



# PRODUCT INFORMATION SHEET

**MATERION**

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

### 1.1. Product identifier

<b>Name of the substance</b>	Chromium Granulate
<b>Identification number</b>	231-157-5 (EC number)
<b>Registration number</b>	-
<b>Document number</b>	G82
<b>Synonyms</b>	None.
<b>Issue date</b>	31-August-2021
<b>Version number</b>	01

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

<b>Identified uses</b>	Scientific research and development Other: Manufacture of medical and defense equipment
<b>Uses advised against</b>	Professional uses: Public domain (administration, education, entertainment, services, craftsmen) Consumer uses: Private households (= general public = consumers)

### 1.3. Details of the supplier of the product information sheet

#### Supplier

<b>Company name</b>	Materion Advanced Materials
<b>Address</b>	6070 Parkland Boulevard United States
<b>Division</b>	
<b>Telephone</b>	1.216.383.4019
<b>e-mail</b>	ehs@materion.com
<b>Contact person</b>	Theodore Knudson

### 1.4. Emergency telephone number

See Section 16.

## 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

##### Environmental hazards

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

**Hazard summary** 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.

### 2.2. Label elements

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

<b>Hazard pictograms</b>	None.
<b>Signal word</b>	None.
<b>Hazard statements</b>	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.

#### Precautionary statements

<b>Prevention</b>	Observe good industrial hygiene practices.
<b>Response</b>	Wash hands after handling.
<b>Storage</b>	Store away from incompatible materials.
<b>Disposal</b>	
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 +1.216.383.4019.

**2.3. Other hazards**

Not a PBT or vPvB substance or mixture.

**SECTION 3: Composition/information on ingredients****3.1. Substances****General information**

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Chromium	95 - 98	7440-47-3 231-157-5	-	-	#
<b>Classification:</b> Aquatic Chronic 3;H412					
Aluminium	2 - 4	7429-90-5 231-072-3	-	013-002-00-1	
<b>Classification:</b> Aquatic Acute 1;H400, Aquatic Chronic 1;H410					
Iron	1 - 3	7439-89-6 231-096-4	-	-	
<b>Classification:</b> -					

**SECTION 4: First aid measures****General information**

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.

**4.1. Description of first aid measures****Inhalation**

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison centre or doctor/physician if you feel unwell.

**Skin contact**

Wash off with soap and water. Get medical attention if irritation develops and persists.

**Eye contact**

Rinse with water. Get medical attention if irritation develops and persists.

**Ingestion**

Rinse mouth. Get medical attention if symptoms occur.

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

None known.

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

Treat symptomatically.

**SECTION 5: Firefighting measures****General fire hazards**

No unusual fire or explosion hazards noted. None known.

**5.1. Extinguishing media****Suitable extinguishing media**

Extinguish with alcohol-resistant foam, carbon dioxide or dry powder.

**Unsuitable extinguishing media**

None known.

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

This product is not flammable.

**5.3. Advice for firefighters****Special protective equipment for firefighters**

Use protective equipment appropriate for surrounding materials.

**Special firefighting procedures**

Use standard firefighting procedures and consider the hazards of other involved materials. 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****For non-emergency personnel**

Keep unnecessary personnel away. Ensure suitable personal protection (including respiratory protection) during removal of spillages in a confined area. For personal protection, see section 8 of the PIS.

**For emergency responders**

Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Use personal protection recommended in Section 8 of the PIS.

## 6.2. Environmental precautions

Collect spillage.

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

Avoid dust formation. Stop the flow of material, if this is without risk. Sweep up or vacuum up spillage and collect in suitable container for disposal. For waste disposal, see section 13 of the PIS.

## 6.4. Reference to other sections

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

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

### 7.2. Conditions for safe storage, including any incompatibilities

Store in a cool, dry place with adequate ventilation. Keep away from incompatible materials, open flames and high temperatures.

### 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	Form
Chromium Granulate	MAK	2 mg/m <sup>3</sup>	
<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Aluminium (CAS 7429-90-5)	MAK	5 mg/m <sup>3</sup>	Respirable fraction.
		10 mg/m <sup>3</sup>	Inhalable fraction.
	STEL	20 mg/m <sup>3</sup>	Inhalable fraction.
		10 mg/m <sup>3</sup>	Respirable fraction.
Chromium (CAS 7440-47-3)	MAK	2 mg/m <sup>3</sup>	

##### Belgium. Exposure Limit Values

Material	Type	Value	Form
Chromium Granulate	TWA	0,5 mg/m <sup>3</sup>	
<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Aluminium (CAS 7429-90-5)	TWA	1 mg/m <sup>3</sup>	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m <sup>3</sup>	

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

Material	Type	Value	Form
Chromium Granulate	TWA	2 mg/m <sup>3</sup>	
<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Aluminium (CAS 7429-90-5)	TWA	2 mg/m <sup>3</sup>	
		10 mg/m <sup>3</sup>	Dust.
		1,5 mg/m <sup>3</sup>	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	2 mg/m <sup>3</sup>	
Iron (CAS 7439-89-6)	TWA	6 mg/m <sup>3</sup>	Inhalable fraction.

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

Material	Type	Value	Form
Chromium Granulate	MAC	2 mg/m <sup>3</sup>	
<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Aluminium (CAS 7429-90-5)	MAC	4 mg/m <sup>3</sup>	Respirable dust.
		10 mg/m <sup>3</sup>	Total dust.
Chromium (CAS 7440-47-3)	MAC	2 mg/m <sup>3</sup>	

##### Czech Republic. OELs. Government Decree 361

Material	Type	Value	Form
Chromium Granulate	Ceiling	1,5 mg/m <sup>3</sup>	Aerosol, inhalable.

**Czech Republic. OELs. Government Decree 361**

Material	Type	Value	Form
	TWA	0,5 mg/m3	Aerosol, inhalable.
		0,5 mg/m3	Dust.
Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	10 mg/m3	Dust.
Chromium (CAS 7440-47-3)	Ceiling	1,5 mg/m3	Aerosol, inhalable.
	TWA	0,5 mg/m3	Aerosol, inhalable.
		0,5 mg/m3	Dust.
Iron (CAS 7439-89-6)	TWA	10 mg/m3	

**Denmark. Exposure Limit Values**

Material	Type	Value	Form
Chromium Granulate	TLV	0,5 mg/m3	Dust.
Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TLV	5 mg/m3	Fume.
		5 mg/m3	Dust and fume.
		2 mg/m3	Respirable dust and/or fume.
Chromium (CAS 7440-47-3)	TLV	0,5 mg/m3	Dust.

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

Material	Type	Value	Form
Chromium Granulate	TWA	2 mg/m3	
Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	4 mg/m3	Fine dust, respiratory fraction
		10 mg/m3	Total dust.
Chromium (CAS 7440-47-3)	TWA	2 mg/m3	

**Finland. Workplace Exposure Limits**

Material	Type	Value	Form
Chromium Granulate	TWA	0,5 mg/m3	
Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	1,5 mg/m3	Welding fume.
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m3	

**France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984**

Material	Type	Value	Form
Chromium Granulate	VME	2 mg/m3	
<b>Regulatory status:</b>	Regulatory indicative (VRI)		
Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	VME	5 mg/m3	Welding fume.
<b>Regulatory status:</b>	Indicative limit (VL)		
		5 mg/m3	Dust.
<b>Regulatory status:</b>	Indicative limit (VL)		
		10 mg/m3	
<b>Regulatory status:</b>	Indicative limit (VL)		
Chromium (CAS 7440-47-3)	VME	2 mg/m3	
<b>Regulatory status:</b>	Regulatory indicative (VRI)		

**Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)**

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	4 mg/m3	Inhalable dust.

**Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)**

Components	Type	Value	Form
		1,5 mg/m <sup>3</sup>	Respirable dust.

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

Material	Type	Value	Form
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Chromium Granulate	AGW	2 mg/m <sup>3</sup>	Inhalable fraction.
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Components	Type	Value	Form
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Aluminium (CAS 7429-90-5)	AGW	10 mg/m <sup>3</sup>	Inhalable fraction.
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		1,25 mg/m <sup>3</sup>	Respirable fraction.
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Chromium (CAS 7440-47-3)	AGW	2 mg/m <sup>3</sup>	Inhalable fraction.
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**Greece. OELs (Decree No. 90/1999, as amended)**

Material	Type	Value
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Chromium Granulate	TWA	1 mg/m <sup>3</sup>
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Components	Type	Value	Form
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Aluminium (CAS 7429-90-5)	TWA	5 mg/m <sup>3</sup>	Inhalable
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		10 mg/m <sup>3</sup>	Welding fume.
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		10 mg/m <sup>3</sup>	Respirable.
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		10 mg/m <sup>3</sup>	Pyrophoric powder.
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Chromium (CAS 7440-47-3)	TWA	1 mg/m <sup>3</sup>	
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**Hungary. OELs. Joint Decree on Chemical Safety of Workplaces**

Material	Type	Value
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Chromium Granulate	TWA	2 mg/m <sup>3</sup>
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Components	Type	Value	Form
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Aluminium (CAS 7429-90-5)	TWA	6 mg/m <sup>3</sup>	Respirable.
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Chromium (CAS 7440-47-3)	TWA	2 mg/m <sup>3</sup>	
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**Iceland. OELs. Regulation 154/1999 on occupational exposure limits**

Material	Type	Value	Form
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Chromium Granulate	TWA	0,5 mg/m <sup>3</sup>	Dust.
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Components	Type	Value	Form
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Aluminium (CAS 7429-90-5)	STEL	10 mg/m <sup>3</sup>	Dust.
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	TWA	5 mg/m <sup>3</sup>	Dust.
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Chromium (CAS 7440-47-3)	TWA	0,5 mg/m <sup>3</sup>	Dust.
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**Ireland. Occupational Exposure Limits**

Material	Type	Value
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Chromium Granulate	TWA	2 mg/m <sup>3</sup>
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Components	Type	Value	Form
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Aluminium (CAS 7429-90-5)	TWA	1 ppm	Respirable dust.
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Chromium (CAS 7440-47-3)	TWA	2 mg/m <sup>3</sup>	
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**Italy. Occupational Exposure Limits**

Material	Type	Value
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Chromium Granulate	TWA	0,5 mg/m <sup>3</sup>
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Components	Type	Value	Form
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Aluminium (CAS 7429-90-5)	TWA	1 mg/m <sup>3</sup>	Respirable fraction.
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Chromium (CAS 7440-47-3)	TWA	0,5 mg/m <sup>3</sup>	
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**Latvia. OELs. Occupational exposure limit values of chemical substances in work environment**

Material	Type	Value
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Chromium Granulate	TWA	2 mg/m <sup>3</sup>
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**Latvia. OELs. Occupational exposure limit values of chemical substances in work environment**

<b>Components</b>	<b>Type</b>	<b>Value</b>
Aluminium (CAS 7429-90-5)	TWA	2 mg/m <sup>3</sup>
Chromium (CAS 7440-47-3)	TWA	2 mg/m <sup>3</sup>

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

<b>Material</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Chromium Granulate	TWA	2 mg/m <sup>3</sup>	
<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Aluminium (CAS 7429-90-5)	TWA	5 mg/m <sup>3</sup>	Inhalable fraction.
		2 mg/m <sup>3</sup>	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	2 mg/m <sup>3</sup>	

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

<b>Material</b>	<b>Type</b>	<b>Value</b>
Chromium Granulate	TWA	2 mg/m <sup>3</sup>
<b>Components</b>	<b>Type</b>	<b>Value</b>
Chromium (CAS 7440-47-3)	TWA	2 mg/m <sup>3</sup>

**Netherlands. OELs (binding)**

<b>Material</b>	<b>Type</b>	<b>Value</b>
Chromium Granulate	TWA	0,5 mg/m <sup>3</sup>
<b>Components</b>	<b>Type</b>	<b>Value</b>
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m <sup>3</sup>

**Norway. Administrative Norms for Contaminants in the Workplace**

<b>Material</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Chromium Granulate	TLV	0,5 mg/m <sup>3</sup>	
<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Aluminium (CAS 7429-90-5)	TLV	5 mg/m <sup>3</sup>	Pyrophoric powder.
		5 mg/m <sup>3</sup>	Welding fume.
Chromium (CAS 7440-47-3)	TLV	0,5 mg/m <sup>3</sup>	

**Poland. 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**

<b>Material</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Chromium Granulate	TWA	0,5 mg/m <sup>3</sup>	
<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Aluminium (CAS 7429-90-5)	TWA	2,5 mg/m <sup>3</sup>	Inhalable fraction.
		1,2 mg/m <sup>3</sup>	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m <sup>3</sup>	

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

<b>Material</b>	<b>Type</b>	<b>Value</b>
Chromium Granulate	TWA	2 mg/m <sup>3</sup>
<b>Components</b>	<b>Type</b>	<b>Value</b>
Chromium (CAS 7440-47-3)	TWA	2 mg/m <sup>3</sup>

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

<b>Material</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Chromium Granulate	TWA	0,5 mg/m <sup>3</sup>	
<b>Components</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Aluminium (CAS 7429-90-5)	TWA	1 mg/m <sup>3</sup>	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m <sup>3</sup>	

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

Material	Type	Value	
Chromium Granulate	TWA	2 mg/m <sup>3</sup>	
Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	STEL	3 mg/m <sup>3</sup>	Fume.
		10 mg/m <sup>3</sup>	Dust.
	TWA	3 mg/m <sup>3</sup>	Dust.
Chromium (CAS 7440-47-3)	TWA	1 mg/m <sup>3</sup>	Fume.
		2 mg/m <sup>3</sup>	

**Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents**

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	4 mg/m <sup>3</sup>	Inhalable fraction.
		1,5 mg/m <sup>3</sup>	Respirable fraction.
Iron (CAS 7439-89-6)	TWA	6 mg/m <sup>3</sup>	

**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	Form
Chromium Granulate	TWA	2 mg/m <sup>3</sup>	Inhalable fraction.
Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	10 mg/m <sup>3</sup>	Inhalable fraction.
		1,25 mg/m <sup>3</sup>	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	2 mg/m <sup>3</sup>	Inhalable fraction.

**Spain. Occupational Exposure Limits**

Material	Type	Value	
Chromium Granulate	TWA	2 mg/m <sup>3</sup>	
Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	5 mg/m <sup>3</sup>	Welding fume.
		10 mg/m <sup>3</sup>	Dust.
Chromium (CAS 7440-47-3)	TWA	2 mg/m <sup>3</sup>	

**Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)**

Material	Type	Value	Form
Chromium Granulate	TWA	0,5 mg/m <sup>3</sup>	Total dust.
Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	5 mg/m <sup>3</sup>	Total dust.
		2 mg/m <sup>3</sup>	Respirable dust.
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m <sup>3</sup>	Total dust.

**Switzerland. SUVA Grenzwerte am Arbeitsplatz**

Material	Type	Value	Form
Chromium Granulate	TWA	0,5 mg/m <sup>3</sup>	Inhalable fraction.
Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	3 mg/m <sup>3</sup>	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m <sup>3</sup>	Inhalable fraction.

**UK. EH40 Workplace Exposure Limits (WELs)**

Material	Type	Value	
Chromium Granulate	TWA	0,5 mg/m <sup>3</sup>	
Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	4 mg/m <sup>3</sup>	Respirable dust.
		10 mg/m <sup>3</sup>	Inhalable dust.
Chromium (CAS 7440-47-3)	TWA	0,5 mg/m <sup>3</sup>	

**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 Granulate	TWA	2 mg/m <sup>3</sup>
Components	Type	Value
Chromium (CAS 7440-47-3)	TWA	2 mg/m <sup>3</sup>

**Biological limit values**

**Croatia. BLV. Dangerous Substance Exposure Limit Values at Workplace, Annexes 4 (as amended)**

Components	Value	Determinant	Specimen	Sampling Time
Aluminium (CAS 7429-90-5)	200 mg/l	Aluminium	Urine	*

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

**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 Granulate	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.

**Germany. TRGS 903, BAT List (Biological Limit Values)**

Components	Value	Determinant	Specimen	Sampling Time
Aluminium (CAS 7429-90-5)	50 µg/g	Aluminium	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 Granulate	0,02 mg/g	chromium	Creatinine in urine	*
	0,043 µmol/mmol	chromium	Creatinine in urine	*
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.

**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
Aluminium (CAS 7429-90-5)	60 µg/g	Aluminium	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 Granulate	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.



**Switzerland. BAT-Werte (Biological Limit Values in the Workplace as per SUVA)**

Components	Value	Determinant	Specimen	Sampling Time
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Aluminium (CAS 7429-90-5)	60 µg/g	Aluminium	Creatinine in urine	*
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\* - For sampling details, please see the source document.

**UK. EH40 Biological Monitoring Guidance Values (BMGVs)**

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

**Individual protection measures, such as personal protective equipment**

**General information** 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 gloves to prevent metal cuts and skin abrasions during handling.

- **Other** Wear suitable protective clothing.

**Respiratory protection** In case of insufficient ventilation, wear suitable respiratory equipment.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**Hygiene measures** 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.

**Environmental exposure 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.

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

**Physical state** Solid.

**Form** Solid.

**Colour** Light grey.

**Odour** None.

**Odour threshold** Not applicable.

**pH** Not applicable.

**Melting point/freezing point** 1900 °C (3452 °F) / Not applicable.

**Initial boiling point and boiling range** Not applicable.

**Flash point** Not applicable.

**Evaporation rate** Not applicable.

**Flammability (solid, gas)** None known.

## Upper/lower flammability or explosive limits

<b>Explosive limit - lower (%)</b>	Not applicable.
<b>Explosive limit - lower (%) temperature</b>	Not applicable.
<b>Explosive limit – upper (%)</b>	Not applicable.

**Explosive limit - upper (%) temperature** Not applicable.

**Vapour pressure** Not applicable.

**Vapour density** Not applicable.

**Relative density** Not applicable.

## Solubility(ies)

**Solubility (water)** Insoluble

**Partition coefficient (n-octanol/water)** Not applicable.  
Not applicable.

**Auto-ignition temperature** Not applicable.

**Decomposition temperature** Not applicable.

**Viscosity** Not applicable.

**Explosive properties** Not explosive.

**Oxidising properties** Not oxidising.

## 9.2. Other information

**Density** 7,14 g/cm<sup>3</sup> estimated

**Molecular formula** Cr

**Molecular weight** 52 g/mol

## SECTION 10: Stability and reactivity

**10.1. Reactivity** The product is stable and non-reactive under normal conditions of use, storage and transport.

**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** Contact with incompatible materials.

**10.5. Incompatible materials** Strong oxidising agents. Strong acids.

**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** No adverse effects due to inhalation are expected.

**Skin contact** No adverse effects due to skin contact are expected.

**Eye contact** Not likely, due to the form of the product.

**Ingestion** Expected to be a low ingestion hazard.

**Symptoms** May cause respiratory irritation.

### 11.1. Information on toxicological effects

**Acute toxicity** None known.

**Skin corrosion/irritation** Not likely, due to the form of the product.

**Serious eye damage/eye irritation** None known.

**Respiratory sensitisation** Not a respiratory sensitizer.

**Skin sensitisation** Not a skin sensitiser.

**Germ cell mutagenicity** Not classified.

**Carcinogenicity** Not classified.

**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.

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

Aluminium (CAS 7429-90-5)

Carcinogenic, Category 1A

<b>Reproductive toxicity</b>	Not classified.
<b>Specific target organ toxicity - single exposure</b>	Not classified.
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
<b>Aspiration hazard</b>	Not an aspiration hazard.
<b>Mixture versus substance information</b>	No information available.
<b>Other information</b>	Not available.

**SECTION 12: Ecological information**

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

<b>Product</b>	<b>Species</b>	<b>Test Results</b>
Chromium Granulate		
<b>Aquatic</b>		
<i>Acute</i>		
Crustacea	EC50	Water flea ( <i>Daphnia magna</i> ) 0,01 - 0,7 mg/l, 48 hours
Fish	LC50	American eel ( <i>Anguilla rostrata</i> ) 13,9 mg/l, 96 hours

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

**12.3. Bioaccumulative potential** No data available.

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

**Bioconcentration factor (BCF)** Not available.

**12.4. Mobility in soil** No data available.

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

**12.6. 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.

**12.7. 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**

<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.
<b>Disposal methods/information</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Special precautions</b>	Dispose in accordance with all applicable regulations.

## SECTION 14: Transport information

### ADR

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

### RID

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

### ADN

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

### IATA

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

### IMDG

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

## 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**

Aluminium (CAS 7429-90-5)

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**

Aluminium (CAS 7429-90-5)

**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**

Aluminium (CAS 7429-90-5)

#### 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 in accordance with Directive 98/24/EC, as amended.

#### 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

## SECTION 16: Other information

#### List of abbreviations

Not available.

#### References

Not available.

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

Not applicable.

**Training information**

Follow training instructions when handling this material.

**Further information**

Transportation Emergency  
Call Chemtrec at:  
International: 703.741.5970  
Spain: 900.868.538  
Switzerland: 0800.564.402

**Disclaimer**

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**Other information**

Revised information in Section 16.