



SAFETY DATA SHEET

MATERION

Version #: 07

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Supersedes date: 17-October-2019

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

Registration number	-
Synonyms	CHROMIUM - METAL
Materion Code	1FX
1.1. Product identifier	
Name of the substance	Chromium
Identification number	231-157-5 (EC number)
1.2. Relevant identified uses of the substance or mixture and uses advised against	
Identified uses	Not available.
Uses advised against	None known.
1.3. Details of the supplier of the safety data sheet	
Supplier	
Company name	Materion Electronic Materials
Address	6070 Parkland Blvd Mayfield Heights, OH 44124 United States
Division	
Telephone	1.216.383.4019
e-mail	Materion-PS@materion.com
Contact person	Product Stewardship Director
1.4. Emergency telephone number	
Document number	1FX

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The substance 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 2 H300 - Fatal if swallowed.

Environmental hazards

Hazardous to the aquatic environment, acute aquatic hazard Category 1 M-Factor = 100.

Hazardous to the aquatic environment, long-term aquatic hazard Category 1 M-Factor = 100.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Chromium

Hazard pictograms



Signal word Danger

Hazard statements

H228 Flammable solid.
H300 Fatal if swallowed.

Precautionary statements

Prevention

P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/ equipment.

Response

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTRE/doctor.
P330 Rinse mouth.
P391 Collect spillage.

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.

Supplemental label information

For further information, please contact the Product Stewardship Department at +1.800.862.4118.

2.3. Other hazards

This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII. The substance is not included in the list established in accordance with REACH Article 59(1) for having endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Chromium	100	7440-47-3 231-157-5	-	-	#
Classification: Flam. Sol. 2;H228, Acute Tox. 2;H300;(ATE: 46 mg/kg bw)					

List of abbreviations and symbols that may be used above

DSD: Directive 67/548/EEC.
CLP: Regulation No. 1272/2008.
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. *Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

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

SECTION 4: First aid measures

General information

If exposed or concerned: Get medical advice/attention. 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.

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

Wash off with soap and water. If skin irritation or rash occurs: Get medical advice/attention. For minor skin contact, avoid spreading material on unaffected skin.

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion

Call a physician or poison control centre immediately. Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

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

May cause allergic skin reaction. May cause allergic respiratory reaction. Irritation of eyes and mucous membranes.

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

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media

None known.

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

Wear suitable protective equipment.

Special firefighting procedures

Use water spray to cool unopened containers. Water runoff can cause environmental damage.

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

For non-emergency personnel

Wear appropriate personal protective equipment.

For emergency responders

Keep unnecessary personnel away. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

6.2. Environmental precautions

Avoid release to the environment. Refer to special instructions/safety data sheets. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Collect spillage. The product is immiscible with water and will spread on the water surface. Prevent entry into waterways, sewer, basements or confined areas.

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. The product is insoluble in water.

6.4. Reference to other sections

For personal protection, see section 8 of the SDS. For waste disposal, see section 13.

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 prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains. Use appropriate container to avoid environmental contamination. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Store in a cool, dry place out of direct sunlight. Use appropriate container to avoid environmental contamination. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

ANNEX 1, PART 1 Categories of dangerous substances

Hazard categories in accordance with Regulation (EC) No 1272/2008

- H2 ACUTE TOXIC (Lower-tier requirements = 50 tonnes; Upper-tier requirements = 200 tonnes)

- E1 Hazardous to the Aquatic Environment Acute (Lower-tier requirements = 100 tonnes; Upper-tier requirements = 200 tonnes)

- E1 Hazardous to the Aquatic Environment Chronic (Lower-tier requirements = 100 tonnes; Upper-tier requirements = 200 tonnes)

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. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001, as amended

Material	Type	Value
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Chromium (CAS 7440-47-3)	MAK	2 mg/m3
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Belgium. OEL. Exposure Limit Values to Chemical Substances at Work, Code of Well-being at work, Book VI, Title 1 - Chemical agents, as amended

Material	Type	Value
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Chromium (CAS 7440-47-3)	TWA	0,5 mg/m3
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Bulgaria. OELs. Ordinance No 13 on protection of workers against risks of exposure to chemical agents at work, as amended

Material	Type	Value
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Chromium (CAS 7440-47-3)	TWA	2 mg/m3
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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

Material	Type	Value
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Chromium (CAS 7440-47-3)	MAC	2 mg/m3
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Cyprus. OELs. Occupational Exposure Limit Values of Chemicals at Work (Safety and Health at Work (Chem. Agents) Reg., Ann. 1, R.A.A. 268/2001, as amended)

Material	Type	Value
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Chromium (CAS 7440-47-3)	TWA	2 mg/m3
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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)

Material	Type	Value	Form
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Chromium (CAS 7440-47-3)	Ceiling	1,5 mg/m3	Aerosol, inhalable.
	TWA	0,5 mg/m3	Dust.
		0,5 mg/m3	Aerosol, inhalable.

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

Material	Type	Value	Form
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Chromium (CAS 7440-47-3)	TLV	0,5 mg/m3	Dust.
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Estonia. OELs. Occupational Exposure Limits of Hazardous Substances (Regulation No. 105/2001, Annex), as amended

Material	Type	Value
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Chromium (CAS 7440-47-3)	TWA	2 mg/m3
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Finland. HTP-arvot, App 3., Binding Limit Values, Social Affairs and Ministry of Health

Material	Type	Value
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Chromium (CAS 7440-47-3)	TWA	0,5 mg/m3
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France. OELs. Indicative Occupational Exposure Limits as Prescribed by Order of 30 June 2004, as amended

Material	Type	Value
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Chromium (CAS 7440-47-3)	VME	2 mg/m3
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Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

Material	Type	Value	Form
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Chromium (CAS 7440-47-3)	AGW	2 mg/m3	Inhalable fraction.
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Greece. OELs, Presidential Decree No. 307/1986, as amended

Material	Type	Value
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Chromium (CAS 7440-47-3)	TWA	1 mg/m3
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Hungary. OELs. Decree on protection of workers exposed to chemical agents (5/2020. (II.6)), Annex 1&2, as amended

Material	Type	Value
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Chromium (CAS 7440-47-3)	TWA	2 mg/m3
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Iceland. OELs. Regulation 390/2009 on Pollution Limits and Measures to Reduce Pollution at the Workplace, as amended

Material	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m3	Dust.

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

Material	Type	Value
Chromium (CAS 7440-47-3)	TWA	2 mg/m3

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

Material	Type	Value
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m3

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

Material	Type	Value
Chromium (CAS 7440-47-3)	TWA	2 mg/m3

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

Material	Type	Value
Chromium (CAS 7440-47-3)	TWA	2 mg/m3

Luxembourg. OELs. Binding Occupational Exposure Limit Values (Annex I), G.D.R. of 14 November 2016, OJ Memorial A, n ° 235/2016, as amended

Material	Type	Value
Chromium (CAS 7440-47-3)	TWA	2 mg/m3

Malta. OELs. Protection of Health and Safety of Workers from Risks related to Chemical Agents at Work (L.N 227/2003 Schedules I and V), as amended

Material	Type	Value
Chromium (CAS 7440-47-3)	TWA	2 mg/m3

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

Material	Type	Value
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m3

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

Material	Type	Value
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m3

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

Material	Type	Value
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m3

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

Material	Type	Value
Chromium (CAS 7440-47-3)	TWA	2 mg/m3

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

Material	Type	Value
Chromium (CAS 7440-47-3)	TWA	2 mg/m3

Slovenia. OELs. Occupational Exposure Limits of Chemicals at Workplace (Reg. on Protection of Workers from Risks due to Exp. to Chemicals at Work, Ann. I 100/2001), as amended

Material	Type	Value	Form
Chromium (CAS 7440-47-3)	KTV	2 mg/m3	Inhalable fraction.

Slovenia. OELs. Occupational Exposure Limits of Chemicals at Workplace (Reg. on Protection of Workers from Risks due to Exp. to Chemicals at Work, Annex I), as amended

Material	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	2 mg/m ³	Inhalable fraction.

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

Material	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m ³	Total dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz: Aktuelle MAK-Werte

Material	Type	Value	Form
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m ³	Inhalable fraction.

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

Material	Type	Value
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m ³

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU

Material	Type	Value
Chromium (CAS 7440-47-3)	TWA	2 mg/m ³

Biological limit values

Czech Republic. BELs. Government Decree 432/2003 Sb., as amended

Material	Value	Determinant	Specimen	Sampling Time
Chromium (CAS 7440-47-3)	0,065 µmol/mmol	Total chromium	Creatinine in urine	*
	0,03 mg/g	Total chromium	Creatinine in urine	*

* - 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

Material	Value	Determinant	Specimen	Sampling Time
Chromium (CAS 7440-47-3)	0,022 µmol/mmol	chromium	Creatinine in urine	*
	0,01 mg/g	chromium	Creatinine in urine	*

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

UK. BELs. Biological Monitoring Guidance Values (BMGVs) (EH40/2005 (Fourth Edition 2020)), Table 2

Material	Value	Determinant	Specimen	Sampling Time
Chromium (CAS 7440-47-3)	10 µmol/mol	Chromium	Creatinine in 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.

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. Provide eyewash station.

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 Wear safety glasses with side shields (or goggles). Face shield is recommended.

Skin protection	
- Hand protection	Wear appropriate chemical resistant gloves.
- Other	Wear appropriate chemical resistant clothing. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
Respiratory protection	Wear positive pressure self-contained breathing apparatus (SCBA).
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
Hygiene measures	Do not get in eyes. 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	Contain spills and prevent releases and observe national regulations on emissions. Inform appropriate managerial or supervisory personnel of all environmental releases. 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	Not available.
Melting point/freezing point	1900 °C (3452 °F)
Boiling point or initial boiling point and boiling range	2642 °C (4787,6 °F)
Flammability	Not available.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit – upper (%)	Not available.
Flash point	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
pH	>7
Kinematic viscosity	Not available.
Solubility	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water) (log value)	Not available.
Vapour pressure	<0,0000001 kPa (25 °C (77 °F))
Density and/or relative density	
Density	7,14 g/cm3 estimated at 20 °C
Vapour density	Not available.
Particle characteristics	Not available.

9.2. Other information

9.2.1. Information with regard to physical hazard classes	No relevant additional information available.
9.2.2. Other safety characteristics	
Molecular formula	Cr
Molecular weight	52 g/mol
Specific gravity	7,14 at 20 °C

SECTION 10: Stability and reactivity

10.1. Reactivity	Not available.
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10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.
10.5. Incompatible materials	Strong oxidising agents.
10.6. Hazardous decomposition products	No hazardous decomposition products are known.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. 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	Fatal if swallowed.

Symptoms Exposure may cause temporary irritation, redness, or discomfort.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity Fatal if swallowed. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May cause allergic skin reaction.

Product	Species	Test Results
Chromium (CAS 7440-47-3)		
<u>Acute</u>		
Oral		
LD50	Rat	46 - 113 mg/kg
Skin corrosion/irritation	Due to partial or complete lack of data the classification is not possible.	
Serious eye damage/eye irritation	Causes eye irritation.	
Respiratory sensitisation	May cause allergy or asthma symptoms or breathing difficulties if inhaled.	
Skin sensitisation	May cause an allergic skin reaction.	
Germ cell mutagenicity	Suspected of causing genetic defects.	
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.	

IARC Monographs. Overall Evaluation of Carcinogenicity

Chromium (CAS 7440-47-3) 3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - single exposure	May cause damage to organs (). Respiratory tract irritation.
Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.
Aspiration hazard	Due to partial or complete lack of data the classification is not possible.
Mixture versus substance information	No information available.

11.2. Information on other hazards

Endocrine disrupting properties	This substance does not have endocrine disrupting properties with respect to human health, as it does not meet the assessment criteria laid out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity Very toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

Product	Species		Test Results
Chromium (CAS 7440-47-3)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	0,01 - 0,7 mg/l, 48 hours
Fish	LC50	American eel (Anguilla rostrata)	13,9 mg/l, 96 hours
12.2. Persistence and degradability	No data is available on the degradability of this product.		
12.3. Bioaccumulative potential	No data available.		
Partition coefficient n-octanol/water (log Kow)	Not available.		
Bioconcentration factor (BCF)	Not available.		
12.4. Mobility in soil	No data available.		
12.5. Results of PBT and vPvB assessment	This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII.		
12.6. Endocrine disrupting properties	This substance does not have endocrine disrupting properties with respect to the environment, as it does not meet the assessment criteria laid out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605.		
12.7. 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.		
12.8. Additional information			
Estonia Dangerous substances in soil Data			
Chromium (CAS 7440-47-3)		Chromium (Cr) 100 mg/kg	
		Chromium (Cr) 300 mg/kg	
		Chromium (Cr) 800 mg/kg	

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	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). Avoid discharge into water courses or onto the ground.
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.
EU waste code	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. This material and its container must be disposed of as hazardous waste. Do not discharge into drains, water courses or onto the ground. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. After recovery of solvent dispose of residue as hazardous waste. 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	UN3288
14.2. UN proper shipping name	TOXIC SOLID, INORGANIC, N.O.S. (Chromium)
14.3. Transport hazard class(es)	
Class	6.1
Subsidiary risk	-
Label(s)	6.1
Hazard No. (ADR)	60
Tunnel restriction code	D/E
14.4. Packing group	II
14.5. Environmental hazards	Yes
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

RID

14.1. UN number	UN3288
14.2. UN proper shipping name	TOXIC SOLID, INORGANIC, N.O.S. (Chromium)
14.3. Transport hazard class(es)	
Class	6.1
Subsidiary risk	-
Label(s)	6.1
14.4. Packing group	II
14.5. Environmental hazards	Yes
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

ADN

14.1. UN number	UN3288
14.2. UN proper shipping name	TOXIC SOLID, INORGANIC, N.O.S. (Chromium)
14.3. Transport hazard class(es)	
Class	6.1
Subsidiary risk	-
Label(s)	6.1
14.4. Packing group	II
14.5. Environmental hazards	Yes
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

14.1. UN number	UN3089
14.2. UN proper shipping name	Metal powder, flammable, n.o.s. (Chromium)
14.3. Transport hazard class(es)	
Class	4.1
Subsidiary risk	-
14.4. Packing group	III
14.5. Environmental hazards	No.
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

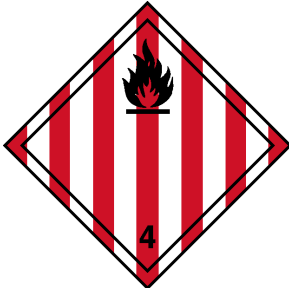
IMDG

14.1. UN number	UN3089
14.2. UN proper shipping name	Metal powder, flammable, n.o.s. (Chromium)
14.3. Transport hazard class(es)	
Class	4.1
Subsidiary risk	-
14.4. Packing group	III
14.5. Environmental hazards	
Marine pollutant	No.
EmS	Not assigned.
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

ADN; ADR; RID



IATA; IMDG



Marine pollutant



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

Chromium (CAS 7440-47-3)

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

Not listed.

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

Not listed.

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 EU regulations Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

ANNEX 1, PART 1 Categories of dangerous substances
Hazard categories in accordance with Regulation (EC) No 1272/2008
- H2 ACUTE TOXIC
- E1 Hazardous to the Aquatic Environment Acute
- E1 Hazardous to the Aquatic Environment Chronic

Other regulations The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations 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 for work with chemical agents in accordance with Directive 98/24/EC, as amended.

France regulations

France INRS Table of Occupational Diseases

Not regulated.

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

ACGIH
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents

Information on evaluation method leading to the classification of mixture Not applicable.

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

H228 Flammable solid.
H300 Fatal if swallowed.

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
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