

1. Identification

Product identifier Barium Tantalate

Other means of identification

SDS number 1DG
 Materion Code 1DG
 CAS number 12047-34-6

Recommended use of the chemical and restrictions on use

Recommended use The chemical(s) listed herein is not found on the Toxic Substance Control Act chemical substance inventory. This chemical may not be used for commercial purposes. This chemical may be used for research and development purposes only as defined at 40 CFR 710.2(y).

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Materion Advanced Chemicals Inc.
Address 407 N. 13th Street
 1316 W. St. Paul Avenue
 Milwaukee, WI 53233
 United States
Telephone 414.212.0257
Website Not available.
E-mail advancedmaterials@materion.com

Emergency phone number Not available.

2. Hazards identification

Physical hazards Not classified.

Health hazards Acute toxicity, oral Category 4
 Acute toxicity, inhalation Category 4

Environmental hazards Not classified.

Label elements



Signal word Warning

Hazard statement Harmful if swallowed. Harmful if swallowed or if inhaled. Harmful if inhaled. The substance does not meet the criteria for classification.

Precautionary statement

Prevention Avoid breathing dust. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Do not eat, drink, or smoke when using this product. Use only outdoors or in a well-ventilated area. Use only outdoors or in a well ventilated area. Observe good industrial hygiene practices.

Response IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. If swallowed: Call a poison center/doctor if you feel unwell. IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. IF SWALLOWED: Rinse mouth. Obtain medical assistance if you feel unwell. If inhaled: Remove person to fresh air and keep comfortable for breathing. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical assistance if you feel unwell. Call a POISON CENTER/doctor if you feel unwell. Call a poison center/doctor if you feel unwell. Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. Wash hands after handling.

Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements. Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards which do not result in classification	None known.
Supplemental information	None.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Barium Tantalate		12047-34-6	100

CLP: Regulation No. 1272/2008.

DSD: Directive 67/548/EEC.

M: M-factor

vPvB: very persistent and very bioaccumulative substance.

PBT: persistent, bioaccumulative and toxic substance.

#: This substance has been assigned Community workplace exposure limit(s).

Composition comments The full text for all R- and H-phrases is displayed in section 16.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Move to fresh air. If breathing is difficult, remove 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. Get medical attention immediately. Call a POISON CENTER or doctor/physician if you feel unwell. Call a physician if symptoms develop or persist.
Skin contact	Wash the skin immediately with soap and water. Wash off with soap and water. Rinse skin with water/shower. Get medical attention if irritation develops and persists.
Eye contact	Do not rub eyes. Rinse with water. Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.
Ingestion	If swallowed, seek medical advice immediately and show this container or label. Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately. 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. Get medical advice/attention if you feel unwell. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Treat symptomatically. Oxygen, if needed. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	In case of shortness of breath, give oxygen. 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. Show this safety data sheet to the doctor in attendance. Keep victim under observation. Keep victim warm.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers.

Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep upwind. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials 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. Dike far ahead of spill for later disposal. 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.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Minimize dust generation and accumulation. Avoid breathing dust. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Handle and open container with care. Observe good industrial hygiene practices. Use care in handling/storage.
Conditions for safe storage, including any incompatibilities	CAUTION Store in original tightly closed container. Keep container tightly closed. Store in a well-ventilated place. Keep out of the reach of children. Use care in handling/storage.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Material	Type	Value
Barium Tantalate (CAS 12047-34-6)	TWA	0.5 mg/m3

Biological limit values	No biological exposure limits noted for the ingredient(s).
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. General ventilation normally adequate.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles). If contact is likely, safety glasses with side shields are recommended. Eye wash fountain is recommended. Not normally needed.
Skin protection	
Hand protection	For prolonged or repeated skin contact use suitable protective gloves. Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. Not normally needed.
Other	Wear suitable protective clothing. Use of an impervious apron is recommended.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Chemical respirator with organic vapor cartridge.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations	When using, do not eat, drink or smoke. 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.
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9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Solid.
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.

Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.

Solubility(ies)

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

Auto-ignition temperature	Not available.
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Decomposition temperature	Not available.
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Viscosity	Not available.
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Other information

Explosive properties	Not explosive.
Molecular formula	Ba ₂ O ₃ Ta
Oxidizing properties	Not oxidizing.

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. Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Harmful by inhalation. Harmful if inhaled. Prolonged inhalation may be harmful.
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Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Harmful if swallowed. Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation. Exposure may cause temporary irritation, redness, or discomfort.
Information on toxicological effects	
Acute toxicity	In high concentrations, vapors are anesthetic and may cause headache, fatigue, dizziness and central nervous system effects. Harmful if inhaled. Harmful if swallowed.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation. Due to partial or complete lack of data the classification is not possible.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation. Due to partial or complete lack of data the classification is not possible. None known.
Respiratory or skin sensitization	
Respiratory sensitization	Due to partial or complete lack of data the classification is not possible. Not a respiratory sensitizer.
Skin sensitization	None known. This product is not expected to cause skin sensitization. Due to partial or complete lack of data the classification is not possible.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. Due to partial or complete lack of data the classification is not possible.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. Not classifiable as to carcinogenicity to humans. Due to partial or complete lack of data the classification is not possible.

ACGIH Carcinogens

Barium Tantalate (CAS 12047-34-6)

A4 Not classifiable as a human carcinogen.

Reproductive toxicity	Not classified. This product is not expected to cause reproductive or developmental effects. Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - single exposure	Due to partial or complete lack of data the classification is not possible. Not classified.
Specific target organ toxicity - repeated exposure	Not classified. Due to partial or complete lack of data the classification is not possible.
Aspiration hazard	Due to partial or complete lack of data the classification is not possible. Not an aspiration hazard.
Chronic effects	Not expected to be hazardous by WHMIS criteria. Prolonged inhalation may be harmful.
Further information	This product has no known adverse effect on human health.

12. Ecological information

Ecotoxicity	Contains a substance which causes risk of hazardous effects to the environment. Not expected to be harmful to aquatic organisms. 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 product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Contract with a disposal operator licensed by the Law on Disposal and Cleaning. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Incinerate the material under controlled conditions in an approved incinerator. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. Do not allow this material to drain into sewers/water supplies. Dispose of contents/container in accordance with local/regional/national/international regulations. Dispose in accordance with all applicable 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.
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Local disposal regulations	Dispose in accordance with all applicable regulations.
Waste from residues / unused products	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). Avoid discharge into water courses or onto the ground. Not applicable.
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.

14. Transport information

ADR

Not regulated as dangerous goods.

RID

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.

15. Regulatory information

Safety, health and environmental regulations specific for the product in question

Controlled Narcotic & Psychotropic Precursors List

Not regulated

CWC (Chemical Weapons Convention Act 2000, Schedules 1-3)

Not regulated

Hazardous Chemicals, Schedule 2: Threshold Quantities at an Isolated Storage (Manufacture, Storage and Import of Hazardous Chemical Rules 1989, as amended).

Not regulated

Hazardous Chemicals, Schedule 3: Threshold Quantities in an Industrial Installation (Manufacture, Storage and Import of Hazardous Chemical Rules 1989, as amended).

Not regulated

List of Hazardous Chemicals (Manufacture, Storage and Import of Hazardous Chemical Rules, Schedule I (Part II)).

Not regulated

Ozone Depleting Substances (ODS) (Ozone Depleting Substances (Regulation and Control) Rules 2000, Schedule 1).

Not regulated

International regulations

The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006. Regulation (EU) No 453/2010 amending Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH). Regulation (EC) No 1272/2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Montreal Protocol

Not applicable.

Kyoto protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region

Australia

Inventory name

Australian Inventory of Chemical Substances (AICS)

On inventory (yes/no)*

No

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*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).

16. Other information, including date of preparation or last revision

Issue date	08-06-2019
Version #	01
Further information	HMIS® is a registered trade and service mark of the NPCA.

References

ACGIH
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
EPA: AQUIRE database
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
Korea. Accidental Release Prevention Substances (Presidential Decree of Toxic Chemical Control Law, Executive Order No. 19203)
Korea. Dangerous Substances Threshold Quantity (Presidential Decree of Dangerous Substances Safety Management Act No. 18406, Schedule 1)
Korea. Harmful Substances Prohibited from Manufacturing (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 29)
Korea. Harmful Substances Requiring Permission for Manufacture or Use (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 30)
Korea. Non-Toxic Chemicals List (National Institute of Environment Research (NIER) Public Notice No. 1997-10, as amended)
Korea. Observational Chemicals (Ministerial Decree of TCCL Article 6)
Korea. OELs. Regulation for Permitted Concentration of Hazardous Substances (Ministry of Labor (MOL) Public Notice No. 1986-45, as amended)
Korea. Prohibited Chemical Substances (TCCL Article 11)
Korea. Regulated volatile organic compounds (VOCs) (MOE Notice No. 2001-36, March 8, 2001, as amended)
Korea. Restricted Chemical Substances (TCCL Article 11)
Korea. Toxic Chemical Control Law (TCCL), Existing Chemicals Inventory (KECI)
Korea. Toxic Chemical Control Law (TCCL), pre-1997 List
Korea. Toxic Chemicals (TCCL Article 10)
Korea. Toxic Release Inventory (TRI) Chemicals (TCCL Article 14)
Taiwan. Dangerous Materials (Rules on Hazard Communication of Dangerous Materials and Toxic Materials)
Taiwan. Industrial Precursor Chemicals (Categories and Regulations Governing Inspection and Declaration of Industrial Precursor Chemicals, MOEA Decree No. 87, as amended)
Taiwan. OELs. (Standards on Workplace Atmosphere of Dangerous and Hazardous Materials)
Taiwan. Toxic Chemical Substances (TCS) (List of Toxic Chemical Substances announced by the Environmental Protection Administration)
Taiwan. Toxic Materials (Rules on Hazard Communication of Dangerous Materials and Toxic Materials)
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)
GOST 30333-2007 Chemical production safety passport. General requirements.
GOST 31340-2013 Labeling of chemicals. General requirements.
GOST 32419-2013 Classification of chemical products. General requirements.
GOST 32424-2013 Classification of chemicals for environmental hazards. General principles.
GOST 12.1.007-76 Occupational safety standard system. Noxious substances. Classification and general safety requirements.
GOST 12.1.044-89. Occupational safety standards system. Fire and explosion hazard of substances and materials. Nomenclature of substances and materials. Nomenclature of indices and methods of their determination.
GOST 19433-88. Dangerous goods. Classification and marking.
GOST 12.1.004-91. Occupational safety standards system. Fire safety. General requirements.

Disclaimer

This safety data sheet was prepared in accordance with JIS Z 7253:2012.

Additional information is given in the Material Safety Data Sheet. Materion Advanced Chemicals Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.

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Revision information

Product and Company Identification: Product and Company Identification