



# PRODUCT INFORMATION SHEET

**MATERION**

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

**Trade name or designation of the mixture** Iron Cobalt

**Registration number** -

**Synonyms** None.

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Identified uses** Manufacture of computer, electronic and optical products, electrical equipment  
Scientific research and development

**Uses advised against** Professional uses: Public domain (administration, education, entertainment, services, craftsmen)  
Consumer uses: Private households (= general public = consumers)

### 1.3. Details of the supplier of the safety data sheet

#### Supplier

**Company name** Materion Electronic Materials  
**Address** 6070 Parkland Boulevard  
Mayfield Heights, OH 44124  
United States

#### Division

**Telephone** 1.216.383.4019

**e-mail** ehs@materion.com

**Contact person** Theodore Knudson

**1.4. Emergency telephone number** See Section 16.

**Document number** WAMTFP-317

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**Contact person** Theodore Knudson

**1.4. Emergency telephone number** See Section 16.

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

#### Classification according to Regulation (EC) No 1272/2008 as amended

##### Health hazards

Acute toxicity, oral	Category 4	H302 - Harmful if swallowed.
Respiratory sensitisation	Category 1	H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitisation	Category 1	H317 - May cause an allergic skin reaction.
Germ cell mutagenicity	Category 2	H341 - Suspected of causing genetic defects.
Carcinogenicity	Category 1B	H350 - May cause cancer.
Reproductive toxicity (fertility)	Category 1B	H360F - May damage fertility.

**2.2. Label elements****Label according to Regulation (EC) No. 1272/2008 as amended****Contains:**

Cobalt, Iron

**Hazard pictograms****Signal word**

Danger

**Hazard statements**

	The material as sold in solid form is generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulate could be generated.
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H360F	May damage fertility.

**Precautionary statements****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.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P284	Wear respiratory protection.

**Response**

P301 + P312	IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.
P330	Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTRE/doctor.
P362 + P364	Take off contaminated clothing and wash it before reuse.

**Storage**

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

**Disposal**

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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**Supplemental label information**

For further information, please contact the Product Stewardship Department at +1.216.383.4019.

**2.3. Other hazards**

This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII. The mixture does not contain any substances included in the list established in accordance with REACH Article 59(1) for having endocrine disrupting properties at a concentration equal to or greater than 0.1% by weight.

**SECTION 3: Composition/information on ingredients****3.2. Mixtures**

## General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Iron	50 - 99	7439-89-6 231-096-4	-	-	
<b>Classification:</b> -					
Cobalt	1 - 49	7440-48-4 231-158-0	01-2119517392-44-0000	027-001-00-9	
<b>Classification:</b> Acute Tox. 4;H302;(ATE: 500 mg/kg bw), Resp. Sens. 1;H334, Skin Sens. 1;H317, Carc. 1B;H350, Repr. 2;H361					

## List of abbreviations and symbols that may be used above

ATE: Acute toxicity estimate.

M: M-factor

vPvB: very persistent and very bioaccumulative substance.

PBT: persistent, bioaccumulative and toxic substance.

#: This substance has been assigned Union workplace exposure limit(s).

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

**Composition comments** The full text for all H-statements is displayed in section 16.

## SECTION 4: First aid measures

**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. Wash contaminated clothing before reuse.

### 4.1. Description of first aid measures

#### Inhalation

Remove victim 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 centre 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. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

May cause respiratory irritation. Coughing. Difficulty in breathing. May cause an allergic skin reaction. Dermatitis. Rash.

### 4.3. Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

## SECTION 5: Firefighting measures

**General fire hazards** No unusual fire or explosion hazards noted.

### 5.1. Extinguishing media

#### Suitable extinguishing media

Powder. Dry sand. Dry sand, sodium chloride powder, graphite powder or Met-L-X powder.

#### Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

### 5.2. Special hazards arising from the substance or mixture

During fire, gases hazardous to health may be formed.

### 5.3. Advice for firefighters

#### Special protective equipment for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

#### Special firefighting procedures

Use water spray to cool unopened containers.

### Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
<b>For emergency responders</b>	Keep unnecessary personnel away. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. Use personal protection recommended in Section 8 of the Product Information Sheet.

### 6.2. Environmental precautions

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

### 6.3. Methods and material for containment and cleaning up

Large Spills: Stop the flow of material, if this is without risk. Following product recovery, flush area with water.

Small Spills: Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers.

### 6.4. Reference to other sections

For personal protection, see section 8 of the Product Information Sheet. For waste disposal, see section 13 of the Product Information Sheet.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not taste or swallow. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. 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. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

### 7.2. 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 Product Information Sheet).

### 7.3. Specific end use(s)

Observe industrial sector guidance on best practices.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

#### Austria. OELs. TRK List, Grenzwerteverordnung, BGBl. II, no. 429/2011, as amended

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	STEL	0,4 mg/m <sup>3</sup>	Inhalable fraction.
	TWA	0,1 mg/m <sup>3</sup>	Inhalable fraction.

#### Belgium. OEL. Exposure Limit Values to Chemical Substances at Work, Code of Well-being at work, Book VI, Title 1 - Chemical agents, as amended

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m <sup>3</sup>	Dust and fume.
		0,005 mg/m <sup>3</sup>	Thoracic fraction.

#### Bulgaria. OELs. Ordinance No 13 on protection of workers against risks of exposure to chemical agents at work, as amended

Components	Type	Value
Cobalt (CAS 7440-48-4)	TWA	0,1 mg/m <sup>3</sup>

#### Croatia. OELs (GVI). Regulation on Protection of Workers against Exposure to Dangerous Chemicals at Work, OELs and Biological Limit Values, Annex I (NN 91/2018), as amended

Components	Type	Value
Cobalt (CAS 7440-48-4)	MAC	0,1 mg/m <sup>3</sup>

#### Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0,1 mg/m <sup>3</sup>	Dust and fume.

**Czech Republic. Occupational exposure limit values of chemicals at work (Decree on protection of health at work, 361/2007, Annex 2, Part A & Annex 3, Part A, as amended)**

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	Ceiling	0,1 mg/m <sup>3</sup>	Aerosol, inhalable.
	TWA	0,05 mg/m <sup>3</sup>	Aerosol, inhalable.
Iron (CAS 7439-89-6)	TWA	10 mg/m <sup>3</sup>	

**Denmark. Work Environment Authority. Exposure Limits for Substances & Materials, Annex 2**

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TLV	0,01 mg/m <sup>3</sup>	Dust and fume.

**Estonia. OELs. Occupational Exposure Limits of Hazardous Substances (Regulation No. 105/2001, Annex), as amended**

Components	Type	Value
Cobalt (CAS 7440-48-4)	TWA	0,05 mg/m <sup>3</sup>

**Finland. HTP-arvot, App 3., Binding Limit Values, Social Affairs and Ministry of Health**

Components	Type	Value
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m <sup>3</sup>

**Greece. OELs, Presidential Decree No. 307/1986, as amended**

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0,1 mg/m <sup>3</sup>	Dust and fume.

**Hungary. OELs. Decree on protection of workers exposed to chemical agents (5/2020. (II.6)), Annex 1&2, as amended**

Components	Type	Value
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m <sup>3</sup>

**Iceland. OELs. Regulation 390/2009 on Pollution Limits and Measures to Reduce Pollution at the Workplace, as amended**

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m <sup>3</sup>	Dust and fume.

**Ireland. OELVs, Schedules 1 & 2, Code of Practice for Chemical Agents and Carcinogens Regulations**

Components	Type	Value
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m <sup>3</sup>

**Italy. OELs (Legislative Decree n.81, 9 April 2008), as amended**

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m <sup>3</sup>	Inhalable fraction.

**Latvia. OELs. Occupational Exposure Limits of Chemical Substances at Workplace (Reg. No. 325/ 2007, L.V. 80, Annex 1), as amended**

Components	Type	Value
Cobalt (CAS 7440-48-4)	TWA	0,5 mg/m <sup>3</sup>

**Lithuania. OELs. Occupational Exposure Limit Values for Chemical Substances (Hygiene Norm HN 23:2011; Order No. V-824/A1-389), as amended**

Components	Type	Value
Cobalt (CAS 7440-48-4)	TWA	0,05 mg/m <sup>3</sup>

**Netherlands. OELs per Annex XIII of Working Conditions Regulation (Staatscourant no. 252, 29 December 2006), as amended**

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m <sup>3</sup>	Dust and fume.

**Poland. Maximum permissible concentrations and intensities of harmful factors in the work environment (Dz.U.Poz. 1286/2018, Annex 1)**

Components	Type	Value
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m <sup>3</sup>

**Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796-2014)**

Components	Type	Value
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m <sup>3</sup>

**Romania. OELs. Limit Values of Chemical Agents at Workplace (Regulation 1.218/2006, M.O 845, Annex 1, 3&4, as amended)**

Components	Type	Value
Cobalt (CAS 7440-48-4)	STEL	0,1 mg/m <sup>3</sup>
	TWA	0,05 mg/m <sup>3</sup>

**Slovakia. OELs. Maximum permissible exposure limits for chemical factors in workplace air (Regulation No 355/2006, Annex 1, Table 1, as amended)**

Components	Type	Value
Cobalt (CAS 7440-48-4)	TWA	0,05 mg/m <sup>3</sup>
Iron (CAS 7439-89-6)	TWA	6 mg/m <sup>3</sup>

**Spain. OELs. INSST, Límites de Exposición Profesional Para Agentes Químicos, Table 1-Valores Límites Ambientales (VLAs)**

Components	Type	Value
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m <sup>3</sup>

**Sweden. OELs (Annex 1). Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2018:1), as amended**

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0,02 mg/m <sup>3</sup>	Inhalable dust.

**Switzerland. SUVA Grenzwerte am Arbeitsplatz: Aktuelle MAK-Werte**

Components	Type	Value	Form
Cobalt (CAS 7440-48-4)	TWA	0,05 mg/m <sup>3</sup>	Inhalable fraction.

**UK. OELs. Workplace Exposure Limits (WELs) (EH40/2005 (Fourth Edition 2020)), Table 1**

Components	Type	Value
Cobalt (CAS 7440-48-4)	TWA	0,1 mg/m <sup>3</sup>

**Biological limit values****Finland. HTP-arvot, App 2., Biological Limit Values, Social Affairs and Ministry of Health**

Components	Value	Determinant	Specimen	Sampling Time
Cobalt (CAS 7440-48-4)	130 nmol/l	Cobalt	Urine	*

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

**France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS), ND 2065)**

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

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

**Hungary. BELs. Decree on protection of workers exposed to chemical agents (5/2020. (II.6)), Annex 3&4, as amended**

Components	Value	Determinant	Specimen	Sampling Time
Cobalt (CAS 7440-48-4)	0,019 µmol/mmol	Cobalt	Creatinine in urine	*
	0,01 mg/g	Cobalt	Creatinine in urine	*

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

**Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2**

Components	Value	Determinant	Specimen	Sampling Time
Cobalt (CAS 7440-48-4)	20,03 µg/g	Cobalt	Creatinine in urine	*
	30 µg/l	Cobalt	Urine	*

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

**Switzerland. SUVA Grenzwerte am Arbeitsplatz: Aktuelle BAT-Werte**

Components	Value	Determinant	Specimen	Sampling Time
Cobalt (CAS 7440-48-4)	30 µg/l	Cobalt	Urine	*

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

**Recommended monitoring procedures** Follow standard monitoring procedures.

**Derived no effect levels (DNELs)** Not available.

**Predicted no effect concentrations (PNECs)** Not available.

**Exposure guidelines****Austria MAK: Skin designation**

Cobalt (CAS 7440-48-4) Can be absorbed through the skin.

**Germany DFG MAK (advisory): Skin designation**

Cobalt (CAS 7440-48-4) Can be absorbed through the skin.

**Sweden Threshold Limit Values: Skin designation**

Cobalt (CAS 7440-48-4) Can be absorbed through the skin.

**Switzerland SUVA Limit Values at the Workplace: Skin designation**

Cobalt (CAS 7440-48-4) Can be absorbed through the skin.

**8.2. Exposure controls**

**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**

**General information** Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the 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.

**Hygiene measures**

Observe any medical surveillance requirements. Keep away from food and drink. 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.

**Environmental exposure controls**

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

**Physical state** Solid.

**Form** Solid.

**Colour** Not available.

**Odour** None.

**Odour threshold** Not applicable.

**Melting point/freezing point** 1495 °C (2723 °F) estimated

**Boiling point or initial boiling point and boiling range** 2861 °C (5181,8 °F) estimated

**Flammability** Not flammable

**Upper/lower flammability or explosive limits**

**Explosive limit - lower (%)** Not applicable.

<b>Explosive limit - lower (%) temperature</b>	Not applicable.
<b>Explosive limit – upper (%)</b>	Not applicable.
<b>Explosive limit - upper (%) temperature</b>	Not applicable.
<b>Flash point</b>	Not applicable.
<b>Auto-ignition temperature</b>	Not applicable.
<b>Decomposition temperature</b>	Not applicable.
<b>pH</b>	Not applicable.
<b>Kinematic viscosity</b>	Not applicable.
<b>Solubility</b>	
<b>Solubility (water)</b>	Insoluble
<b>Partition coefficient (n-octanol/water) (log value)</b>	Not applicable.
<b>Vapour pressure</b>	-0,01 hPa estimated
<b>Density and/or relative density</b>	
<b>Relative density</b>	Not applicable.
<b>Vapour density</b>	Not applicable.
<b>Particle characteristics</b>	
<b>Particle size</b>	Not applicable.
<b>9.2. Other information</b>	
<b>9.2.1. Information with regard to physical hazard classes</b>	No relevant additional information available.
<b>9.2.2. Other safety characteristics</b>	
<b>Evaporation rate</b>	Not applicable.
<b>Viscosity</b>	Not applicable.

## SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>10.2. Chemical stability</b>	Material is stable under normal conditions.
<b>10.3. Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>10.4. Conditions to avoid</b>	Contact with incompatible materials.
<b>10.5. Incompatible materials</b>	Strong oxidising agents.
<b>10.6. Hazardous decomposition products</b>	No hazardous decomposition products are known.

## SECTION 11: Toxicological information

<b>General information</b>	Occupational exposure to the substance or mixture may cause adverse effects.
<b>Information on likely routes of exposure</b>	
<b>Inhalation</b>	May cause irritation to the respiratory system. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Prolonged inhalation may be harmful.
<b>Skin contact</b>	May cause an allergic skin reaction.
<b>Eye contact</b>	Direct contact with eyes may cause temporary irritation.
<b>Ingestion</b>	Harmful if swallowed.
<b>Symptoms</b>	May cause respiratory irritation. Coughing. Difficulty in breathing. May cause an allergic skin reaction. Dermatitis. Rash.
<b>11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008</b>	
<b>Acute toxicity</b>	Harmful if swallowed.
<b>Skin corrosion/irritation</b>	Due to partial or complete lack of data the classification is not possible.
<b>Serious eye damage/eye irritation</b>	Due to partial or complete lack of data the classification is not possible.
<b>Respiratory sensitisation</b>	May cause allergy or asthma symptoms or breathing difficulties if inhaled.



<b>Skin sensitisation</b>	May cause an allergic skin reaction.
<b>Germ cell mutagenicity</b>	Suspected of causing genetic defects.
<b>Carcinogenicity</b>	May cause cancer.

**Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)**

Cobalt (CAS 7440-48-4)

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Cobalt (CAS 7440-48-4)

2B Possibly carcinogenic to humans.

<b>Reproductive toxicity</b>	May damage fertility.
<b>Specific target organ toxicity - single exposure</b>	May cause respiratory irritation.
<b>Specific target organ toxicity - repeated exposure</b>	Due to partial or complete lack of data the classification is not possible.
<b>Aspiration hazard</b>	Due to partial or complete lack of data the classification is not possible.
<b>Mixture versus substance information</b>	No information available.

**11.2. Information on other hazards**

**Endocrine disrupting properties**

This mixture does not contain any substances having endocrine disrupting properties with respect to human health as assessed in accordance with the criteria set out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605, at a concentration equal to or greater than 0.1% by weight.

**Other information**

Not available.

**SECTION 12: Ecological information**

<b>12.1. Toxicity</b>	Based on available data, the classification criteria are not met for hazardous to the aquatic environment.
<b>12.2. Persistence and degradability</b>	No data is available on the degradability of any ingredients in the mixture.
<b>12.3. Bioaccumulative potential</b>	No data available.
<b>Partition coefficient n-octanol/water (log Kow)</b>	Not available.
<b>Bioconcentration factor (BCF)</b>	Not available.
<b>12.4. Mobility in soil</b>	No data available.
<b>12.5. Results of PBT and vPvB assessment</b>	This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.
<b>12.6. Endocrine disrupting properties</b>	This mixture does not contain any substances having endocrine disrupting properties with respect to the environment as assessed in accordance with the criteria set out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605, at a concentration equal to or greater than 0.1% by weight.
<b>12.7. Other adverse effects</b>	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

**12.8. Additional information**

**Estonia Dangerous substances in soil Data**

Cobalt (CAS 7440-48-4)

Cobalt (Co) 20 mg/kg

Cobalt (Co) 300 mg/kg

Cobalt (Co) 50 mg/kg

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

<b>Residual waste</b>	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).
<b>Contaminated packaging</b>	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.
<b>EU waste code</b>	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Disposal methods/information** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Discourage sewage disposal. Waste should not be disposed of by release to sewers. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Special precautions** Dispose in accordance with all applicable regulations.

## SECTION 14: Transport information

### ADR

**14.1. UN number** Not regulated as dangerous goods.  
**14.2. UN proper shipping name** Not regulated as dangerous goods.  
**14.3. Transport hazard class(es)**  
**Class** Not assigned.  
**Subsidiary risk** -  
**Hazard No. (ADR)** Not assigned.  
**Tunnel restriction code** Not assigned.  
**14.4. Packing group** -  
**14.5. Environmental hazards** No.  
**14.6. Special precautions for user** Not assigned.

### RID

**14.1. UN number** Not regulated as dangerous goods.  
**14.2. UN proper shipping name** Not regulated as dangerous goods.  
**14.3. Transport hazard class(es)**  
**Class** Not assigned.  
**Subsidiary risk** -  
**14.4. Packing group** -  
**14.5. Environmental hazards** No.  
**14.6. Special precautions for user** Not assigned.

### ADN

**14.1. UN number** Not regulated as dangerous goods.  
**14.2. UN proper shipping name** Not regulated as dangerous goods.  
**14.3. Transport hazard class(es)**  
**Class** Not assigned.  
**Subsidiary risk** -  
**14.4. Packing group** -  
**14.5. Environmental hazards** No.  
**14.6. Special precautions for user** Not assigned.

### IATA

**14.1. UN number** Not regulated as dangerous goods.  
**14.2. UN proper shipping name** Not regulated as dangerous goods.  
**14.3. Transport hazard class(es)**  
**Class** Not assigned.  
**Subsidiary risk** -  
**14.4. Packing group** -  
**14.5. Environmental hazards** No.  
**14.6. Special precautions for user** Not assigned.

### IMDG

**14.1. UN number** Not regulated as dangerous goods.  
**14.2. UN proper shipping name** Not regulated as dangerous goods.  
**14.3. Transport hazard class(es)**  
**Class** Not assigned.  
**Subsidiary risk** -  
**14.4. Packing group** -

#### 14.5. Environmental hazards

Marine pollutant No.

EmS Not assigned.

14.6. Special precautions for user Not assigned.

### SECTION 15: Regulatory information

#### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

##### EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**

Not listed.

**Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**

Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**

Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

Not listed.

##### Authorisations

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**

Not listed.

##### Restrictions on use

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use, as amended - Conditions of restriction given for the associated entry number should be considered**

Cobalt (CAS 7440-48-4)

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**

Cobalt (CAS 7440-48-4)

**Regulation 2019/1148 on Marketing and Use of Explosive Precursors, Annex I, as amended**

Not listed.

**Regulation 2019/1148 on Marketing and Use of Explosive Precursors, Annex II, as amended**

Not listed.

##### Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended.

##### National regulations

Follow national regulation for work with chemical agents.

According to Directive 92/85/EEC as amended, pregnant women should not work with the product, if there is the least risk of exposure.

Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work, as amended Use of this product by young persons under the age of 18 is not allowed in accordance with the Management of Health and Safety at Work Regulations 1999 [SI 1999/3242], as amended. Follow national regulation on the protection of workers from the risks of exposure to carcinogens and mutagens at work, in accordance with Directive 2004/37/EC, as amended.

##### France regulations

###### France INRS Table of Occupational Diseases

Iron (CAS 7439-89-6)

Affections consécutives à l'inhalation de poussières minérales ou de fumées, contenant des particules de fer ou d'oxydes de fer 44  
Affections consécutives au travail au fond dans les mines de fer 44 bis

## 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

## SECTION 16: Other information

### List of abbreviations

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.  
ADR: Agreement concerning the International Carriage of Dangerous Goods by Road.  
AGW: Occupational threshold limit value (Arbeitsplatzgrenzwert – Germany).  
CAS: Chemical Abstract Service.  
CEN: European Committee for Standardization.  
IATA: International Air Transport Association.  
IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk.  
IMDG: International Maritime Dangerous Goods.  
MAC: Maximum Allowed Concentration.  
MARPOL: International Convention for the Prevention of Pollution from Ships.  
PBT: Persistent, bioaccumulative and toxic.  
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.  
STEL: Short term exposure limit.  
TLV: Threshold Limit Value.  
TWA: Time Weighted Average.  
VLE: Exposure Limit Value.  
VME: Exposure Average Value.  
vPvB: Very persistent and very bioaccumulative.

### References

Not available.

### Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculator methods and test data, if available.

### Full text of any statements, which are not written out in full under sections 2 to 15

H302 Harmful if swallowed.  
H317 May cause an allergic skin reaction.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H350 May cause cancer.  
H361 Suspected of damaging fertility.

### Revision information

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

### Training information

Follow training instructions when handling this material.

### 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

### Disclaimer

To avoid any misunderstandings or incorrect assumptions by the receiver of the safety information, it should be made clear that the supplied information is not in the form of a Safety Data Sheet (SDS), but is actually a voluntary Product Information Sheet closely following the guidelines of the Safety Data Sheet – COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 (REACH/SDS).