



Material Safety Data Sheet (MSDS)

Cobalt Metal (High-Purity Grade, $\geq 99\%$)

Section 1: Identification of the Substance and Company

Product Name: Cobalt Metal

Synonyms: Electrolytic Cobalt, Refined Cobalt

Recommended Use: Production of alloys, catalysts, batteries, pigments.

Supplier/Manufacturer:

Basekim Kimyasal Ürünler LTD

Turan Gunes Blv. Ilkbahar Mah. Sinpas Altinoran Tower 2, Floor 1, Unit 146
Ankara, Turkey

Transportation Emergency Response: Logistics: 88552948

Health Emergency Contact: +90 312 514 7055 / +90 312 514 7081

MSDS Requests: +90 312 514 7055 / +90 312 514 7081

Section 2: Composition/Information on Ingredients

- **Substance:** Cobalt (Co)
- **CAS Number:** 7440-48-4
- **Purity:** $\geq 99\%$
- **Impurities:** Trace amounts of Ni, Fe, Cu may be present depending on grade.

Section 3: Hazard Identification



GHS Classification:

- Carcinogenicity (Category 1B)
- Respiratory Sensitization (Category 1)
- Skin Sensitization (Category 1)
- Specific Target Organ Toxicity (Repeated Exposure) (Category 1, lungs & heart)

Hazard Statements:

- H350: May cause cancer.
- H317: May cause allergic skin reaction.
- H334: May cause allergy or asthma symptoms if inhaled.
- H372: Causes damage to organs (lungs, heart) through prolonged or repeated exposure.

Signal Word: *Danger*

Precautionary Statements:

- P201: Obtain special instructions before use.
- P260: Do not breathe dust/fumes.
- P280: Wear protective gloves, clothing, eye protection, and respiratory protection.
- P308+P313: If exposed or concerned, seek medical advice.

Section 4: First Aid Measures

- **Inhalation:** Remove to fresh air. If breathing difficulties occur, provide oxygen or artificial respiration and seek immediate medical attention.
- **Skin Contact:** Wash with soap and water. Remove contaminated clothing. Seek medical advice if irritation develops.
- **Eye Contact:** Rinse cautiously with water for at least 15 minutes. Seek medical attention if irritation persists.
- **Ingestion:** Rinse mouth. Do not induce vomiting. Seek immediate medical advice.



Section 5: Firefighting Measures

- **Suitable Extinguishing Media:** Dry sand, dry chemical, CO₂.
- **Unsuitable Media:** Do not use water on burning metal.
- **Specific Hazards:** Finely divided cobalt dust may ignite spontaneously and form explosive mixtures with air.
- **Protective Equipment:** Firefighters must wear SCBA and full protective clothing.

Section 6: Accidental Release Measures

- **Personal Precautions:** Avoid dust formation. Use personal protective equipment.
- **Environmental Precautions:** Prevent entry into sewers, drains, and natural water bodies.
- **Cleanup:** Collect mechanically into sealed, labeled containers. Use industrial vacuum with HEPA filter. Avoid dry sweeping.

Section 7: Handling and Storage

- **Handling:** Avoid generation of dust and fumes. Use adequate local exhaust ventilation. Do not eat, drink, or smoke when handling.
- **Storage:** Store in a cool, dry, well-ventilated area. Keep container tightly closed. Protect from oxidizing agents.

Section 8: Exposure Controls/Personal Protection

**Occupational Exposure Limits:**

- OSHA PEL: 0.1 mg/m³ (as Co, TWA)
- ACGIH TLV: 0.02 mg/m³ (as Co, inhalable fraction, TWA)

Engineering Controls:

- Provide local exhaust ventilation at points of dust/fume generation.

PPE:

- **Respiratory Protection:** Use NIOSH-approved respirator if airborne concentrations exceed exposure limits.
- **Eye Protection:** Safety goggles or face shield.
- **Skin Protection:** Protective gloves and industrial clothing.
- **Hygiene:** Wash hands thoroughly after handling. Change contaminated clothing.

Section 9: Physical and Chemical Properties

- **Appearance:** Grey to silver, metallic solid
- **Molecular Weight:** 58.93 g/mol
- **Melting Point:** 1495 °C
- **Boiling Point:** 2927 °C
- **Density:** 8.9 g/cm³
- **Solubility:** Insoluble in water
- **Odor:** Odorless

Section 10: Stability and Reactivity

- **Stability:** Stable under recommended storage and handling.



- **Reactivity:** Reacts with acids, oxidizers, halogens.
- **Hazardous Decomposition Products:** Cobalt oxides under fire conditions.

Section 11: Toxicological Information

- **Acute Toxicity:** Harmful if inhaled or ingested.
- **Skin/Eye Contact:** Dust may cause irritation and allergic reaction.
- **Sensitization:** Strong skin and respiratory sensitizer.
- **Chronic Effects:** Long-term exposure linked to lung fibrosis, cardiomyopathy, and cancer.
- **Carcinogenicity:** Classified as possibly carcinogenic to humans (IARC Group 2B).

Section 12: Ecological Information

- **Ecotoxicity:** Toxic to aquatic organisms, may cause long-lasting harmful effects.
- **Persistence:** Not readily biodegradable.
- **Bioaccumulation:** Cobalt compounds may bioaccumulate in aquatic organisms.
- **Environmental Note:** Avoid release into the environment.

Section 13: Disposal Considerations

- Dispose of in accordance with local, regional, and international regulations.
 - Recycling of cobalt metal is recommended where feasible.
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Section 14: Transport Information

- **UN Number:** Not classified as hazardous for transport in solid metallic form.
- **Proper Shipping Name:** Cobalt Metal
- **Hazard Class:** Non-hazardous under ADR/RID/IMDG/IATA.
- **Packing Group:** Not applicable.

Section 15: Regulatory Information

- Cobalt is listed under EU REACH and OSHA Hazard Communication Standard.
- Workplace exposure monitoring required.

Section 16: Other Information

Disclaimer:

This MSDS has been prepared using the most recent technical data and is consistent with international safety regulations. The information is believed to be reliable as of the date of issue but is provided without warranty.

Users are responsible for ensuring safe handling, appropriate use, and compliance with applicable laws and regulations.