



# CHEMICAL PRODUCT SAFETY DATA SHEET

Prepared in accordance with GB/T 16483 and GB/T 17519.

**MATERION**

Product name: Bismuth Manganese Targets

Issue date: 11-25-2019

Revision date: 06-28-2024

Version #: 03

SDS No: G13

## SECTION 1 Chemical product and company identification

Chinese name of chemical	铋锰目标
English name of chemical	Bismuth Manganese Targets
Manufacturer/Supplier	Materion Electronic Materials
Address	6070 Parkland Boulevard Mayfield Heights, Ohio 44124 United States
Contact person	Product Stewardship Director
Telephone	1.216.383.4019
e-mail	Materion-PS@materion.com
Emergency telephone number	See Section 16.
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SDS No	G13

## SECTION 2 Hazards identification

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.
GHS hazard categories	Not classified.
Label elements	
Pictograms	None.
Signal word	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. The mixture does not meet the criteria for classification.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Safety storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Physical and chemical hazards	The product is stable and non-reactive under normal conditions of use, storage and transport. No unusual fire or explosion hazards noted.
Health hazards	None known.
Environmental hazards	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.
Supplemental information	For further information, please contact the Product Stewardship Department at +1.216.383.4019.

## SECTION 3 Composition/information on ingredients

Substance/mixture	Mixture
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Chemical name	Concentration (%)	CAS Number
秘 Bismuth	90 - 99.5	7440-69-9
锰 Manganese	0.5 - 10	7439-96-5

## SECTION 4 First aid measures

<b>Inhalation</b>	Move to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Wash off with soap and water. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. Get medical attention if symptoms occur.
<b>Most important symptoms and health effects</b>	Exposure may cause temporary irritation, redness, or discomfort.
<b>Personal protection for first-aid responders</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## SECTION 5 Fire-fighting measures

<b>Extinguishing media</b>	Powder. Dry sand.
<b>Extinguishing media to avoid</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards</b>	None known.
<b>Special fire fighting procedures</b>	Move containers from fire area if you can do so without risk.
<b>Protection of fire-fighters</b>	Wear suitable protective equipment.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.

## SECTION 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	Wear appropriate personal protective equipment.
<b>For emergency responders</b>	Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Collect spillage.

**Clean-up methods and materials and containment measures** The product is immiscible with water and will spread on the water surface. Stop the flow of material, if this is without risk. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS. The product is insoluble in water.

**Prevention of secondary hazards** Not available.

## SECTION 7 Handling and storage

<b>Handling</b>	Avoid prolonged exposure. Observe good industrial hygiene practices.
<b>Storage</b>	Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

## SECTION 8 Exposure controls/personal protection

### Exposure limits

#### Occupational Exposure Limits for Hazardous Agents in the Workplace, Chemical Hazardous Agents (GBZ 2.1-2019)

Components	Type	Value
Manganese (CAS 7439-96-5)	PC-TWA	0.15 mg/m <sup>3</sup>

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Monitoring methods** Follow standard monitoring procedures.

<b>Engineering measures</b>	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.
<b>Personal protective equipment</b>	
<b>Respiratory protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>Hand protection</b>	Wear gloves to prevent metal cuts and skin abrasions during handling.
<b>Eye protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin and body protection</b>	Wear suitable protective clothing.
<b>Hygiene measures</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking.

## SECTION 9 Physical and chemical properties

### Appearance

<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>Color</b>	Silver.
<b>Odor</b>	None.
<b>Odor threshold</b>	Not applicable.
<b>pH</b>	Not applicable.
<b>Melting point/freezing point</b>	519.8 °F (271 °C) estimated / Not applicable.
<b>Boiling point, initial boiling point, and boiling range</b>	Not applicable.
<b>Flash point</b>	Not applicable.
<b>Explosive limit - lower (%)</b>	Not applicable. Not applicable.
<b>Explosive limit - lower (%) temperature</b>	Not applicable.
<b>Explosive limit - upper (%)</b>	Not applicable. Not applicable.
<b>Explosive limit - upper (%) temperature</b>	Not applicable.
<b>Vapor pressure</b>	Not applicable.
<b>Vapor density</b>	Not applicable.
<b>Relative density</b>	Not applicable.
<b>Density</b>	9.55 g/cm <sup>3</sup> estimated
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Insoluble.
<b>Partition coefficient (n-octanol/water)</b>	Not applicable.
<b>Auto-ignition temperature</b>	842 °F (450 °C) estimated Not applicable.
<b>Decomposition temperature</b>	Not applicable.
<b>Evaporation rate</b>	Not applicable.
<b>Flammability (solid, gas)</b>	None known.
<b>Other data</b>	
<b>Explosive properties</b>	Not explosive.
<b>Oxidizing properties</b>	Not oxidizing.
<b>Viscosity</b>	Not applicable.

## SECTION 10 Stability and reactivity

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

## SECTION 11 Toxicological information

<b>Acute toxicity</b>	Not known.
<b>Routes of exposure</b>	Inhalation.
<b>Symptoms</b>	None known.
<b>Skin corrosion/irritation</b>	Not relevant, due to the form of the product.
<b>Serious eye damage/eye irritation</b>	Not likely, due to the form of the product.
<b>Respiratory or skin sensitization</b>	
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitizer</b>	Not a skin sensitizer.
<b>Germ cell mutagenicity</b>	Not classified.
<b>Carcinogenicity</b>	Not classifiable as to carcinogenicity to humans.
<b>Toxic to reproduction</b>	This product is not expected to cause reproductive or developmental effects.
<b>Specific target organ toxicity following single exposure</b>	Not available.
<b>Specific target organ toxicity following repeated exposure</b>	Not available.
<b>Aspiration hazard</b>	Not an aspiration hazard.
<b>Chronic effects</b>	None known.

## SECTION 12 Ecological information

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

## SECTION 13 Disposal considerations

<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>Local disposal regulations</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

## SECTION 14 Transport information

### CNDG

Not regulated as dangerous goods.

**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.

**SECTION 15 Regulatory information****Law of the People's Republic of China on Prevention and Control of Occupational Diseases****Classification of occupational disease hazards**

Manganese and its compounds (CAS 7439-96-5)

**Regulations on the Control over Safety of Dangerous Chemicals****Catalog of Hazardous Chemicals**

Manganese metal powder, wetted with not less than 25% water (CAS 7439-96-5)

**Regulations on Labor Protection in Workplaces Where Toxic Substances Are Used****Directory of Highly Toxic Substances**

Manganese (CAS 7439-96-5)

**Provision on the Environmental Administration of New Chemical Substances****China Inventory of Existing Chemical Substances**

Country(s) or region	Inventory name	On inventory (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)  
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**Other regulations**

This safety data sheet conforms to the following laws, regulations and standards:  
Measures for the Safe Use of Chemicals in Workplaces  
General Rules for Preparation of Precautionary Labels for Chemicals (GB15258-2009 )  
Regulations on Labor Protection in Workplaces Where Toxic Products Are Used  
Packing Symbol of Dangerous Goods(GB190-2009)  
Regulations on the Control over Safety of Dangerous Chemicals  
Safety Data Sheet for Chemical Products - Content and Order of Sections (GB/T 16483-2008)  
Packing - Pictorial Marking for Handling of Goods (GB/T191-2008)

**International regulations****Stockholm Convention**

Not applicable.

**Rotterdam Convention**

Not applicable.

**Montreal Protocol**

Not applicable.

**Kyoto protocol**

Not applicable.

**Basel Convention**

Not applicable.

**SECTION 16 Other information****References**

EPA: AQUIRE database  
GB6944-2012: Classification and Code of Dangerous Goods.  
GB12268-2012: List of Dangerous Goods.  
NLM: Hazardous Substances Data Base  
US. IARC Monographs on Occupational Exposures to Chemical Agents

**Further information**

Transportation Emergency  
Call Chemtrec at:  
US: 800.424.9300  
International: 703.741.5970  
Spain: 900.868.538  
Switzerland: 0800.564.402  
Chemtrec's toll free, mobile-enabled number in Germany – 0800 1817059  
South Korea Toll-free Number – 080-880-0468

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**Revision information**

This document has undergone significant changes and should be reviewed in its entirety.