



SAFETY DATA SHEET

MATERION

1. Identification

Product identifier	Cobalt pieces
Other means of identification	
SDS number	1FN
Materion Code	1FN
CAS number	7440-48-4
Synonyms	kobolt * COBALT, ELEMENTAL

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	Materion Electronic Materials
Address	6070 Parkland Blvd Mayfield Heights, Ohio 44124 United States
Telephone	1.216.383.4019
E-mail	Materion-PS@materion.com
Contact person	Product Stewardship Director
Emergency phone number	See Section 16

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Sensitization, respiratory	Category 1
	Sensitization, skin	Category 1
	Germ cell mutagenicity	Category 2
	Carcinogenicity	Category 1B
	Reproductive toxicity	Category 1B
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing genetic defects. May cause cancer. May damage fertility or the unborn child.
Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation wear respiratory protection.
Response	If on skin: Wash with plenty of water. Wash contaminated clothing before reuse. If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If exposed or concerned: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. If experiencing respiratory symptoms: Call a poison center/doctor.
Storage	Store locked up.

Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	For further information, please contact the Product Stewardship Department at +1.216.383.4019.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Cobalt	kobolt COBALT, ELEMENTAL	7440-48-4	100

4. First-aid measures

Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a poison center or doctor/physician.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Coughing. Difficulty in breathing. May cause an allergic skin reaction. Dermatitis. Rash.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Powder. Dry sand.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Use water spray to cool unopened containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	The product is immiscible with water and will spread on the water surface. Stop the flow of material, if this is without risk. Following product recovery, flush area with water. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS. The product is insoluble in water.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage**Precautions for safe handling**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection**Occupational exposure limits**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Permissible Exposure Limits (PEL) for Air Contaminants (29 CFR 1910.1000)

Material	Type	Value	Form
Cobalt (CAS 7440-48-4)	PEL	0.1 mg/m ³	Dust and fume.

US. ACGIH Threshold Limit Values (TLV)

Material	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0.02 mg/m ³	Inhalable fraction.

NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended

Material	Type	Value
Cobalt (CAS 7440-48-4)	IDLH	20 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards Recommended Exposure Limits (REL)

Material	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0.05 mg/m ³	Dust and fume.

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

Material	Type	Value	Form
Cobalt (CAS 7440-48-4)	PEL	0.02 mg/m ³	Dust and fume.

Biological limit values**ACGIH Biological Exposure Indices (BEI)**

Material	Value	Determinant	Specimen	Sampling Time
Cobalt (CAS 7440-48-4)	15 µg/l	Cobalt	Urine	*

* - For sampling details, please see the source document.

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. General ventilation normally adequate.

Individual protection measures, such as personal protective equipment**Eye/face protection**

If contact is likely, safety glasses with side shields are recommended.

Skin protection**Hand protection**

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Solid.
Color	Bluish silver
Odor	None.
Odor threshold	Not applicable.
pH	Not available.
Melting point/freezing point	2723 °F (1495 °C)
Initial boiling point and boiling range	5300.6 °F (2927 °C)
Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not applicable.

Upper/lower flammability or explosive limits

Explosive limit - lower (%)	Not applicable.
Explosive limit - lower (%) temperature	Not applicable.
Explosive limit - upper (%)	Not applicable.
Explosive limit - upper (%) temperature	Not applicable.
Vapor pressure	<0.0000001 kPa (77 °F (25 °C))
Vapor density	Not applicable.
Relative density	Not applicable.
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not applicable.
Viscosity	Not applicable.

Other information

Density	8.92 g/m ³
Explosive properties	Not explosive.
Kinematic viscosity	Not applicable.
Molecular formula	Co
Molecular weight	58.93 g/mol
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.

Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause allergy or asthma symptoms or breathing difficulties if inhaled. Prolonged inhalation may be harmful.
Skin contact	May cause an allergic skin reaction.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Coughing. Difficulty in breathing. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity	Not known.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

ACGIH sensitization

Cobalt and inorganic compounds, inhalable fraction, as Co (CAS 7440-48-4)	Dermal sensitization
	Respiratory sensitization

Respiratory sensitization May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity Suspected of causing genetic defects.

Carcinogenicity May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Cobalt (CAS 7440-48-4) 2A Probably carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Cobalt (CAS 7440-48-4) Reasonably Anticipated to be a Human Carcinogen.

Reproductive toxicity May damage fertility or the unborn child.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability No data is available on the degradability of this substance.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories Respiratory or skin sensitization
Germ cell mutagenicity
Carcinogenicity
Reproductive toxicity

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Cobalt	7440-48-4	100

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Cobalt (CAS 7440-48-4)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Listed.

US state regulations

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Cobalt (CAS 7440-48-4)

California Proposition 65



WARNING: This product can expose you to Cobalt, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Cobalt (CAS 7440-48-4)

Listed: July 1, 1992

16. Other information, including date of preparation or last revision

Issue date 08-20-2013

Revision date 08-27-2024

Version # 07

Further information Transportation Emergency
Call Chemtrec at:
US: 800.424.9300
International: 703.741.5970
Spain: 900.868.538
Switzerland: 0800.564.402
Chemtrec's toll free, mobile-enabled number in Germany – 0800 1817059
South Korea Toll-free Number – 080-880-0468

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Revision information This document has undergone significant changes and should be reviewed in its entirety.