



PRODUCT INFORMATION SHEET

MATERION

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

1.1. Product identifier

Name of the substance Chromium
Identification number 231-157-5 (EC number)
Registration number -
Document number 061
Synonyms None.
Issue date 27-May-2015
Revision date 14-May-2019
Supersedes date 15-February-2019
Version number 04

1.3. Details of the supplier of the product information sheet

Supplier

Company name Materion Advanced Materials Group
Address 42 Mt. Ebo Road South
Brewster, NY 10509
United States

Division

Telephone 1+845.279.0900
e-mail Not available.
Contact person Not available.

1.4. Emergency telephone number Chemtrec 1+703.527.3887

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

Identified uses Not available.
Uses advised against None known.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Environmental hazards

Hazardous to the aquatic environment, acute aquatic hazard Category 1 M-factor = 100. H400 - Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term aquatic hazard Category 1 M-factor = 100. H410 - Very toxic to aquatic life with long lasting effects.

Hazard summary Not available.

2.2. Label elements

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

Contains: Chromium

Hazard pictograms



Signal word Warning

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.

H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

P273 Avoid release to the environment.

Response

P391 Collect spillage.

Storage

Not available.

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information

% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment.

2.3. Other hazards

None known.

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 - 100	7440-47-3 231-157-5	-	-	#
Classification:	Aquatic Chronic 3;H412				

SECTION 4: First aid measures

General information Not available.

4.1. Description of first aid measures

Inhalation Not available.

Skin contact Not available.

Eye contact Not available.

Ingestion Not available.

4.2. Most important symptoms and effects, both acute and delayed Not available.

4.3. Indication of any immediate medical attention and special treatment needed Not available.

SECTION 5: Firefighting measures

General fire hazards Not available.

5.1. Extinguishing media

Suitable extinguishing media Not available.

Unsuitable extinguishing media Not available.

5.2. Special hazards arising from the substance or mixture Not available.

5.3. Advice for firefighters

Special protective equipment for firefighters Not available.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Not available.

For emergency responders Not available.

6.2. Environmental precautions Not available.

6.3. Methods and material for containment and cleaning up Not available.

6.4. Reference to other sections Not available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Not available.

7.2. Conditions for safe storage, including any incompatibilities Not available.

7.3. Specific end use(s) Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

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

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

Belgium. Exposure Limit Values.

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

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

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

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

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

Czech Republic. OELs. Government Decree 361

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

Denmark. Exposure Limit Values

Material	Type	Value	Form
Chromium	TLV	0,5 mg/m ³	Dust.
Components	Type	Value	Form
Chromium (CAS 7440-47-3)	TLV	0,5 mg/m ³	Dust.

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Material	Type	Value
Chromium	TWA	2 mg/m ³
Components	Type	Value

Chromium (CAS 7440-47-3)	TWA	2 mg/m ³
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Finland. Workplace Exposure Limits

Material	Type	Value
Chromium	TWA	0,5 mg/m ³
Components	Type	Value

Chromium (CAS 7440-47-3)	TWA	0,5 mg/m ³
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France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Material	Type	Value
Chromium	VME	2 mg/m ³
Regulatory status:	Regulatory indicative (VRI)	
Components	Type	Value

Chromium (CAS 7440-47-3)	VME	2 mg/m ³
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Regulatory status: Regulatory indicative (VRI)

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

Material	Type	Value	Form
Chromium	AGW	2 mg/m ³	Inhalable fraction.
Components	Type	Value	Form

Chromium (CAS 7440-47-3)	AGW	2 mg/m ³	Inhalable fraction.
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Greece. OELs (Decree No. 90/1999, as amended)

Material	Type	Value
Chromium	TWA	1 mg/m ³
Components	Type	Value

Chromium (CAS 7440-47-3)	TWA	1 mg/m ³
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Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Material	Type	Value
Chromium	TWA	2 mg/m ³
Components	Type	Value

Chromium (CAS 7440-47-3)	TWA	2 mg/m ³
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Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Material	Type	Value	Form
Chromium	TWA	0,5 mg/m ³	Dust.
Components	Type	Value	Form

Chromium (CAS 7440-47-3)	TWA	0,5 mg/m ³	Dust.
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Ireland. Occupational Exposure Limits

Material	Type	Value
Chromium	TWA	2 mg/m ³
Components	Type	Value

Chromium (CAS 7440-47-3)	TWA	2 mg/m ³
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Italy. Occupational Exposure Limits

Material	Type	Value
Chromium	TWA	0,5 mg/m ³
Components	Type	Value

Chromium (CAS 7440-47-3)	TWA	0,5 mg/m ³
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Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

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

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements

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

Luxembourg. Binding Occupational exposure limit values (Annex I), Memorial A

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

Netherlands. OELs (binding)

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

Norway. Administrative Norms for Contaminants in the Workplace

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

Ordinance of the Minister of Labour and Social Policy on 6 June 2014 on the maximum permissible concentrations and intensities of harmful health factors in the work environment, Journal of Laws 2014, item 817

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

Portugal. OELs. Decree-Law n. 290/2001 (Journal of the Republic - 1 Series A, n.266)

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

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

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

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

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

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Material	Type	Value
Chromium	TWA	2 mg/m ³
Components	Type	Value

Chromium (CAS 7440-47-3)	TWA	2 mg/m ³
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Spain. Occupational Exposure Limits

Material	Type	Value
Chromium	TWA	2 mg/m ³
Components	Type	Value

Chromium (CAS 7440-47-3)	TWA	2 mg/m ³
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Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)

Material	Type	Value	Form
Chromium	TWA	0,5 mg/m ³	Total dust.
Components	Type	Value	Form

Chromium (CAS 7440-47-3)	TWA	0,5 mg/m ³	Total dust.
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Switzerland. SUVA Grenzwerte am Arbeitsplatz

Material	Type	Value	Form
Chromium	TWA	0,5 mg/m ³	Inhalable fraction.
Components	Type	Value	Form

Chromium (CAS 7440-47-3)	TWA	0,5 mg/m ³	Inhalable fraction.
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UK. EH40 Workplace Exposure Limits (WELs)

Material	Type	Value
Chromium	TWA	0,5 mg/m ³
Components	Type	Value

Chromium (CAS 7440-47-3)	TWA	0,5 mg/m ³
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EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

Material	Type	Value
Chromium	TWA	2 mg/m ³
Components	Type	Value

Chromium (CAS 7440-47-3)	TWA	2 mg/m ³
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Biological limit values

Czech Republic. Limit Values for Indicators of Biological Exposure Tests in Urine and Blood, Annex 2, Tables 1 and 2, Government Decree 432/2003 Sb.

Material	Value	Determinant	Specimen	Sampling Time
Chromium	0,065 µmol/mmol	Total chromium	Creatinine in urine	*
	0,03 mg/g	Total chromium	Creatinine in urine	*
Components	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. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices

Material	Value	Determinant	Specimen	Sampling Time
Chromium	0,02 mg/g	chromium	Creatinine in urine	*
	0,043 µmol/mmol	chromium	Creatinine in urine	*

Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices

Components	Value	Determinant	Specimen	Sampling Time
Chromium (CAS 7440-47-3)	0,02 mg/g	chromium	Creatinine in urine	*
	0,043 µmol/mmol	chromium	Creatinine in urine	*

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

Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4

Material	Value	Determinant	Specimen	Sampling Time
Chromium	25 µg/l	Cromo total	Urine	*
	10 µg/l	Cromo total	Urine	*

Components	Value	Determinant	Specimen	Sampling Time
Chromium (CAS 7440-47-3)	25 µg/l	Cromo total	Urine	*
	10 µg/l	Cromo total	Urine	*

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

UK. EH40 Biological Monitoring Guidance Values (BMGVs)

Material	Value	Determinant	Specimen	Sampling Time
Chromium	10 umol/mol	Chromium	Creatinine in urine	*

Components	Value	Determinant	Specimen	Sampling Time
Chromium (CAS 7440-47-3)	10 umol/mol	Chromium	Creatinine in urine	*

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

Recommended monitoring procedures Not available.

Derived no effect levels (DNELs) Not available.

Predicted no effect concentrations (PNECs) Not available.

8.2. Exposure controls

Appropriate engineering controls Not available.

Individual protection measures, such as personal protective equipment

General information Not available.

Eye/face protection Not available.

Skin protection

- **Hand protection** Not available.

- **Other** Not available.

Respiratory protection Not available.

Thermal hazards Not available.

Hygiene measures Not available.

Environmental exposure controls Not available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state Solid.

Form Not available.

Colour Not available.

Odour Not available.

Odour threshold Not available.

pH Not available.

Melting point/freezing point 1900 °C (3452 °F)

Initial boiling point and boiling range	2642 °C (4787,6 °F)
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapour pressure	< 0,0000001 kPa (25 °C (77 °F))
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Explosive properties	Not available.
Oxidising properties	Not available.
9.2. Other information	
Density	7,14 g/cm ³ estimated
Molecular formula	Cr
Molecular weight	52 g/mol
Specific gravity	7,14
Surface tension	1,52 N/m (1800 °C (3272 °F))

SECTION 10: Stability and reactivity

10.1. Reactivity	Not available.
10.2. Chemical stability	Not available.
10.3. Possibility of hazardous reactions	Not available.
10.4. Conditions to avoid	Not available.
10.5. Incompatible materials	Not available.
10.6. Hazardous decomposition products	Not available.

SECTION 11: Toxicological information

General information	Not available.
Information on likely routes of exposure	
Inhalation	Not available.
Skin contact	Not available.
Eye contact	Not available.
Ingestion	Not available.
Symptoms	Not available.
11.1. Information on toxicological effects	
Acute toxicity	No data available.
Skin corrosion/irritation	Not available.
Serious eye damage/eye irritation	Not available.
Respiratory sensitisation	Not available.
Skin sensitisation	Not available.
Germ cell mutagenicity	Not available.
Carcinogenicity	

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

Not listed.

IARC Monographs. Overall Evaluation of Carcinogenicity

Chromium (CAS 7440-47-3)

3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity	Not available.
Specific target organ toxicity - single exposure	Not available.
Specific target organ toxicity - repeated exposure	Not available.
Aspiration hazard	Not available.
Mixture versus substance information	Not available.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity

Product		Species	Test Results
Chromium			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	0,01 - 0,7 mg/l, 48 hours
Fish	LC50	Carp (Cyprinus carpio)	14,3 mg/l, 96 hours

12.2. Persistence and degradability Not available.

12.3. Bioaccumulative potential Not available.

Partition coefficient n-octanol/water (log Kow) Not available.

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil Not available.

12.5. Results of PBT and vPvB assessment Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects Not available.

12.7. Additional information

Estonia Dangerous substances in groundwater Data

Chromium (CAS 7440-47-3)

Chromium (Cr) 10 ug/l
Chromium (Cr) 200 ug/l

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 Not available.

Contaminated packaging Not available.

EU waste code Not available.

SECTION 14: Transport information

ADR

14.1. UN number UN3077

14.2. UN proper shipping name Environmentally hazardous substance, solid, n.o.s. (Chromium)

14.3. Transport hazard class(es)

Class 9

Subsidiary risk -

Label(s) 9

Hazard No. (ADR) 90

Tunnel restriction code E
14.4. Packing group III
14.5. Environmental hazards No.
14.6. Special precautions for user Not available.

RID

14.1. UN number UN3077
14.2. UN proper shipping name Environmentally hazardous substance, solid, n.o.s. (Chromium)
14.3. Transport hazard class(es)
Class 9
Subsidiary risk -
Label(s) 9
14.4. Packing group III
14.5. Environmental hazards No.
14.6. Special precautions for user Not available.

ADN

14.1. UN number UN3077
14.2. UN proper shipping name Environmentally hazardous substance, solid, n.o.s. (Chromium)
14.3. Transport hazard class(es)
Class 9
Subsidiary risk -
Label(s) 9
14.4. Packing group III
14.5. Environmental hazards No.
14.6. Special precautions for user Not available.

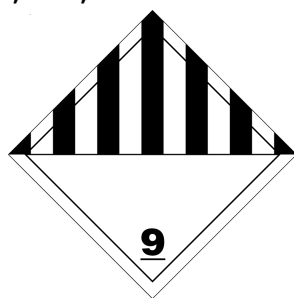
IATA

14.1. - 14.6.: Not regulated as dangerous goods.

IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

ADN; ADR; RID



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 (EC) No. 850/2004 On persistent organic pollutants, Annex I 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

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.

Other EU regulations

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

Not listed.

National regulations

Not available.

15.2. Chemical safety assessment

Not available.

SECTION 16: Other information

List of abbreviations

Not available.

References

Not available.

Training information

Not available.

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).