

**MATERION****1. Chemical and company identification**

Name of chemical (Product name)	Zinc Tin Antimony Targets
Company name	Materion Advanced Materials Germany GmbH
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Reference number	G25

2. Hazards identification**GHS classification**

The product is not classified according to GHS.

GHS label elements

Symbols	None.
Signal words	None.
Hazard statement	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 statement

Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards which do not result in classification

None known.

Supplemental information

For further information, please contact the Product Stewardship Department at +1.216.383.4019.

Main symptoms and emergency overview

Main symptoms	None known.
Emergency overview	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.

3. Composition/information on ingredients

Substance or mixture Mixture

Components	CAS Number	Gazette notification		Concentration (%)
		ENCS no.	ISHL no.	
Zinc	7440-66-6			50 - 99
Tin	7440-31-5			0 - 50
Antimony	7440-36-0			5

Chemical formula Zn (7440-66-6), Sn (7440-31-5), Sb (7440-36-0)

4. First aid measures

If inhaled	Move to fresh air. Call a physician if symptoms develop or persist.
If on skin	Wash off with soap and water. Get medical attention if irritation develops and persists.

If in eyes	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
If swallowed	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	None known.
Protection of first-aid responders	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.
Notes to physician	Treat symptomatically.

5. Fire-fighting measures

Extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide or dry powder.
Extinguishing media to avoid	None known.
Specific hazards	This product is not flammable.
Special fire fighting procedures	Use standard firefighting procedures and consider the hazards of other involved materials. Use water spray to cool unopened containers.
Protection of fire-fighters	Use protective equipment appropriate for surrounding materials.
General fire hazards	No unusual fire or explosion hazards noted.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency measures	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 SDS.
Environmental precautions	Collect spillage.
Methods or materials 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 SDS.
Prevention of secondary hazards	None known.

7. Handling and storage

Handling	
Technical measures (e.g. Local and general ventilation)	Provide adequate ventilation.
Safe handling advice	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices. Use personal protection recommended in Section 8 of the SDS.
Contact avoidance measures	Strong oxidizing agents. For further information, please refer to section 10 of the SDS.
Hygiene measures	Observe any medical surveillance requirements. 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.
Storage	
Safe storage conditions	Store away from incompatible materials (see Section 10 of the SDS).
Safe packaging materials	Store in original tightly closed container.

8. Exposure controls/personal protection

Occupational exposure limits

Japan. OELs - JSOH (Japan Society of Occupational Health: Recommendation of Occupational Exposure Limits)

Material	Type	Value
Zinc Tin Antimony Targets	TWA	0.5 mg/m ³

Japan. OELs - JSOH (Japan Society of Occupational Health: Recommendation of Occupational Exposure Limits)

Components	Type	Value
Antimony (CAS 7440-36-0)	TWA	0.1 mg/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Engineering measures 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. General ventilation normally adequate. Provide eyewash station.

Personal protective equipment

Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Hand protection	Wear gloves to prevent metal cuts and skin abrasions during handling.
Eye protection	Wear safety glasses with side shields (or goggles).
Skin and body protection	Wear suitable protective clothing.

9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Solid.
Color	Grey

Odor None.

Odor threshold Not applicable.

pH Not applicable.

Melting point/Freezing point 449.42 °F (231.9 °C) estimated / Not applicable.

Boiling point, initial boiling point, and boiling range Not applicable.

Flash point Not applicable.

Combustion characteristics (solid, gas) None known.

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.

Vapor pressure Not applicable.

Vapor density Not applicable.

Evaporation rate Not applicable.

Specific gravity	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 (Coefficient of viscosity)	Not applicable.
Other information	
Density	7.16 g/cm ³ estimated
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Relative density	Not applicable.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Acids. Strong oxidizing agents. Chlorine.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Acute toxicity	None known.
Skin corrosion/irritation	Not likely, due to the form of the product.
Serious eye damage/eye irritation	None known.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	Not a skin sensitizer.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classified.
Reproductive toxicity	Not classified.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.

12. Ecological information

Ecotoxicity	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.
Persistence and degradability	No data is available on the degradability of this substance.
Bioaccumulation	No data available.
Mobility in soil	The product is immiscible with water and will spread on the water surface.
Hazardous to the ozone layer	No data available.
Other hazardous effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Dispose in accordance with all applicable regulations.

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.
Local disposal regulations	Contract with a disposal operator licensed by the Law on Disposal and Cleaning. 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. When your own wastewater treatment plant is not available, collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste.

14. Transport information

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

National regulations Follow regulation in section 15 for domestic transportation.

Emergency Response Guide Number 171

15. Regulatory information

Industrial Safety and Health Act

Notifiable substances

ANTIMONY AND ANTIMONY COMPOUNDS (EXCLUDING DIANTIMONY TRIOXIDE) Table 9 Ordinance No. 38 1.0 - 5.0 %

TIN AND TIN COMPOUNDS Table 9 Ordinance No. 322 0 - 50 %

Labeling substances

ANTIMONY AND ANTIMONY COMPOUNDS (EXCLUDING DIANTIMONY TRIOXIDE) 1.0 - 5.0 %

TIN (POWDER) 0 - 50 %

TIN AND TIN COMPOUNDS 0 - 50 %

Poisonous and Deleterious Substances Control Act

Specified poisonous substances

Not regulated.

Poisonous substances

Not regulated.

Deleterious substances

Not regulated.

Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.

Class I specified chemical substances

Not regulated.

Class II specified chemical substances

Not regulated.

Monitoring chemical substances

Not regulated.

Priority Assessment Chemical Substances (PACs)

Not regulated.

Reporting Exempted Substances

Not regulated.

Law concerning Pollutant Release and Transfer Register

Specified class 1 substances (substance name, ordinance number and content)

Not regulated.

Class 1 substances (substance name, ordinance number and content)

ANTIMONY AND ITS COMPOUNDS Ordinance No. 31 5.0 % (Antimony)

Class 2 substances (substance name, ordinance number and content)

Not regulated.

Ship Safety Law, Dangerous Goods Marine Transport and Storage Rule Not regulated.

Air Law, Enforcement Rule Not regulated.

Explosives Control Act
Not regulated.

Water Pollution Control Act
ZINC

Sewage Act
ZINC AND ITS COMPOUNDS (AS ZN) 5 MG/L

16. Other information

Bibliography

ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits
Japan Chemical Industry Association (JCIA) GHS Guideline, June 2012
JIS Z 7252:2014 Classification of chemicals based on "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)"
JIS Z 7253:2012 Hazard communication of chemicals based on GHS - Labelling and Safety Data Sheet (SDS)

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