997.

Supplier Safety Data Sheet; 09/ 2019.

This safety data sheet has been prepared by Ixom Operations Pty Ltd (Toxicology & SDS Services).

Reason(s) for Issue:

5 Yearly Revised Primary SDS

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This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Ixom representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.