



PRODUCT INFORMATION 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	Zinc Aluminum Targets
Registration number	-
Document number	G01
Synonyms	None.
Issue date	01-September-2021
Version number	01

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

Identified uses	Industrial uses: Uses of substances as such or in preparations at industrial sites Manufacture of basic metals, including alloys Manufacture of computer, electronic and optical products, electrical equipment General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment Scientific research and development Other: Manufacture of medical and defense equipment
Uses advised against	Consumer uses: Private households (= general public = consumers)

1.3. Details of the supplier of the product information sheet

Supplier

Company name	Materion Advanced Materials
Address	6070 Parkland Boulevard Mayfield Heights, OH 44124 United States
Division	
Telephone	1.216.383.4019
e-mail	ehs@materion.com
Contact person	Theodore Knudson

1.4. Emergency telephone number See Section 16.

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

Hazard summary The products are classified as articles and, as such, do not present a physical or health hazard in the present form. If the products are processed or handled in ways that generate particles (dust, fume, particles or powder) and/or chemical compounds, a potential health hazard could exist and risk management measures must be taken to minimize risk.

2.2. Label elements

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

Contains:	Aluminium
Hazard pictograms	None.
Signal word	None.
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.

Precautionary statements

Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.

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

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Zinc	95 - 100	7440-66-6 231-175-3	-	030-001-01-9	
Classification: Water-React. 3;H261					T
Aluminium	0 - 5	7429-90-5 231-072-3	01-2119529243-45-0056	013-002-00-1	
Classification: -					T

SECTION 4: First aid measures

General information 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 Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact Wash off immediately with plenty of water. Get medical attention if irritation develops and persists.
Eye contact Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention if irritation develops and persists.

Ingestion Drink plenty of water.

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

4.3. Indication of any immediate medical attention and special treatment needed This product is not expected to produce adverse effects under normal conditions of use and appropriate personal hygiene.

SECTION 5: Firefighting measures

General fire hazards No unusual fire or explosion hazards noted.

5.1. Extinguishing media

Suitable extinguishing media Powder. Dry sand.

Unsuitable extinguishing media Water. Carbon dioxide (CO₂).

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 Wear suitable protective equipment.

Special firefighting procedures Move containers from fire area if you can do so without risk.

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 In solid form this material poses no special clean-up problems. For personal protection, see section 8 of the SDS.

For emergency responders Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

6.2. Environmental precautions Avoid release to the environment.

6.3. Methods and material for containment and cleaning up Clean up in accordance with all applicable regulations. Pick up and arrange disposal without creating dust.

6.4. Reference to other sections Not available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment.

7.2. Conditions for safe storage, including any incompatibilities Store in a dry 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 ³	Respirable fraction.
		10 mg/m ³	Inhalable fraction.
	STEL	20 mg/m ³	Inhalable fraction.
		10 mg/m ³	Respirable fraction.

Belgium. Exposure Limit Values

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	1 mg/m ³	Respirable fraction.

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 ³	
		10 mg/m ³	Dust.
		1,5 mg/m ³	Respirable fraction.

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 ³	Respirable dust.
		10 mg/m ³	Total dust.

Czech Republic. OELs. Government Decree 361

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	10 mg/m ³	Dust.

Denmark. Exposure Limit Values

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TLV	5 mg/m ³	Dust and fume.
		5 mg/m ³	Fume.
		2 mg/m ³	Respirable dust and/or fume.

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

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	4 mg/m ³	Fine dust, respiratory fraction
		10 mg/m ³	Total dust.

Finland. Workplace Exposure Limits

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	1,5 mg/m ³	Welding fume.

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

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	VME	5 mg/m ³	Dust.
Regulatory status: Indicative limit (VL)			
		5 mg/m ³	Welding fume.
Regulatory status: Indicative limit (VL)			
		10 mg/m ³	
Regulatory status: 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/m ³	Inhalable dust.
		1,5 mg/m ³	Respirable dust.
Zinc (CAS 7440-66-6)	TWA	2 mg/m ³	Inhalable fraction.
		0,1 mg/m ³	Respirable 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/m ³	Inhalable fraction.
		1,25 mg/m ³	Respirable fraction.

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

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	5 mg/m ³	Inhalable
		10 mg/m ³	Welding fume.
		10 mg/m ³	Respirable.
		10 mg/m ³	Pyrophoric powder.

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	6 mg/m ³	Respirable.

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

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	STEL	10 mg/m ³	Dust.
	TWA	5 mg/m ³	Dust.

Ireland. Occupational Exposure Limits

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	1 ppm	Respirable dust.

Italy. Occupational Exposure Limits

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	1 mg/m ³	Respirable fraction.

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

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	2 mg/m ³	

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

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	5 mg/m ³	Inhalable fraction.
		2 mg/m ³	Respirable fraction.

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TLV	5 mg/m ³	Welding fume.
		5 mg/m ³	Pyrophoric powder.

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

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	2,5 mg/m ³	Inhalable fraction.
		1,2 mg/m ³	Respirable fraction.

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

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	1 mg/m ³	Respirable fraction.

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 ³	Fume.
		10 mg/m ³	Dust.
	TWA	3 mg/m ³	Dust.
		1 mg/m ³	Fume.

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 ³	Inhalable fraction.
		1,5 mg/m ³	Respirable fraction.
Zinc (CAS 7440-66-6)	TWA	2 mg/m ³	Inhalable fraction.
		0,1 mg/m ³	Respirable fraction.

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
Aluminium (CAS 7429-90-5)	TWA	10 mg/m ³	Inhalable fraction.
		1,25 mg/m ³	Respirable fraction.

Spain. Occupational Exposure Limits

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	5 mg/m ³	Welding fume.
		10 mg/m ³	Dust.

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 ³	Total dust.
		2 mg/m ³	Respirable dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	3 mg/m ³	Respirable fraction.

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	4 mg/m ³	Respirable dust.
		10 mg/m ³	Inhalable dust.

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.

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.

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	*

* - 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 (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.

Individual protection measures, such as personal protective equipment

General information Use personal protective equipment as required.

Eye/face protection If contact is likely, safety glasses with side shields are recommended.

Skin protection

- Hand protection Wear protective gloves.

- Other Wear suitable protective equipment.

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

Thermal hazards None known.

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 Inform appropriate managerial or supervisory personnel of all environmental releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state Solid.

Form Solid.

Colour Grey.

Odour None.

Odour threshold Not applicable.

pH Not applicable.

Melting point/freezing point 381 - 420 °C (717,8 - 788 °F)

Initial boiling point and boiling range 907 °C (1664,6 °F) estimated

Flash point Not applicable.

Evaporation rate Not applicable.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not applicable.

Flammability limit - lower (%) temperature Not applicable.

Flammability limit - upper (%)	Not applicable.
Flammability limit - upper (%) temperature	Not applicable.
Explosive limit - lower (%)	Not applicable.
Explosive limit - lower (%) temperature	Not applicable.
Explosive limit – upper (%)	Not applicable.
Explosive limit - upper (%) temperature	Not applicable.
Vapour pressure	124,46 hPa Not applicable.
Vapour density	Not applicable.
Relative density	Not applicable.
Solubility(ies)	
Solubility (water)	Insoluble.
Partition coefficient (n-octanol/water)	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	6,60 - 7,20 g/cm ³
Miscible (water)	Insoluble.
Specific gravity	6,92 Not applicable.

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.
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	Not likely, due to the form of the product.
Skin contact	Not relevant, due to the form of the product.
Eye contact	Not relevant, due to the form of the product.
Ingestion	Not relevant, due to the form of the product.
Symptoms	None known.
11.1. Information on toxicological effects	
Acute toxicity	None known.
Skin corrosion/irritation	Not relevant, due to the form of the product.
Serious eye damage/eye irritation	Not likely, due to the form of the product.
Respiratory sensitisation	Not a respiratory sensitizer.
Skin sensitisation	This product is not expected to cause skin sensitisation.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

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

Not listed.

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

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Mixture versus substance information No information available.

Other information Not available.

SECTION 12: Ecological information

12.1. Toxicity

Product	Species	Test Results	
Zinc Aluminum Targets			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Daphnia	1,4 mg/l, 48 hours estimated
Fish	LC50	Fish	0,2587 mg/l, 96 hours estimated

Components	Species	Test Results	
Zinc (CAS 7440-66-6)			
Aquatic			
<i>Acute</i>			
Fish	LC50	Bony fish superclass (Osteichthyes)	0,52 - 3,59 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

12.2. Persistence and degradability

12.3. Bioaccumulative potential No data available.

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

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil No data available.

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

12.6. Other adverse effects Not available.

12.7. Additional information

Estonia Dangerous substances in soil Data

Zinc (CAS 7440-66-6)

Zinc (Zn) 1000 mg/kg

Zinc (Zn) 200 mg/kg

Zinc (Zn) 500 mg/kg

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
EU waste code	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Special precautions	Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. - 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)

Zinc (CAS 7440-66-6)

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

Zinc (CAS 7440-66-6)

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)

Zinc (CAS 7440-66-6)

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. 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.
Information on evaluation method leading to the classification of mixture	The classification for health and environmental hazards is derived by a combination of calculator methods and test data, if available.
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
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