

AMPERPRINT® 0037 CoCrMo

Version 3.4

SDS Number: 000010011460

Revision Date: 12/08/2020

SECTION 1. IDENTIFICATION

Trade name : AMPERPRINT® 0037 CoCrMo

Manufacturer or supplier's details**Company** : Höganäs Germany GmbH
Im Schleeke 78 - 91
38642 Goslar
Germany**Telephone** : +49(0)5321/751-0**Responsible Department** : Product Stewardship
E-mail address : SDS-info_de@hoganas.com
Emergency telephone number : Emergency CONTACT (24-Hour-Number) GBK/Infotrac ID 114067 :
(USA domestic) 1 800 535 5053 or international (001) 352 323 3500**Recommended use of the chemical and restrictions on use**

Recommended use : Metal-working Industry

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**Skin sensitisation : Category 1
Eye irritation : Category 2
Carcinogenicity : Category 1B
Respiratory sensitisation : Category 1
Acute toxicity : Category 4
Reproductive toxicity : Category 2
Long-term (chronic) aquatic hazard : Category 4**GHS label elements**

Hazard pictograms :



Signal word : Danger

Hazard statements : H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H350i May cause cancer by inhalation.
H302 Harmful if swallowed.
H361f Suspected of damaging fertility.

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H413 May cause long lasting harmful effects to aquatic life.
May form combustible dust concentrations in air.

Precautionary statements

: **Prevention:**

P201 Obtain special instructions before use.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P285 In case of inadequate ventilation wear respiratory protection.
P273 Avoid release to the environment.

Response:

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Storage:

P405 Store locked up.

Other hazards

The assessment of acute and chronic aquatic toxicity is based on transformation / dissolution tests (OECD29) and on short-term aquatic toxicity test results (OECD 201, 202, 203) of comparable materials.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture
Chemical nature : Alloy

Hazardous components

Chemical name	CAS-No.	Concentration (%)
Cobalt	7440-48-4	63 - 68
Chromium	7440-47-3	27 - 30
Molybdenum	7439-98-7	5 - 7

SECTION 4. FIRST AID MEASURES

If inhaled : Remove to fresh air.
If symptoms persist, call a physician.

In case of skin contact : Wash off with soap and water.
In the case of skin irritation or allergic reactions see a physician.

In case of eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Obtain medical attention.

Most important symptoms and effects, both acute and delayed : No information available.

Notes to physician : No information available.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Special powder against metal fire
Sand

Unsuitable extinguishing media : Water
Carbon dioxide (CO₂)

Specific hazards during fire- : No information available.

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- fighting
 Hazardous combustion products : Molybdenum trioxide
 Cobalt compounds
- Specific extinguishing methods : Prevent fire extinguishing water from contaminating surface water or the ground water system.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Effective exhaust ventilation system
 Avoid breathing dust.
 Avoid contact with skin, eyes and clothing.
 Use personal protective equipment.
 Avoid dust formation.
- Environmental precautions : Do not flush into surface water or sanitary sewer system.
- Methods and materials for containment and cleaning up : Use mechanical handling equipment.
 Avoid dust formation.
 Pick up and transfer to properly labelled containers.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid dust formation.
 Do not breathe dust.
 Avoid contact with the skin and the eyes.
 Provide sufficient air exchange and/or exhaust in work rooms.
 Avoid exceeding the given occupational exposure limits (see section 8).
- Conditions for safe storage : Store in accordance with the particular national regulations.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Cobalt	7440-48-4	TWA	0.02 mg/m ³	CA AB OEL
		TWA (Dust)	0.05 mg/m ³ (Cobalt)	NIOSH REL
		TWA (Fumes)	0.05 mg/m ³ (Cobalt)	NIOSH REL
		TWA (dust and fume)	0.1 mg/m ³ (Cobalt)	OSHA Z-1
		TWA (Dust and fume)	0.05 mg/m ³ (Cobalt)	OSHA P0
		TWA	0.02 mg/m ³ (Cobalt)	ACGIH
		TWAEV	0.02 mg/m ³ (Cobalt)	CA QC OEL
		TWA	0.02 mg/m ³ (Cobalt)	CA BC OEL
		VLE-PPT	0.02 mg/m ³ (Cobalt)	NOM-010-STPS-2014
		PEL (Fume and dust)	0.02 mg/m ³ (Cobalt)	CAL PEL
		TWA (Thoracic fraction)	0.005 mg/m ³ (Cobalt)	ACGIH

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Cobalt	7440-48-4	TWA (Dust)	0.05 mg/m ³ (Cobalt)	NIOSH REL
		TWA (Fumes)	0.05 mg/m ³ (Cobalt)	NIOSH REL
		TWA (dust and fume)	0.1 mg/m ³ (Cobalt)	OSHA Z-1
		TWA (Dust and fume)	0.05 mg/m ³ (Cobalt)	OSHA P0
		TWA	0.02 mg/m ³ (Cobalt)	ACGIH
		PEL (Fume and dust)	0.02 mg/m ³ (Cobalt)	CAL PEL
		TWA (Thoracic fraction)	0.005 mg/m ³ (Cobalt)	ACGIH
Chromium	7440-47-3	TWAEV	0.5 mg/m ³	CA QC OEL
		TWA	0.5 mg/m ³	CA AB OEL
		TWAEV	0.5 mg/m ³	CA QC OEL
		TWA	1 mg/m ³	OSHA P0
		TWA	0.5 mg/m ³	CA BC OEL
		LMPE-PPT	0.5 mg/m ³	MX OEL
		TWA	0.5 mg/m ³ (chromium)	OSHA Z-1
		TWA	1 mg/m ³ (chromium)	OSHA Z-1
		TWA	0.5 mg/m ³ (chromium)	ACGIH
		VLE-PPT	0.5 mg/m ³ (chromium)	NOM-010-STPS-2014
Chromium	7440-47-3	TWA	1 mg/m ³	OSHA P0
		TWA	0.5 mg/m ³ (chromium)	OSHA Z-1
		TWA	1 mg/m ³ (chromium)	OSHA Z-1
		TWA	0.5 mg/m ³ (chromium)	ACGIH
Molybdenum	7439-98-7	TWA (Total)	10 mg/m ³	CA AB OEL
		TWA (Respirable)	3 mg/m ³	CA AB OEL
		TWA (total dust)	15 mg/m ³ (Molybdenum)	OSHA Z-1
		TWA (Inhalable fraction)	10 mg/m ³ (Molybdenum)	ACGIH
		TWA (Respirable fraction)	3 mg/m ³ (Molybdenum)	ACGIH
		LMPE-PPT	10 mg/m ³ (Molybdenum)	MX OEL
		LMPE-CT	20 mg/m ³ (Molybdenum)	MX OEL
		TWAEV	10 mg/m ³ (Molybdenum)	CA QC OEL
		TWA (Inhalable)	10 mg/m ³ (Molybdenum)	CA BC OEL
		TWA (Respirable)	3 mg/m ³ (Molybdenum)	CA BC OEL
		TWA (Total dust)	10 mg/m ³ (Molybdenum)	OSHA P0
		VLE-PPT (Inhalable)	10 mg/m ³ (Molybdenum)	NOM-010-STPS-2014
		VLE-PPT (Respirable fraction)	3 mg/m ³ (Molybdenum)	NOM-010-STPS-2014
Molybdenum	7439-98-7	TWA (total)	15 mg/m ³	OSHA Z-1

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		dust)	(Molybdenum)	
		TWA (Inhalable fraction)	10 mg/m ³ (Molybdenum)	ACGIH
		TWA (Respirable fraction)	3 mg/m ³ (Molybdenum)	ACGIH
		TWA (Total dust)	10 mg/m ³ (Molybdenum)	OSHA P0

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Cobalt	7440-48-4	Cobalt	Urine	End of shift at end of workweek	15 µg/l	MX BEI
Cobalt		Cobalt	Blood	End of shift at end of workweek	1 µg/l	MX BEI
Cobalt		Cobalt	Urine	End of shift at end of workweek	15 µg/l	ACGIH BEI
Cobalt	7440-48-4	Cobalt	Urine	End of shift at end of workweek	15 µg/l	ACGIH BEI
Cobalt	7440-48-4	Cobalt	Urine	End of shift at end of workweek	15 µg/l	MX BEI
Cobalt		Cobalt	Blood	End of shift at end of workweek	1 µg/l	MX BEI
Cobalt		Cobalt	Urine	End of shift at end of workweek	15 µg/l	ACGIH BEI
Cobalt	7440-48-4	Cobalt	Urine	End of shift at end of workweek	15 µg/l	ACGIH BEI
Cobalt	7440-48-4	Cobalt	Urine	End of shift at end of workweek	15 µg/l	MX BEI
Cobalt		Cobalt	Blood	End of shift at end of workweek	1 µg/l	MX BEI
Cobalt		Cobalt	Urine	End of shift at end of workweek	15 µg/l	ACGIH BEI
Cobalt	7440-48-4	Cobalt	Urine	End of shift at end of workweek	15 µg/l	ACGIH BEI

Engineering measures : Dust must be extracted directly at the point of origin.

Personal protective equipment

Respiratory protection : Avoid breathing dust, vapors or mist.

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Hand protection	Work ambient concentrations should be monitored and if the recommended exposure limit is exceeded, a NIOSH/MSHA approved respirator should be worn.
Material	: Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374.
Remarks	: The data about break through time/strength of material is not valid for undissolved solids/dust.
Eye protection	: Safety glasses
Skin and body protection	: Protective suit
Hygiene measures	: Handle in accordance with good industrial hygiene and safety practice. Keep working clothes separately.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: powdered form
Colour	: grey
Odour	: odourless
pH	: No data available
Melting point/range	: 1,200 - 1,550 °C
Boiling point/boiling range	: No data available
Flash point	: Not applicable
Evaporation rate	: Not applicable
Flammability (solid, gas)	: negative
Burning number	: 1
	Method: VDI 2263 Information given is based on data obtained from similar substances.
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapour pressure	: Not applicable
Relative vapour density	: Not applicable
Bulk density	: 3,000 - 4,000 kg/m ³
Solubility(ies)	
Water solubility	: No data available
Partition coefficient: n-octanol/water	: Not applicable
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: Not applicable
Viscosity, kinematic	: Not applicable
Explosive properties	: Not explosive

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Oxidizing properties : The substance or mixture is not classified as oxidizing.

Dust explosion class : No data available

Auto-ignition temperature : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No hazards to be specially mentioned.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : None known.

Conditions to avoid : Stable under normal conditions.
Avoid dust formation.

Incompatible materials : Incompatible with acids and bases.

Hazardous decomposition products : This product may release the following:
Cobalt compounds
Chromium oxides

SECTION 11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure****Acute toxicity****Product:**

Acute oral toxicity : Remarks: No data available

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Remarks: No data available

Components:**Cobalt:**

Acute oral toxicity : LD50 (Rat, female): ca. 550 mg/kg
Method: OECD Test Guideline 425
GLP: No data available

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : LD50 Dermal (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
Test substance: Read across
GLP: No data available
Remarks: Weight of Evidence

Chromium:

Acute oral toxicity : Remarks: No data available

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Remarks: No data available

Molybdenum:

Acute oral toxicity : Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Remarks: No data available

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Skin corrosion/irritation**Product:**

Remarks: No data available

Components:**Cobalt:**

Exposure time: 0.25 h

Method: OECD Test Guideline 439

Result: No skin irritation

GLP: No data available

Remarks: in vitro assay

Chromium:

Remarks: No data available

Molybdenum:

Remarks: No data available

Serious eye damage/eye irritation**Product:**

Remarks: No data available

Components:**Cobalt:**

Species: Bovine cornea

Result: Mild eye irritation

Method: OECD Test Guideline 437

GLP: No data available

Remarks: in vitro assay

Species: Rabbit

Result: Severe eye irritation

Method: OECD Test Guideline 405

GLP: No data available

Chromium:

Remarks: No data available

Molybdenum:

Remarks: No data available

Respiratory or skin sensitisation**Product:**

Remarks: No data available

Components:**Cobalt:**

Test Type: Maximisation Test

Species: Guinea pig

Method: No information available.

Result: Skin sensitisation

GLP: no

Test substance: CoCl₂*6H₂O (CAS-No. 7791-13-1)

Method: Evaluation of human information

Result: Skin sensitisation

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Method: Evaluation of human information
Result: Respiratory sensitisation

Chromium:

Remarks: No data available

Molybdenum:

Remarks: No data available

Germ cell mutagenicity**Product:**

Genotoxicity in vitro : Remarks: No data available

Components:**Cobalt:**

Genotoxicity in vitro : Test Type: Ames test
Test species: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: No information available.

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Test species: Mouse (male and female)
Strain: B6C3F1
Application Route: Inhalation
Method: OECD Test Guideline 474
Result: negative
GLP: No information available.

Chromium:

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Remarks: No data available

Molybdenum:

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Remarks: No data available

Carcinogenicity**Components:****Cobalt:**

Species: Rat, (male and female)
Application Route: Inhalation
Exposure time: two-year
Method: OECD Test Guideline 451
Result: positive
Target Organs: Lungs
GLP: No information available.

Species: Mouse, (male and female)
Application Route: Inhalation
Exposure time: two-year
Method: OECD Test Guideline 451
Result: positive
Target Organs: Lungs
GLP: No information available.

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Chromium:

Remarks: No data available

Molybdenum:

Remarks: No data available

IARC

Group 2A: Probably carcinogenic to humans

Cobalt

7440-48-4

Group 2B: Possibly carcinogenic to humans

ACGIH

Confirmed animal carcinogen with unknown relevance to humans

Cobalt

7440-48-4

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity**Components:****Cobalt:**

Effects on fertility

: Remarks: No data available

Species: Rat
 Sex: male and female
 Exposure time: 28-day
 Application Route: Oral
 NOAEL: 30 mg/kg,
 F1: 30 mg/kg,
 Method: OECD Test Guideline 422
 GLP: No information available.

Effects on foetal development

: Remarks: No data available
Remarks: No data available**Chromium:**

Effects on fertility

:

Remarks: No data available

Effects on foetal development

: Remarks: No data available

STOT - single exposure**Product:**

Assessment: No data available

Components:**Cobalt:**

Remarks: No data available

Chromium:

Remarks: No data available

Molybdenum:

Remarks: No data available

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STOT - repeated exposure**Product:**

Assessment: No data available

Components:**Cobalt:**

Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Chromium:

Remarks: No data available

Molybdenum:

Remarks: No data available

Repeated dose toxicity**Product:**

Remarks: No data available

Components:**Cobalt:**

Species: Rat, male and female

NOAEL: 30 mg/kg

Application Route: Oral

Exposure time: 28-day

Method: OECD Test Guideline 422

GLP: No information available.

Chromium:

Remarks: No data available

Molybdenum:

Remarks: No data available

Further information**Product:**

Remarks: No data available

Components:**Cobalt:**

Remarks: None known.

Chromium:

Remarks: None known.

Molybdenum:

Remarks: None known.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:**

Toxicity to fish

: EC50 (Danio rerio (zebra fish)): > 100 mg/l
Exposure time: 96 h

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	Method: OECD Test Guideline 203 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna Straus): > 100 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae	: EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l End point: Growth rate Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
Toxicity to fish (Chronic toxicity)	: Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: Remarks: No data available
Toxicity to bacteria	: Remarks: No data available
Ecotoxicology Assessment Acute aquatic toxicity	: Not Rated
Chronic aquatic toxicity	: May cause long lasting harmful effects to aquatic life.
<u>Components:</u>	
Cobalt:	
Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 1.512 mg/l Exposure time: 96 h Test Type: flow-through test Test substance: cobalt dichloride (Read across) Method: ASTM Directive GLP: No data available Remarks: Fresh water
	LOEC (Oncorhynchus tshawytscha): <= 0.024 mg/l Exposure time: 0.5 h Test Type: flow-through test Test substance: cobalt dichloride (Read across) Method: No data available GLP: No data available Remarks: Fresh water
Toxicity to daphnia and other aquatic invertebrates	: LC50 (Ceriodaphnia dubia (water flea)): 0.61 mg/l Exposure time: 48 h Test Type: static test Test substance: cobalt dichloride (Read across) Method: USEPA 2002 GLP: no Remarks: Fresh water
	EC50 (Dendroaster excentricus): 2.3 mg/l Exposure time: 72 h Test Type: static test Test substance: cobalt dichloride (Read across) Method: ASTM Directive GLP: yes Remarks: Marine water
Toxicity to algae	: EC50 (Pseudokirchneriella subcapitata (green algae)): 0.144 mg/l Exposure time: 72 h Test Type: static test Test substance: cobalt dichloride (Read across)

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Method: OECD Test Guideline 201

GLP: No data available

Remarks: Fresh water

EC10 (Lemna minor (duckweed)): 0.005 mg/l

Exposure time: 168 h

Test Type: static test

Test substance: cobalt dichloride (Read across)

Method: OECD Test Guideline 221

GLP: No data available

Remarks: Fresh water

EC50 (Champia parvula): 0.024 mg/l

Exposure time: 168 h

Test Type: static test

Test substance: cobalt dichloride (Read across)

Method: EPA 821-R-02-014, Method 1009.0

GLP: No data available

Remarks: Marine water

EC10 (Champia parvula): 0.001 mg/l

Exposure time: 168 h

Test Type: static test

Test substance: cobalt dichloride (Read across)

Method: EPA 821-R-02-014, Method 1009.0

GLP: No data available

Remarks: Marine water

M-Factor (Acute aquatic toxicity) : 1

Toxicity to fish (Chronic toxicity) :

EC10 (Pimephales promelas (fathead minnow)): 0.35 mg/l

Exposure time: 34 d

Test Type: flow-through test

Test substance: cobalt dichloride (Read across)

Method: OECD Test Guideline 210

GLP: no

Remarks: Fresh water

EC10 (Cyprinodon variegatus (sheepshead minnow)): 31.8 mg/l

Exposure time: 28 d

Test Type: flow-through test

Test substance: cobalt dichloride (Read across)

Method: OECD Test Guideline 210

GLP: no

Remarks: Marine water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) :

EC10 (Hyalella azteca): 0.0055 mg/l

Exposure time: 28 d

Test Type: semi-static test

Test substance: cobalt dichloride (Read across)

Method: OECD Test Guideline 211

GLP: No data available

Remarks: Fresh water

EC10 (Neanthes arenaceodentata): 0.21 mg/l

Exposure time: 113 d

Test Type: flow-through test

Test substance: cobalt dichloride (Read across)

Method: ASTM E 1562

GLP: yes

Remarks: Marine water

M-Factor (Chronic aquatic toxicity) : 10

Toxicity to bacteria :

EC10 (activated sludge): 3.73 mg/l

Exposure time: 0.5 h

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	<p>Test Type: Growth inhibition Test substance: cobalt dichloride (Read across) Method: OECD Test Guideline 209 GLP: No data available Remarks: Information refers to the main component. Fresh water static test</p> <p>EC50 (activated sludge): 120 mg/l Exposure time: 0.5 h Test Type: Growth inhibition Test substance: cobalt dichloride (Read across) Method: OECD Test Guideline 209 GLP: No data available Remarks: Information refers to the main component. Fresh water static test</p>
Toxicity to soil dwelling organisms	<p>: EC10 (<i>Hyaella azteca</i>): 86 mg/kg Exposure time: 42 d End point: Growth rate Test substance: cobalt dichloride (Read across) Method: OECD Test Guideline GLP: No data available Remarks: Fresh water sediment</p> <p>EC50 (<i>Hyaella azteca</i>): 146 mg/kg Exposure time: 42 d End point: reproduction rate Test substance: cobalt dichloride (Read across) Method: OECD Test Guideline GLP: No data available Remarks: Fresh water sediment</p> <p>EC10 (<i>Enchytraeus albidus</i>): 52 mg/kg Exposure time: 42 d End point: reproduction rate Test substance: cobalt dichloride (Read across) Method: ISO 11268-2 GLP: No data available</p> <p>EC10 (<i>Folsomia candida</i>): 14 mg/kg Exposure time: 28 d End point: reproduction rate Test substance: cobalt dichloride (Read across) Method: ISO 11267 GLP: No data available</p>
Plant toxicity	<p>: EC10 (<i>Medicago sativa</i>): 2.9 mg/kg End point: Growth inhibition Test substance: cobalt dichloride (Read across) Method: ASTM E 1963-98 GLP: No data available</p>
Toxicity to terrestrial organisms	<p>: NOEC (<i>Gallus domesticus</i>): 50 mg/kg Exposure time: 21 d End point: change in weight Test substance: No data available Method: No data available GLP: No data available Remarks: Weight of Evidence</p>
Chromium: Toxicity to fish	<p>: Remarks: No data available</p>

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Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Toxicity to algae : Remarks: No data available

Toxicity to fish (Chronic toxicity) : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: No data available

Toxicity to bacteria : Remarks: No data available

Toxicity to soil dwelling organisms : Remarks: No data available

Plant toxicity : Remarks: No data available

Toxicity to terrestrial organisms : Remarks: No data available

Molybdenum:

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Toxicity to algae : Remarks: No data available

Toxicity to fish (Chronic toxicity) : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: No data available

Toxicity to bacteria : Remarks: No data available

Toxicity to soil dwelling organisms : Remarks: No data available

Plant toxicity : Remarks: No data available

Toxicity to terrestrial organisms : Remarks: No data available

Persistence and degradability**Product:**

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

Components:**Cobalt:**

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

Stability in water : Remarks: No data available

Chromium:

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

Stability in water : Remarks: No data available

Molybdenum:

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

Stability in water : Remarks: No data available

Bioaccumulative potential**Product:**

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Bioaccumulation : Remarks: This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).

Components:
Cobalt:

Bioaccumulation : Remarks: No data available

Partition coefficient: n-octanol/water : Remarks: Not applicable

Chromium:

Bioaccumulation : Remarks: This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

Partition coefficient: n-octanol/water : Remarks: Not applicable

Molybdenum:

Bioaccumulation : Remarks: This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

Partition coefficient: n-octanol/water : Remarks: Not applicable

Mobility in soil
Product:

Mobility : Remarks: No data available

Components:
Cobalt:

Mobility : Remarks: No data available

Chromium:

Mobility : Remarks: No data available

Molybdenum:

Mobility : Remarks: No data available

Other adverse effects
Product:

Regulation 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

Components:
Cobalt:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

Remarks No data available

Additional ecological information : Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

Chromium:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

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Remarks : No data available

Additional ecological information : None known.

Molybdenum:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

Remarks : No data available

Additional ecological information : None known.

SECTION 13. DISPOSAL CONSIDERATIONS
Disposal methods

Waste from residues : Disposal should be in accordance with applicable state, federal and local laws and regulations. Local regulations may be more stringent than state or federal requirements.

SECTION 14. TRANSPORT INFORMATION
International Regulations**IATA-DGR**

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations**49 CFR**

Not regulated as a dangerous good

TDG

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION
TSCA list**TSCA - 5(a) Significant New Use Rule List of Chemicals** : No substances are subject to a Significant New Use Rule.**US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)** : No substances are subject to TSCA 12(b) export notification requirements.**WHMIS Classification** : Not controlled.**EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Chromium	7440-47-3	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

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SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards

: Respiratory or skin sensitisation
 Serious eye damage or eye irritation
 Reproductive toxicity
 Acute toxicity (any route of exposure)
 Carcinogenicity

SARA 302

: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313

: The following components are subject to reporting levels established by SARA Title III, Section 313:

Cobalt	7440-48-4	65.5 %
Chromium	7440-47-3	28.5 %

Clean Air Act

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

Cobalt	7440-48-4	65.5 %
Chromium	7440-47-3	28.5 %

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCOMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

Chromium	7440-47-3	28.5 %
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US State Regulations
Massachusetts Right To Know

Cobalt	7440-48-4	50 - 70 %
Chromium	7440-47-3	20 - 30 %
Molybdenum	7439-98-7	5 - 10 %

Pennsylvania Right To Know

Cobalt	7440-48-4	50 - 70 %
Chromium	7440-47-3	20 - 30 %
Molybdenum	7439-98-7	5 - 10 %

New Jersey Right To Know

Cobalt	7440-48-4	50 - 70 %
Chromium	7440-47-3	20 - 30 %
Molybdenum	7439-98-7	5 - 10 %

California Prop 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

Cobalt	7440-48-4
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The components of this product are reported in the following inventories:

REACH : On the inventory, or in compliance with the inventory

CH INV : On the inventory, or in compliance with the inventory

TSCA : On TSCA Inventory

DSL : All components of this product are on the Canadian DSL

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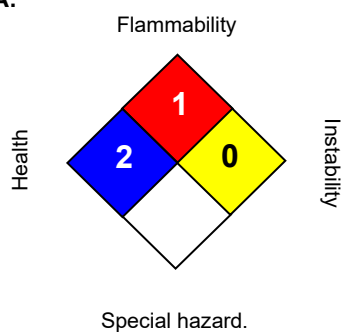
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AICS	: On the inventory, or in compliance with the inventory
ENCS	: Not in compliance with the inventory
	: Cobalt
	: Chromium
	: Molybdenum
ISHL	: Not in compliance with the inventory
	: Cobalt
	: Chromium
	: Molybdenum
KECI	: On the inventory, or in compliance with the inventory
PICCS	: On the inventory, or in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

SECTION 16. OTHER INFORMATION**Further information****NFPA:****HMIS III:**

HEALTH	2*
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.