

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

Name of chemical (Product name) Arsenic telluride

Company name Materion Advanced Chemicals Inc.

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Materion Code 1BW

Reference number 1BW

2. Hazards identification**GHS classification**

Physical hazards The product is not classified according to GHS.

Health hazards Carcinogenicity Category 1A

Environmental hazards The product is not classified according to GHS.

GHS label elements**Symbols**

Signal words Danger

Hazard statement Toxic if swallowed. May cause cancer. May cause cancer. Toxic if inhaled. May cause cancer. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response IF exposed or concerned: Get medical advice/attention. Specific treatment (see this label). Rinse mouth. Collect spillage.

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

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 None.

Main symptoms and emergency overview

Main symptoms Direct contact with eyes may cause temporary irritation.

Emergency overview Toxic if inhaled. Cancer hazard. Prolonged exposure may cause chronic effects. Dangerous for the environment if discharged into watercourses.

3. Composition/information on ingredients

Substance or mixture Substance

Components	CAS Number	Gazette notification		Concentration (%)
		ENCS no.	ISHL no.	
Arsenic telluride	12044-54-1			100

Chemical formula As₂Te₃ (12044-54-1)

4. First aid measures

If inhaled	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 POISON CENTER or doctor/physician.
If on skin	Remove and isolate contaminated clothing and shoes. Wash off with warm water and soap. Get medical attention if irritation develops and persists. For minor skin contact, avoid spreading material on unaffected skin.
If in eyes	Immediately flush eyes with plenty of water for at least 15 minutes. Continue rinsing. Get medical attention if irritation develops and persists.
If swallowed	Call a physician or poison control center immediately. Rinse mouth thoroughly. 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.
Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Protection of first-aid responders	In case of shortness of breath, give oxygen. IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Keep victim under observation. Keep victim warm.
Notes to physician	Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

5. Fire-fighting measures

Extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Extinguishing media to avoid	None known.
Specific hazards	During fire, gases hazardous to health may be formed.
Special fire fighting procedures	Use water spray to cool unopened containers. Water runoff can cause environmental damage.
Protection of fire-fighters	Wear suitable protective equipment.
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	Immediately evacuate personnel to safe areas. Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Environmental precautions	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground. Contact local authorities in case of spillage to drain/aquatic environment.
Methods or materials for containment and cleaning up	Stop the flow of material, if this is without risk. Collect spillage. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

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 prolonged exposure. Should be handled in closed systems, if possible. 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	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking.
Storage	
Safe storage conditions	Store locked up. 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 - ISHL. (Workplace Environment Assessment Standards)

Material	Type	Value
Arsenic telluride (CAS 12044-54-1)	TLV	0.003 mg/m3

Biological limit values

ACGIH Biological Exposure Indices

Material	Value	Determinant	Specimen	Sampling Time
Arsenic telluride (CAS 12044-54-1)	35 µg/l	Inorganic arsenic, plus methylated metabolites, as As	Urine	*

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

Engineering measures

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. Provide adequate general and local exhaust ventilation.

Personal protective equipment

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Hand protection

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Eye protection

Use personal protective equipment as required.

Skin and body protection

Use personal protective equipment as required. Use of an impervious apron is recommended. Wear protective gloves.

9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Solid.
Color	Not available.

Odor Not available.

pH Not available.

Melting point/Freezing point Not available.

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

Flash point Not available.

Combustion characteristics (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.

Specific gravity Not available.

Solubility(ies)

Solubility (water) Not available.

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

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity (Coefficient of viscosity) Not available.

Other information

Explosive properties Not explosive.

Molecular formula As₂Te₃

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.

Conditions to avoid Contact with incompatible materials.

Incompatible materials None known.

Hazardous decomposition products No dangerous reaction known under conditions of normal use.

11. Toxicological information

Acute toxicity Toxic if swallowed. Toxic by inhalation.

Skin corrosion/irritation Due to lack of data the classification is not possible.

Serious eye damage/eye irritation Due to lack of data the classification is not possible.

Respiratory or skin sensitization

Respiratory sensitization Due to lack of data the classification is not possible.

Skin sensitization Due to lack of data the classification is not possible.

Germ cell mutagenicity Due to lack of data the classification is not possible.

Carcinogenicity May cause cancer.

ACGIH Carcinogens

Arsenic telluride (CAS 12044-54-1) A1 Confirmed human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Arsenic telluride (CAS 12044-54-1) 1 Carcinogenic to humans.

Japan Society for Occupational Health: Carcinogen

Arsenic telluride (CAS 12044-54-1) 1 Carcinogenic to humans.

NTP Report on Carcinogens

Arsenic telluride (CAS 12044-54-1) Known To Be Human Carcinogen.

Reproductive toxicity Due to lack of data the classification is not possible.

Specific target organ toxicity - single exposure Due to lack of data the classification is not possible.

Specific target organ toxicity - repeated exposure Due to lack of data the classification is not possible.

Aspiration hazard Due to lack of data the classification is not possible.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulation No data available.

Mobility in soil No data available.

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. This material and its container must be disposed of as hazardous waste. 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

UN number	1557
UN proper shipping name	Arsenic compounds, solid, n.o.s. inorganic, including arsenates, n.o.s.; arsenites, n.o.s.; arsenic sulfides, n.o.s.; and organic compounds of arsenic, n.o.s.
Transport hazard class(es)	
Class	6.1(PGI, II)
Subsidiary risk	-
Label(s)	6.1
Packing group	II
Environmental hazards	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	1557
UN proper shipping name	Arsenic compounds, solid, n.o.s. inorganic, including arsenates, n.o.s.; arsenites, n.o.s.; arsenic sulfides, n.o.s.; and organic compounds of arsenic, n.o.s.
Transport hazard class(es)	
Class	6.1(PGI, II)
Subsidiary risk	-
Label(s)	6.1
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

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

IATA; IMDG



National regulations

Follow regulation in section 15 for domestic transportation.

15. Regulatory information

Industrial Safety and Health Act

Specified substances regulation

Class 2 designated chemical substances

ARSENIC AND ITS COMPOUNDS (EXCLUDING ARSINE, GALLIUM ARSENIDE)

Notifiable substances

Not regulated.

Labeling substances

ARSENIC AND ITS COMPOUNDS (EXCLUDING ARSINE AND GALLIUM ARSENIDE)

Poisonous and Deleterious Substances Control Act

Specified poisonous substances

Not regulated.

Poisonous substances

ARSENIC COMPOUNDS AND PREPARATIONS CONTAINING THEM, EXCLUDING INDIUM ARSENIDE, GALLIUM ARSENIDE, CALCIUM METHANEARSONATE, AND FERRO METHANEARSONATE

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)**

ARSENIC AND ITS INORGANIC COMPOUNDS	Ordinance No. 332	(Arsenic telluride)
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Class 1 substances (substance name, ordinance number and content)

Not regulated.

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

Not regulated.

Ship Safety Law, Dangerous Goods Marine Transport and Storage Rule	Toxic substances
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Air Law, Enforcement Rule	Toxic substances
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Explosives Control Act

Not regulated.

Waste Management and Public Cleansing Act

DUST CONTAINING ARSENIC AND ITS COMPOUNDS
 SLUDGE, SPENT ACID, AND WASTE ALKALI CONTAINING ARSENIC AND ITS COMPOUNDS

Water Pollution Control Act

ARSENIC AND ITS COMPOUNDS (TOTAL AS)

Sewage Act

ARSENIC AND ITS COMPOUNDS (AS AS) 0.1 MG/L

16. Other information**Bibliography**

ACGIH
 ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
 EPA: ACQUIRE 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
 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)

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

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