

# INCO<sup>®</sup> Intermediate Product of Cobalt Metallurgy

(Formerly known as INCO<sup>®</sup> Cobalt Hydrate)

\*\* THIS DATA SHEET IS PREPARED IN COMPLIANCE WITH EU DIRECTIVE 2001/58/EC\*\*

## 1. Chemical Composition and Company Identification

INCO Intermediate Product of Cobalt Metallurgy (Cobalt Hydrate)

### CoO(OH)

C.A.S. Number 12016-80-7

EINECS Number 234-614-7

### CoSO<sub>4</sub>

C.A.S. Number 10124-43-3

EINECS Number 233-334-2

### Co(OH)<sub>3</sub>

C.A.S. Number 7440-48-4

EINECS Number 2343345

### Ni(OH)<sub>2</sub>

C.A.S. Number 12054-48-7

EINECS Number 235-008-5

### NiSO<sub>4</sub>

C.A.S. Number 10101-97-0

EINECS Number 232-104-9

**INCO** Europe Ltd.  
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Clydach, Swansea  
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## 2. Composition

Information on Ingredients

Hazardous Ingredients	Typical Composition	TRK <sup>(1)</sup> mg/m <sup>3</sup> (*)	TLV <sup>(2)</sup> mg/m <sup>3</sup> (*)	MRL <sup>(3)</sup> mg/m <sup>3</sup> (*)
Cobalt Oxyhydroxide	80%	0.1	0.02	0.1
Cobalt Sulphate	7%	0.1	0.02	0.1
Cobalt Hydrate	2%	0.1	0.02	0.1

\*Expressed as the metal in inhalable size fraction

## 3. Hazards Identification

Xn; Harmful

Harmful if swallowed. R22

May cause sensitisation by skin contact. R43

Avoid contact with the skin. S24

Wear suitable protective gloves. S37

Show label if possible. S45

### Ingestion

Co<sub>3</sub>O<sub>4</sub> - no problems recognised, low oral toxicity,

LD<sub>50</sub> rat >5000mg/kg.

CoO - harmful if swallowed LD<sub>50</sub> rat 202mg/kg.

### Inhalation

Repeated contact with cobalt oxide may cause chronic bronchitis.

Nickel oxide may cause respiratory irritation.

Do not breathe the dust.

### Skin Contact

May cause sensitization by skin contact. Allergic skin rashes have been reported after repeated contact.

### Environment

Not classified.

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## 4. First Aid Measures

<b>Ingestion</b>	Large quantities of water should be drunk. Seek medical attention.
<b>Inhalation</b>	No specific first aid required.
<b>Skin</b>	Wash thoroughly with water to remove any particles. If rashes persist seek medical attention.
<b>Eyes</b>	Irrigate eyes thoroughly with water for at least 10 minutes. If discomfort persists seek medical attention.
<b>Wounds</b>	Cleanse thoroughly to remove any oxide particles.

## 5. Fire Fighting Measures

Non-flammable. Extinguish surrounding fires with appropriate methods.

## 6. Accidental Release Measures

Collect spills by wet sweeping or vacuuming with the vacuum exhaust passing through a high efficiency particulate arresting (HEPA) filter if exhaust is discharged into the work place. Wear appropriate nationally approved respirators if collection and disposal of spills is likely to cause the concentration limits of airborne cobalt or nickel to exceed the locally prescribed exposure limits.

## 7. Handling and Storage

Keep in the container supplied and keep container closed when not in use. As packed cobalt oxide may constitute a manual handling risk.

Cobalt oxide is subject to the Control of Major Accident Hazards Directives 82/501EEC, 96/82/EC & 98/433/EC (The Seveso Directive). Local consent needs to be obtained to store quantities in excess of 1 tonne.

## 8. Exposure Controls / Personal Protection

For exposure limits see Section 2. Maintain airborne cobalt & nickel oxide levels as low as possible. Do not inhale dust. Ventilation is normally required when handling or using this product to keep airborne cobalt & nickel oxide below the nationally authorized limits. If ventilation alone cannot control exposure, use respirators nationally approved for the purpose.

Avoid repeated skin and eye contact. Wear goggles or face shield. Wear suitable protective clothing and gloves. Wash skin thoroughly after handling and before eating, drinking or smoking. Launder clothing and gloves as needed.

## 9. Physical and Chemical Properties

Black, odourless powder.

Ingredient	Mol. Wt.
Co <sub>2</sub> O <sub>3</sub>	240.8
CoO	74.89

Viscosity	Not Applicable (N/A)
Freezing point / freezing range	1984°C
Boiling point/ boiling range	N/A
Flash Point	N/A
Autoflammability	N/A
Explosive properties	Not explosive
Vapour pressure	N/A
Bulk density	1.8 - 2.7 g/cm <sup>3</sup> (6)

Particle size	99% less than 45µm
Solubility cold water	N/A
Solubility hot water	N/A
Partition coefficient	N/A
Magnetic properties	Paramagnetic

## 10. Stability and Reactivity

Stable and non reactive.

## 11. Toxicological Information

### Inco Intermediate Product of Cobalt Metallurgy

Oral LD<sub>50</sub> >5000kg mg/kg BW

Sensitization

Inhalation of cobalt oxide may cause irritation of respiratory organs of sensitive persons resulting in shortness of breath.

Skin Contact

Cobalt and nickel are potent skin sensitizers. There is limited evidence that the pure oxides are sensitizers but they may do so in mixed exposures. Allergic contact dermatitis has been reported from different types of industries using cobalt products. Repeated/prolonged contact with nickel oxide may cause nickel sensitivity resulting in skin allergy and/or asthma.

### Mutagenicity/Reproductive Toxicity

There is no data available from human studies that are suitable for evaluation.

### Other Health Effects

Heart muscle problems, blood disorders, thyroid disorders and pancreas disorders have all been described under certain circumstances of cobalt exposure/ingestion - all are rare and not specifically related to cobalt oxide.

## 12. Ecological Information

The environmental classification has not been decided.

## 13. Disposal Considerations

Cobalt and nickel-containing material is normally collected to recover metal values. Should disposal be deemed necessary follow local regulations.

## 14. Transport Information

International Maritime Dangerous Goods Code	Not regulated.
International Civil Aviation Organization Technical Instructions for the Carriage of Dangerous Goods by Air	Not regulated.
U.S. Dept. of Transportation Regulations	Not regulated.
Canadian Transportation of Dangerous Goods Act	Not regulated.
European Agreement Concerning the International Carriage of Dangerous Goods by Road	Class 9

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## 15. Regulatory Information

Soluble Cobalt compounds are classified as skin sensitizers and as harmful by ingestion by the EU in Directive 67/548/EEC (Classification, Packaging and Labeling Directive) and in the UK in the Chemicals Hazard Information and Packaging for Supply <sup>(11)</sup> in addition they are classified as harmful to the environment and as such require to be labeled with the following risk phrases.

Xn; Harmful  
Harmful if swallowed. R22  
May cause sensitization by skin contact. R43

T; Toxic. Category 1 carcinogen.  
May cause cancer by inhalation. R49  
May cause sensitization by skin contact. R43  
Avoid exposure, seek special instructions before use. S53  
In case of accident or if you feel unwell seek medical attention immediately. Show label where possible. S45

## 16. Other Information

Medical staff should note that this data sheet has been lodged with the following Poisons Information Centre :  
National Poison Centre  
Phoneline : 0870 6006266  
E- Mail : [wnpu@compuserve.com](mailto:wnpu@compuserve.com)  
Fax : 02920 704357

## 17. Notes and Bibliography

**Inco** is the Trademark of the **Inco** family of companies.

**Disclaimer:** The information in this Data Sheet is provided in good faith and is accurate to **Inco**'s best knowledge and belief but except as implied by law, no representation or warranty is given in relation to the information and INCO accepts no liability.

- 1 T.R.K. is Technische Richtkonzentrationen as defined in the Deutsche Forschungsgemeinschaft, List of MAK & BAT values. 1998
- 2 Threshold Limit Values of the American Conference of Governmental Industrial Hygienists. 1998
- 3 Maximum Exposure Limit of the Health and Safety Executive in the U.K. in EH40 1998.