



# SAFETY DATA SHEET

**MATERION**

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

### 1.1. Product identifier

**Trade name or designation of the mixture** Amorphous Alloy LM-601Modified  
**Registration number** -  
**Document number** M35  
**Synonyms** None.  
**Issue date** 11-December-2015  
**Revision date** 01-February-2016

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

#### Only Representative

**Company name** UMCO Umwelt Consult GmbH  
**Address** Georg-Wilhelm-Strasse 183  
D-21107 Hamburg  
Germany  
**Telephone** +49 (0)40 79 02 36 300  
**Fax** +49 (0)40 79 02 36 357  
**E-mail** reach@umco.de  
**Contact person**

#### Manufacturer

**Company name** Materion Brush Inc.  
**Address** 6070 Parkland Boulevard  
Mayfield Heights, OH 44124  
**Telephone** +1 216 486 4200  
**Contact person** Theodore Knudson  
**E-mail** ehs@materion.com

**Supersedes date** 11-December-2015

**Version number** 02

### 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

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

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

##### Health hazards

Acute toxicity, oral	Category 3	H301 - Toxic if swallowed.
Acute toxicity, inhalation	Category 2	H330 - Fatal if inhaled.
Skin sensitisation	Category 1	H317 - May cause an allergic skin reaction.
Carcinogenicity	Category 1B	H350i - May cause cancer by inhalation.
Specific target organ toxicity - single exposure	Category 3 respiratory tract irritation	H335 - May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Category 1 (Respiratory system)	H372 - Causes damage to organs (respiratory system) through prolonged or repeated exposure by inhalation.

**Hazard summary** May cause cancer by inhalation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Causes damage to organs through prolonged or repeated exposure.

## 2.2. Label elements

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

**Contains:** Aluminium, Beryllium, Copper, Nickel, Zirconium

#### Hazard pictograms



#### Signal word

Danger

#### Hazard statements

H301 Toxic if swallowed.  
H317 May cause an allergic skin reaction.  
H330 Fatal if inhaled.  
H335 May cause respiratory irritation.  
H350i May cause cancer by inhalation.  
H372 Causes damage to organs (respiratory system) through prolonged or repeated exposure by inhalation.

#### Precautionary statements

##### Prevention

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe dust/fume.  
P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P272 Contaminated work clothing must not be allowed out of the workplace.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P285 In case of inadequate ventilation wear respiratory protection.

##### Response

P302 + P350 If on skin: Wash with plenty of water.  
P304 + P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.  
P308 + P311 If exposed or concerned: Call a poison centre/doctor.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.  
P342 + P311 If experiencing respiratory symptoms: Call a poison centre/doctor.  
P363 Wash contaminated clothing before reuse.

##### Storage

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 +1.216.383.4019.

#### 2.3. Other hazards

None known.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Zirconium	55 - 71	7440-67-7 231-176-9	-	040-002-00-9	
<b>Classification:</b>		Flam. Sol. 2;H228, Pyr. Sol. 1;H250, Self-heat. 1;H251, Water-React. 2;H261, Skin Irrit. 2;H315, Skin Sens. 1;H317, Eye Irrit. 2;H319, STOT SE 3;H335, STOT RE 1;H372			T
Copper	25 - 35	7440-50-8 231-159-6	01-2119480154-42-0080	-	
<b>Classification:</b>	-				
Aluminium	2 - 5	7429-90-5 231-072-3	01-2119529243-45-0056	013-002-00-1	
<b>Classification:</b>	-				T
Nickel	2 - 5	7440-02-0 231-111-4	01-2119438727-29-0049	028-002-00-7	
<b>Classification:</b>	Skin Sens. 1;H317, STOT SE 3;H335, Carc. 2;H351, STOT RE 2;H373				7,S

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Beryllium	0 - 0,1	7440-41-7 231-150-7	01-2119487146-32-0000	004-001-00-7	
<b>Classification:</b>	Skin Sens. 1;H317, STOT SE 3;H335, Carc. 1B;H350i, STOT RE 1;H372				

## SECTION 4: First aid measures

### General information

If exposed or concerned: get medical attention/advice. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse. As supplied, there is no immediate medical risk with beryllium products in article form. First aid measures provided are related to particulate containing beryllium.

### 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. Call a physician or poison control centre immediately. Breathing difficulty caused by inhalation of particulate requires immediate removal to fresh air. If breathing has stopped, perform artificial respiration and obtain medical help. If breathing has stopped, perform artificial respiration and obtain medical help.

#### Skin contact

Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Thoroughly wash skin cuts or wounds to remove all particulate debris from the wound. Seek medical attention for wounds that cannot be thoroughly cleansed. Treat skin cuts and wounds with standard first aid practices such as cleansing, disinfecting and covering to prevent wound infection and contamination before continuing work. Obtain medical help for persistent irritation. Material accidentally implanted or lodged under the skin must be removed.

#### Eye contact

Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists. Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally.

#### 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. Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Never give anything by mouth to an unconscious person.

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

May cause respiratory irritation. May cause an allergic skin reaction. Prolonged exposure may cause chronic effects.

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

Treatment of Chronic Beryllium Disease: There is no known treatment which will cure chronic beryllium disease. Prednisone or other corticosteroids are the most specific treatment currently available. They are directed at suppressing the immunological reaction and can be effective in diminishing signs and symptoms of chronic beryllium disease. In cases where steroid therapy has had only partial or minimal effectiveness, other immunosuppressive agents, such as cyclophosphamide, cyclosporine, or methotrexate, have been used. In view of the potential side effects of all the immunosuppressive medications, including steroids such as prednisone, they should be used only under the direct care of a physician. Other treatment, such as oxygen, inhaled steroids or bronchodilators, may be prescribed by some physicians and can be effective in selected cases. In general, treatment is reserved for cases with significant symptoms and/or significant loss of lung function. The decision about when and with what medication to treat is a judgment situation for individual physicians.

In their 2014 official statement on the Diagnosis and Management of Beryllium Sensitivity and Chronic Beryllium Disease, the American Thoracic Society states that "it seems prudent for workers with BeS to avoid all future occupational exposure to beryllium."

The effects of continued low exposure to beryllium are unknown for individuals who are sensitized to beryllium or who have a diagnosis of chronic beryllium disease. It is generally recommended that persons who are sensitized to beryllium or who have CBD terminate their occupational exposure to beryllium.

## SECTION 5: Firefighting measures

### General fire hazards

Not available.

### 5.1. Extinguishing media

#### Suitable extinguishing media

The product is non-combustible. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### Unsuitable extinguishing media

Do not use water to extinguish fires around operations involving molten metal due to the potential for steam explosions.

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

Not available.

### 5.3. Advice for firefighters

#### Special protective equipment for firefighters

Firefighters should wear full protective clothing including self contained breathing apparatus.

#### Special firefighting procedures

Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage.

#### Specific methods

Pressure-demand self-contained breathing apparatus must be worn by firefighters or any other persons potentially exposed to the particulate released during or after a fire.

## SECTION 6: Accidental release measures

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

#### For non-emergency personnel

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.

#### For emergency responders

Keep unnecessary personnel away.

### 6.2. Environmental precautions

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

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

Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Stop the flow of material, if this is without risk. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

### 6.4. Reference to other sections

Not available.

## 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. Minimise dust generation and accumulation. Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

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

Store locked up. Store in original tightly closed container. Store in a well-ventilated place.

### 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

Components	Type	Value	Form
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.

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

Components	Type	Value	Form
Copper (CAS 7440-50-8)	MAK	10 mg/m <sup>3</sup>	Respirable fraction.
		1 mg/m <sup>3</sup>	Inhalable fraction.
	STEL	0,1 mg/m <sup>3</sup>	Fume and respirable dust.
		4 mg/m <sup>3</sup>	Inhalable fraction.
Zirconium (CAS 7440-67-7)	MAK	0,4 mg/m <sup>3</sup>	Fume and respirable dust.
		5 mg/m <sup>3</sup>	Inhalable fraction.

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

Components	Type	Value	Form
Beryllium (CAS 7440-41-7)	STEL	0,008 mg/m <sup>3</sup>	Inhalable fraction.
	TWA	0,002 mg/m <sup>3</sup>	Inhalable fraction.
Nickel (CAS 7440-02-0)	STEL	2 mg/m <sup>3</sup>	Inhalable dust.
	TWA	0,5 mg/m <sup>3</sup>	Inhalable dust.

**Belgium. Exposure Limit Values.**

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	1 mg/m <sup>3</sup>	Respirable fraction.
Beryllium (CAS 7440-41-7)	STEL	0,01 mg/m <sup>3</sup>	
	TWA	0,002 mg/m <sup>3</sup>	
Copper (CAS 7440-50-8)	TWA	1 mg/m <sup>3</sup>	Dust and mist.
		0,2 mg/m <sup>3</sup>	Fume.
Nickel (CAS 7440-02-0)	TWA	1 mg/m <sup>3</sup>	
Zirconium (CAS 7440-67-7)	STEL	10 mg/m <sup>3</sup>	
	TWA	5 mg/m <sup>3</sup>	

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

Components	Type	Value	Form
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.
Beryllium (CAS 7440-41-7)	TWA	0,002 mg/m <sup>3</sup>	
Copper (CAS 7440-50-8)	TWA	0,1 mg/m <sup>3</sup>	
Nickel (CAS 7440-02-0)	TWA	0,05 mg/m <sup>3</sup>	

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

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	MAC	4 mg/m <sup>3</sup>	Respirable dust.
		10 mg/m <sup>3</sup>	Total dust.
Beryllium (CAS 7440-41-7)	MAC	0,002 mg/m <sup>3</sup>	
Copper (CAS 7440-50-8)	MAC	0,21 mg/m <sup>3</sup>	Dust and fume.
	STEL	2 mg/m <sup>3</sup>	Dust and fume.
Nickel (CAS 7440-02-0)	MAC	0,5 mg/m <sup>3</sup>	
Zirconium (CAS 7440-67-7)	MAC	5 mg/m <sup>3</sup>	
	STEL	10 mg/m <sup>3</sup>	

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

Components	Type	Value	Form
Beryllium (CAS 7440-41-7)	TWA	0,002 mg/m <sup>3</sup>	
Copper (CAS 7440-50-8)	TWA	0,2 mg/m <sup>3</sup>	Fume.
Nickel (CAS 7440-02-0)	TWA	1 mg/m <sup>3</sup>	
Zirconium (CAS 7440-67-7)	TWA	5 mg/m <sup>3</sup>	

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

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	10 mg/m3	Dust.
Beryllium (CAS 7440-41-7)	Ceiling	0,002 mg/m3	
	TWA	0,001 mg/m3	
Copper (CAS 7440-50-8)	Ceiling	2 mg/m3	Dust.
		0,2 mg/m3	Fume.
	TWA	1 mg/m3	Dust.
Nickel (CAS 7440-02-0)		0,1 mg/m3	Fume.
	Ceiling	1 mg/m3	
	TWA	0,5 mg/m3	

**Denmark. Exposure Limit Values Components**

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TLV	5 mg/m3	Dust and fume.
		5 mg/m3	Fume.
		2 mg/m3	Respirable dust and/or fume.
Beryllium (CAS 7440-41-7)	TLV	0,001 mg/m3	
Copper (CAS 7440-50-8)	TLV	1 mg/m3	Dust.
		0,1 mg/m3	Fume.
Nickel (CAS 7440-02-0)	TLV	0,05 mg/m3	Dust.

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

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	4 mg/m3	Respirable dust.
		10 mg/m3	Total dust.
Beryllium (CAS 7440-41-7)	TWA	0,002 mg/m3	
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Total dust.
		0,2 mg/m3	Respirable dust.
Nickel (CAS 7440-02-0)	TWA	0,5 mg/m3	

**Finland. Workplace Exposure Limits Components**

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	1,5 mg/m3	Welding fume.
Beryllium (CAS 7440-41-7)	STEL	0,004 mg/m3	
	TWA	0,001 mg/m3	
Copper (CAS 7440-50-8)	TWA	0,1 mg/m3	Respirable dust and/or fume.
		0,02 mg/m3	Respirable.
Nickel (CAS 7440-02-0)	TWA	0,01 mg/m3	Respirable.
Zirconium (CAS 7440-67-7)	TWA	1 mg/m3	

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

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	VME	5 mg/m3	Welding fume.
		5 mg/m3	Dust.
		10 mg/m3	
Beryllium (CAS 7440-41-7)	VME	0,002 mg/m3	
Copper (CAS 7440-50-8)	VLE	2 mg/m3	Dust.

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

Components	Type	Value	Form
	VME	1 mg/m3	Dust.
<b>Regulatory status:</b> Indicative limit (VL)			
		0,2 mg/m3	Fume.
<b>Regulatory status:</b> Indicative limit (VL)			
Nickel (CAS 7440-02-0)	VME	1 mg/m3	
<b>Regulatory status:</b> Indicative limit (VL)			

**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 fraction.
		1,5 mg/m3	Respirable fraction.
Copper (CAS 7440-50-8)	TWA	0,01 mg/m3	Respirable fraction.
Zirconium (CAS 7440-67-7)	TWA	1 mg/m3	Inhalable fraction.

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

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	AGW	10 mg/m3	Inhalable fraction.
		1,25 mg/m3	Respirable fraction.
Beryllium (CAS 7440-41-7)	AGW	0,00014 mg/m3	Inhalable fraction.
		0,00006 mg/m3	Respirable fraction.
Nickel (CAS 7440-02-0)	AGW	0,006 mg/m3	Respirable fraction.
Zirconium (CAS 7440-67-7)	AGW	1 mg/m3	Inhalable fraction.

**Greece. OELs (Decree No. 90/1999, as amended)**

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	5 mg/m3	Inhalable
		10 mg/m3	Pyrophoric powder.
		10 mg/m3	Respirable.
		10 mg/m3	Welding fume.
Beryllium (CAS 7440-41-7)	TWA	0,005 mg/m3	
Copper (CAS 7440-50-8)	STEL	2 mg/m3	Dust.
	TWA	1 mg/m3	Dust.
		0,2 mg/m3	Fume.
Nickel (CAS 7440-02-0)	TWA	1 mg/m3	
Zirconium (CAS 7440-67-7)	STEL	10 mg/m3	
	TWA	5 mg/m3	

**Hungary. OELs. Joint Decree on Chemical Safety of Workplaces**

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	6 mg/m3	Respirable.
Beryllium (CAS 7440-41-7)	Ceiling	0,002 mg/m3	
Copper (CAS 7440-50-8)	STEL	4 mg/m3	
		0,4 mg/m3	Smoke.
	TWA	1 mg/m3	
		0,1 mg/m3	Smoke.
Nickel (CAS 7440-02-0)	Ceiling	0,1 mg/m3	
Zirconium (CAS 7440-67-7)	STEL	20 mg/m3	
	TWA	5 mg/m3	

**Iceland. OELs. Regulation 154/1999 on occupational exposure limits**

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	5 mg/m3	Fume.
		10 mg/m3	Dust.

**Iceland. OELs. Regulation 154/1999 on occupational exposure limits**

Components	Type	Value	Form
Beryllium (CAS 7440-41-7)	TWA	0,001 mg/m <sup>3</sup>	Dust.
Copper (CAS 7440-50-8)	TWA	1 mg/m <sup>3</sup>	Total dust.
		0,1 mg/m <sup>3</sup>	Respirable dust.
Nickel (CAS 7440-02-0)	TWA	0,05 mg/m <sup>3</sup>	Dust.
Zirconium (CAS 7440-67-7)	TWA	5 mg/m <sup>3</sup>	

**Ireland. Occupational Exposure Limits**

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	1 ppm	Respirable dust.
Beryllium (CAS 7440-41-7)	TWA	0,0002 mg/m <sup>3</sup>	
Copper (CAS 7440-50-8)	STEL	2 mg/m <sup>3</sup>	Dust and mist.
	TWA	1 mg/m <sup>3</sup>	Dust and mist.
		0,2 mg/m <sup>3</sup>	Fume.
Nickel (CAS 7440-02-0)	TWA	0,5 mg/m <sup>3</sup>	

**Italy. Occupational Exposure Limits**

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	1 mg/m <sup>3</sup>	Respirable fraction.
Beryllium (CAS 7440-41-7)	TWA	0,00005 mg/m <sup>3</sup>	Inhalable fraction.
Copper (CAS 7440-50-8)	TWA	1 mg/m <sup>3</sup>	Dust and mist.
		0,2 mg/m <sup>3</sup>	Fume.
Nickel (CAS 7440-02-0)	TWA	1,5 mg/m <sup>3</sup>	Inhalable fraction.
Zirconium (CAS 7440-67-7)	STEL	10 mg/m <sup>3</sup>	
	TWA	5 mg/m <sup>3</sup>	

**Latvia. OELs. Occupational exposure limit values of chemical substances in work environment**

Components	Type	Value	
Aluminium (CAS 7429-90-5)	TWA	2 mg/m <sup>3</sup>	
Beryllium (CAS 7440-41-7)	TWA	0,001 mg/m <sup>3</sup>	
Copper (CAS 7440-50-8)	STEL	1 mg/m <sup>3</sup>	
	TWA	0,5 mg/m <sup>3</sup>	
Nickel (CAS 7440-02-0)	TWA	0,05 mg/m <sup>3</sup>	

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

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	5 mg/m <sup>3</sup>	Inhalable fraction.
		2 mg/m <sup>3</sup>	Respirable fraction.
Beryllium (CAS 7440-41-7)	TWA	0,002 mg/m <sup>3</sup>	
Copper (CAS 7440-50-8)	TWA	1 mg/m <sup>3</sup>	Inhalable fraction.
		0,2 mg/m <sup>3</sup>	Respirable fraction.
Nickel (CAS 7440-02-0)	TWA	0,5 mg/m <sup>3</sup>	
Zirconium (CAS 7440-67-7)	TWA	6 mg/m <sup>3</sup>	

**Netherlands. OELs (binding)**

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	0,1 mg/m <sup>3</sup>	Inhalable fraction.

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

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TLV	5 mg/m <sup>3</sup>	Pyrophoric powder.
		5 mg/m <sup>3</sup>	Welding fume.
Beryllium (CAS 7440-41-7)	TLV	0,001 mg/m <sup>3</sup>	
Copper (CAS 7440-50-8)	TLV	1 mg/m <sup>3</sup>	Dust.
		0,1 mg/m <sup>3</sup>	Fume.



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

Components	Type	Value	Form
Nickel (CAS 7440-02-0)	TLV	0,05 mg/m <sup>3</sup>	

**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**

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	2,5 mg/m <sup>3</sup>	Inhalable fraction.
		1,2 mg/m <sup>3</sup>	Respirable fraction.
Beryllium (CAS 7440-41-7)	TWA	0,0002 mg/m <sup>3</sup>	
Copper (CAS 7440-50-8)	TWA	0,2 mg/m <sup>3</sup>	
Nickel (CAS 7440-02-0)	TWA	0,25 mg/m <sup>3</sup>	
Zirconium (CAS 7440-67-7)	STEL	10 mg/m <sup>3</sup>	
	TWA	5 mg/m <sup>3</sup>	

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

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	1 mg/m <sup>3</sup>	Respirable fraction.
Beryllium (CAS 7440-41-7)	TWA	0,00005 mg/m <sup>3</sup>	Inhalable fraction.
Copper (CAS 7440-50-8)	TWA	1 mg/m <sup>3</sup>	Dust and mist.
		0,2 mg/m <sup>3</sup>	Fume.
Nickel (CAS 7440-02-0)	TWA	1,5 mg/m <sup>3</sup>	Inhalable fraction.
Zirconium (CAS 7440-67-7)	STEL	10 mg/m <sup>3</sup>	
	TWA	5 mg/m <sup>3</sup>	

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

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	STEL	3 mg/m <sup>3</sup>	Fume.
		10 mg/m <sup>3</sup>	Dust.
		3 mg/m <sup>3</sup>	Dust.
Beryllium (CAS 7440-41-7)	TWA	1 mg/m <sup>3</sup>	Fume.
		0,002 mg/m <sup>3</sup>	
		0,002 mg/m <sup>3</sup>	
Copper (CAS 7440-50-8)	STEL	1,5 mg/m <sup>3</sup>	Dust.
		0,2 mg/m <sup>3</sup>	Fume.
		0,5 mg/m <sup>3</sup>	Dust.
Nickel (CAS 7440-02-0)	STEL	0,5 mg/m <sup>3</sup>	
		0,1 mg/m <sup>3</sup>	
		0,1 mg/m <sup>3</sup>	
Zirconium (CAS 7440-67-7)	STEL	10 mg/m <sup>3</sup>	
	TWA	5 mg/m <sup>3</sup>	

**Slovakia. OELs for carcinogens and mutagens. Regulation No. 46/2002 on carcinogenic and mutagenic substances**

Components	Type	Value	Form
Nickel (CAS 7440-02-0)	TWA	0,05 mg/m <sup>3</sup>	Inhalable fraction.

**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.
Copper (CAS 7440-50-8)	TWA	1 mg/m <sup>3</sup>	Inhalable fraction.
		0,2 mg/m <sup>3</sup>	Respirable fume.
Zirconium (CAS 7440-67-7)	TWA	1 mg/m <sup>3</sup>	

**Slovenia. CMR. Protection of workers from exposure to carcinogen and mutagen agents (ULRS 101/2005, as amended)**

Components	Type	Value
Beryllium (CAS 7440-41-7)	TWA	0,002 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)**

Components	Type	Value	Form
Beryllium (CAS 7440-41-7)	TWA	0,002 mg/m <sup>3</sup>	Inhalable fraction.
Copper (CAS 7440-50-8)	TWA	1 mg/m <sup>3</sup>	Inhalable fraction.
		0,1 mg/m <sup>3</sup>	Respirable fume.
Nickel (CAS 7440-02-0)	TWA	0,5 mg/m <sup>3</sup>	Inhalable fraction.
Zirconium (CAS 7440-67-7)	TWA	1 mg/m <sup>3</sup>	Inhalable dust.

**Spain. Carcinogens and Mutagens with Limit Values (Table 2)**

Components	Type	Value
Beryllium (CAS 7440-41-7)	TWA	0,0002 mg/m <sup>3</sup>

**Spain. Occupational Exposure Limits**

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.
Beryllium (CAS 7440-41-7)	TWA	0,0002 mg/m <sup>3</sup>	
Copper (CAS 7440-50-8)	TWA	1 mg/m <sup>3</sup>	Dust and mist.
		0,2 mg/m <sup>3</sup>	Fume.
Nickel (CAS 7440-02-0)	TWA	1 mg/m <sup>3</sup>	
Zirconium (CAS 7440-67-7)	STEL	10 mg/m <sup>3</sup>	
	TWA	5 mg/m <sup>3</sup>	

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

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.
Beryllium (CAS 7440-41-7)	TWA	0,002 mg/m <sup>3</sup>	Total dust.
Copper (CAS 7440-50-8)	TWA	0,01 mg/m <sup>3</sup>	Respirable dust.
Nickel (CAS 7440-02-0)	TWA	0,5 mg/m <sup>3</sup>	Total dust.

**Switzerland. SUVA Grenzwerte am Arbeitsplatz**

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	3 mg/m <sup>3</sup>	Respirable fraction.
Beryllium (CAS 7440-41-7)	TWA	0,002 mg/m <sup>3</sup>	Inhalable fraction.
Copper (CAS 7440-50-8)	STEL	0,2 mg/m <sup>3</sup>	Inhalable fraction.
	TWA	0,1 mg/m <sup>3</sup>	Inhalable fraction.
Nickel (CAS 7440-02-0)	TWA	0,5 mg/m <sup>3</sup>	Inhalable fraction.
Zirconium (CAS 7440-67-7)	TWA	5 mg/m <sup>3</sup>	Inhalable fraction.

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

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.
Beryllium (CAS 7440-41-7)	TWA	0,002 mg/m <sup>3</sup>	
Copper (CAS 7440-50-8)	STEL	2 mg/m <sup>3</sup>	Inhalable dusts and mists.
	TWA	1 mg/m <sup>3</sup>	Inhalable dusts and mists.
		0,2 mg/m <sup>3</sup>	Fume.
Nickel (CAS 7440-02-0)	TWA	0,5 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.**

Components	Value	Determinant	Specimen	Sampling Time
Nickel (CAS 7440-02-0)	0,077 µmol/mmol	Nickel	Creatinine in urine	*
	0,04 mg/g	Nickel	Creatinine in urine	*

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

**Finland. HTP-arvot, App 2., Biological Limit Values, (BRA/BGV), Social Affairs and Ministry of Health**

Components	Value	Determinant	Specimen	Sampling Time
Nickel (CAS 7440-02-0)	0,1 µmol/l	Nickel	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**

Components	Value	Determinant	Specimen	Sampling Time
Nickel (CAS 7440-02-0)	0,02 mg/g	Nickel	Creatinine in urine	*
	0,038 µmol/mmol	Nickel	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.

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

Components	Value	Determinant	Specimen	Sampling Time
Aluminium (CAS 7429-90-5)	60 µg/g	Aluminium	Creatinine in urine	*
Nickel (CAS 7440-02-0)	45 µg/l	Nickel	Urine	*

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

**Recommended monitoring procedures**

**VENTILATION:** Good general ventilation (typically 10 air changes per hour) 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.

Whenever possible, the use of local exhaust ventilation or other engineering controls is the preferred method of controlling exposure to airborne particulate. Where utilized, exhaust inlets to the ventilation system must be positioned as close as possible to the source of airborne generation. Avoid disruption of the airflow in the area of a local exhaust inlet by equipment such as a man-cooling fan. Check ventilation equipment regularly to ensure it is functioning properly. Provide training on the use and operation of ventilation to all users. Use qualified professionals to design and install ventilation systems.

**WORK PRACTICES:** Develop work practices and procedures that prevent particulate from coming in contact with worker skin, hair, or personal clothing. If work practices and/or procedures are ineffective in controlling airborne exposure or visual particulate from deposition on skin, hair, or clothing, provide appropriate cleaning/washing facilities. Procedures should be written that clearly communicate the facility's requirements for protective clothing and personal hygiene. These clothing and personal hygiene requirements help keep particulate from being spread to non-production areas or from being taken home by the worker. Never use compressed air to clean work clothing or other surfaces.

Fabrication processes may leave a residue of particulate on the surface of parts, products or equipment that could result in employee exposure during subsequent material handling activities. As necessary, clean loose particulate from parts between processing steps. As a standard hygiene practice, wash hands before eating or smoking.

**WET METHODS:** Machining operations are usually performed under a liquid lubricant/coolant flood which assists in reducing airborne particulate. However, the cycling through of machine coolant containing finely divided particulate in suspension can result in the concentration building to a point where the particulate may become airborne during use. Certain processes such as sanding and grinding may require complete hooded containment and local exhaust ventilation. Prevent coolant from splashing onto floor areas, external structures or operators' clothing. Utilize a coolant filtering system to remove particulate from the coolant.

**HOUSEKEEPING:** Use vacuum and wet cleaning methods for particulate removal from surfaces. Be certain to de-energize electrical systems, as necessary, before beginning wet cleaning. Use vacuum cleaners with high efficiency particulate air (HEPA). Do not use compressed air, brooms, or conventional vacuum cleaners to remove particulate from surfaces as this activity can result in elevated exposures to airborne particulate. Follow the manufacturer's instructions when performing maintenance on HEPA filtered vacuums used to clean hazardous materials.

**Derived no effect levels (DNELs)**

Not available.

**Predicted no effect concentrations (PNECs)**

Not available.

**8.2. Exposure controls  
Appropriate engineering controls**

Good general ventilation (typically 10 air changes per hour) 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. Whenever possible, the use of local exhaust ventilation or other engineering controls is the preferred method of controlling exposure to airborne particulate. Where utilized, exhaust inlets to the ventilation system must be positioned as close as possible to the source of airborne generation. Avoid disruption of the airflow in the area of a local exhaust inlet by equipment such as a man-cooling fan. Check ventilation equipment regularly to ensure it is functioning properly. Provide training on the use and operation of ventilation to all users. Use qualified professionals to design and install ventilation systems.

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

**General information**

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

**Eye/face protection**

If contact is likely, safety glasses with side shields are recommended. Wear approved safety glasses, goggles, face shield and/or welder's helmet when risk of eye injury is present, particularly during operations that generate dust, mist or fume.

**Skin protection**

<b>- Hand protection</b>	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. Wear gloves to prevent contact with particulate or solutions. Wear gloves to prevent metal cuts and skin abrasions during handling.
<b>- Other</b>	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. Protective overgarments or work clothing must be worn by persons who may become contaminated with particulate during activities. Skin contact with this material may cause, in some sensitive individuals, an allergic dermal response. Particulate that becomes lodged under the skin has the potential to induce sensitization and skin lesions.
<b>Respiratory protection</b>	Wear positive pressure self-contained breathing apparatus (SCBA). When airborne exposures exceed or have the potential to exceed the occupational exposure limits, approved respirators must be used as specified by an Industrial Hygienist or other qualified professional. Respirator users must be medically evaluated to determine if they are physically capable of wearing a respirator. Quantitative and/or qualitative fit testing and respirator training must be satisfactorily completed by all personnel prior to respirator use. Users of tight fitting respirators must be clean shaven on those areas of the face where the respirator seal contacts the face. Use pressure-demand airline respirators when performing jobs with high potential exposures such as changing filters in a baghouse air cleaning device.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>Hygiene measures</b>	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.
<b>Environmental exposure controls</b>	Environmental manager must be informed of all major releases.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	Solid.
<b>Form</b>	Various shapes.
<b>Colour</b>	Metallic.
<b>Odour</b>	Not available.
<b>Odour threshold</b>	Not applicable.
<b>pH</b>	Not applicable.
<b>Melting point/freezing point</b>	660 °C (1220 °F) estimated
<b>Initial boiling point and boiling range</b>	2327 °C (4220,6 °F) estimated
<b>Flash point</b>	Not applicable.
<b>Evaporation rate</b>	Not applicable.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not applicable.
<b>Flammability limit - upper (%)</b>	Not applicable.
<b>Explosive limit - lower (%)</b>	Not applicable.
<b>Explosive limit – upper (%)</b>	Not applicable.
<b>Vapour pressure</b>	0,38 hPa estimated
<b>Vapour density</b>	Not applicable.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Not applicable.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not applicable.
<b>Decomposition temperature</b>	Not applicable.

<b>Viscosity</b>	Not applicable.
<b>Explosive properties</b>	Not explosive.
<b>Oxidising properties</b>	Not oxidising.

## 9.2. Other information

<b>Density</b>	7,31 g/cm <sup>3</sup> estimated
<b>Specific gravity</b>	7,31 estimated

## SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>10.2. Chemical stability</b>	Material is stable under normal conditions.
<b>10.3. Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>10.4. Conditions to avoid</b>	Contact with incompatible materials.
<b>10.5. Incompatible materials</b>	Strong acids.
<b>10.6. Hazardous decomposition products</b>	Irritating and/or toxic fumes and gases may be emitted upon the product's decomposition.

## SECTION 11: Toxicological information

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

### Information on likely routes of exposure

<b>Inhalation</b>	May cause sensitisation by inhalation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause damage to organs (respiratory system) through prolonged or repeated exposure.
<b>Skin contact</b>	May cause an allergic skin reaction.
<b>Eye contact</b>	Harmful in contact with eyes.
<b>Ingestion</b>	Toxic if swallowed.

**Symptoms** Respiratory disorder.

### 11.1. Information on toxicological effects

<b>Acute toxicity</b>	May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction.
<b>Skin corrosion/irritation</b>	Not likely, due to the form of the product.
<b>Serious eye damage/eye irritation</b>	Harmful in contact with eyes.
<b>Respiratory sensitisation</b>	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>Skin sensitisation</b>	May cause an allergic skin reaction.
<b>Germ cell mutagenicity</b>	Due to lack of data the classification is not possible.
<b>Carcinogenicity</b>	Cancer hazard.

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

Beryllium (CAS 7440-41-7)

#### IARC Monographs. Overall Evaluation of Carcinogenicity

Beryllium (CAS 7440-41-7)

1 Carcinogenic to humans.

Nickel (CAS 7440-02-0)

2B Possibly carcinogenic to humans.

#### Slovenia. CMR. Protection of workers from exposure to carcinogen and mutagen agents (ULRS 101/2005, as amended)

Beryllium (CAS 7440-41-7)

Carcinogenic, Category 1B.

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

Nickel (CAS 7440-02-0)

Carcinogenic, Category 2.

<b>Reproductive toxicity</b>	Not classified.
<b>Specific target organ toxicity - single exposure</b>	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>Specific target organ toxicity - repeated exposure</b>	May cause damage to organs (respiratory system) through prolonged or repeated exposure by inhalation.
<b>Aspiration hazard</b>	Due to lack of data the classification is not possible.
<b>Mixture versus substance information</b>	Not available.
<b>Other information</b>	Symptoms may be delayed.

## SECTION 12: Ecological information

<b>12.1. Toxicity</b>	No toxicity data noted for the ingredient(s).
<b>12.2. Persistence and degradability</b>	No data is available on the degradability of this product.
<b>12.3. Bioaccumulative potential</b>	Not available.
<b>Partition coefficient n-octanol/water (log Kow)</b>	Not available.
<b>Bioconcentration factor (BCF)</b>	Not available.
<b>12.4. Mobility in soil</b>	Not available.
<b>12.5. Results of PBT and vPvB assessment</b>	Not a PBT or vPvB substance or mixture.
<b>12.6. Other adverse effects</b>	Not available.

### 12.7. Additional information

#### Estonia Dangerous substances in groundwater Data

Copper (CAS 7440-50-8)	Copper (Cu) 1000 ug/l Copper (Cu) 15 ug/l
Nickel (CAS 7440-02-0)	Nickel (Ni) 10 ug/l Nickel (Ni) 200 ug/l

#### Estonia Dangerous substances in soil Data

Beryllium (CAS 7440-41-7)	Beryllium (Be) 10 mg/kg Beryllium (Be) 2 mg/kg Beryllium (Be) 50 mg/kg
Copper (CAS 7440-50-8)	Copper (Cu) 100 mg/kg Copper (Cu) 150 mg/kg Copper (Cu) 500 mg/kg
Nickel (CAS 7440-02-0)	Nickel (Ni) 150 mg/kg Nickel (Ni) 50 mg/kg Nickel (Ni) 500 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 (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**

Aluminium (CAS 7429-90-5)

Copper (CAS 7440-50-8)

Nickel (CAS 7440-02-0)

**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**

Beryllium (CAS 7440-41-7)

Nickel (CAS 7440-02-0)

Zirconium (CAS 7440-67-7)

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

Beryllium (CAS 7440-41-7)

**Other EU regulations**

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

Aluminium (CAS 7429-90-5)

Beryllium (CAS 7440-41-7)

Copper (CAS 7440-50-8)

Zirconium (CAS 7440-67-7)

**Other regulations**

The product is classified and labelled in accordance with EC directives or respective national laws. Pregnant women should not work with the product, if there is the least risk of exposure.

**National regulations**

Follow national regulation for work with chemical agents. 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.

**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.

**Training information**

Not available.

**Disclaimer**

This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.

**Other information**

Corrected health hazard classifications.