



SAFETY DATA SHEET

MATERION

1. Identification

Product identifier Arsenic acid

Other means of identification

SDS number 1AB

Materion Code 1AB

CAS number 7778-39-4

Synonyms ARSENIC ACID

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

E-mail advancedmaterials@materion.com

Contact person Laura Hamilton

Emergency phone number Chemtrec 800.424.9300

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Acute toxicity, oral	Category 2
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 1A
Reproductive toxicity	Category 2
Specific target organ toxicity, repeated exposure	Classification not possible

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 1

Hazardous to the aquatic environment, long-term hazard Category 1

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Fatal if swallowed. May cause cancer. Causes severe skin burns and eye damage. Causes serious eye damage. Toxic if inhaled. Suspected of causing genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. 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. Do not breathe mist/vapors. Do not breathe dust/fume/gas/mist/vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response

Do NOT induce vomiting. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed or concerned: Get medical advice/attention. Wash contaminated clothing before reuse. 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.

Hazard(s) not otherwise classified (HNOC)

None known.

Supplemental information

For further information, please contact the Product Stewardship Department at +1.800.862.4118.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
arsenic acid	ARSENIC ACID	7778-39-4	100

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician if symptoms develop or persist.

Skin contact

Take off immediately all contaminated clothing. Rinse skin with water/shower. Chemical burns must be treated by a physician. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse. Wash clothing separately before reuse. Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. Continue to rinse for at least 15 minutes and seek medical attention.

Eye contact

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 immediately. Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance. If medical assistance is not immediately available, flush an additional 15 minutes.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. If the material is swallowed, get immediate medical attention or advice -- Give several glasses of water or milk. Do not induce vomiting. 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. DO NOT induce vomiting. Get medical attention immediately. Never give anything by mouth to an unconscious person.

Most important symptoms/effects, acute and delayed

Burning pain and severe corrosive skin damage. Causes serious eye damage. Corrosive effects. Permanent eye damage including blindness could result. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information

IF exposed or concerned: Get medical advice/attention. 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.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	None known.
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	Use water spray to cool unopened containers. Water runoff can cause environmental damage.
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. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapors. Avoid inhalation of dust. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. Avoid contact with skin and eyes.
Methods and materials for containment and cleaning up	<p>This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways.</p> <p>Large Spills: Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.</p>
Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist/vapors. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Avoid exposure - obtain special instructions before use. Store in a cool, dry place out of direct sunlight. Use appropriate container to avoid environmental contamination. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. ACGIH Threshold Limit Values

Material	Type	Value
arsenic acid (CAS 7778-39-4)	TWA	0.01 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Material	Type	Value
arsenic acid (CAS 7778-39-4)	Ceiling	0.002 mg/m3

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

Material	Type	Value
arsenic acid (CAS 7778-39-4)	PEL	0.01 mg/m3
	TWA	0.005 mg/m3

Biological limit values**ACGIH Biological Exposure Indices**

Material	Value	Determinant	Specimen	Sampling Time
arsenic acid (CAS 7778-39-4)	35 µg/l	Inorganic arsenic, plus methylated metabolites, as As	Urine	*

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

Exposure guidelines**US NIOSH Pocket Guide to Chemical Hazards: Skin designation**

arsenic acid (CAS 7778-39-4)

Can be absorbed through the skin.

Appropriate engineering controls

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. Ensure adequate ventilation, especially in confined areas. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. Protective overgarments or work clothing must be worn by persons who may become contaminated with particulate during activities. Apron and long sleeves are recommended.

Respiratory protection

Chemical respirator with organic vapor cartridge and full facepiece. When airborne exposures exceed or have the potential to exceed the occupational exposure limits, approved respirators must be used as specified by an Industrial Hygienist or other qualified professional. Respirator users must be medically evaluated to determine if they are physically capable of wearing a respirator. Quantitative and/or qualitative fit testing and respirator training must be satisfactorily completed by all personnel prior to respirator use. Users of tight fitting respirators must be clean shaven on those areas of the face where the respirator seal contacts the face. Use pressure-demand airline respirators when performing jobs with high potential exposures such as changing filters in a baghouse air cleaning device.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Observe any medical surveillance requirements. 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. 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. Do not eat, drink or smoke when using the product.

9. Physical and chemical properties

Appearance	Solid.
Physical state	Solid, Liquid.
Form	Liquid.
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	95 °F (35 °C)
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	< 0.0000001 kPa (77 °F (25 °C))
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.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	2.20 g/cm ³ estimated
Explosive properties	Not explosive.
Molecular formula	As-H3-O4
Molecular weight	141.94 g/mol
Oxidizing properties	Not oxidizing.
Specific gravity	2.2

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	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.
Incompatible materials	Avoid contact with acids. Strong oxidizing agents. Metals.

Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation Toxic if inhaled. May cause damage to organs through prolonged or repeated exposure by inhalation.

Skin contact Causes severe skin burns and eye damage.

Eye contact Causes serious eye damage.

Ingestion Fatal if swallowed. Causes digestive tract burns.

Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity Fatal if swallowed. Toxic if inhaled.

Skin corrosion/irritation Causes severe skin burns and eye damage.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization May cause serious chemical burns to the skin.

Germ cell mutagenicity Suspected of causing genetic defects.

Carcinogenicity Cancer hazard.

IARC Monographs. Overall Evaluation of Carcinogenicity

arsenic acid (CAS 7778-39-4) 1 Carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

arsenic acid (CAS 7778-39-4) Cancer

US. National Toxicology Program (NTP) Report on Carcinogens

arsenic acid (CAS 7778-39-4) Known To Be Human Carcinogen.

Reproductive toxicity Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure May cause damage to organs through prolonged or repeated exposure.

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

Chronic effects Prolonged inhalation may be harmful. Causes damage to organs through prolonged or repeated exposure. Prolonged exposure may cause chronic effects.

12. Ecological information

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

Product	Species	Test Results
arsenic acid (CAS 7778-39-4)		
Aquatic		
Fish	LC50 Chinook salmon (Oncorhynchus tshawytscha)	55.4 - 79.8 mg/l, 96 hours

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 Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. 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.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

US RCRA Hazardous Waste P List: Reference

arsenic acid (CAS 7778-39-4) P010

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).

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

DOT

UN number UN1554
UN proper shipping name Arsenic acid, solid, MARINE POLLUTANT
Transport hazard class(es)
Class 6.1
Subsidiary risk -
Label(s) 6.1
Packing group II
Environmental hazards
Marine pollutant Yes
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions IB8, IP2, IP4, T3, TP33
Packaging exceptions 153
Packaging non bulk 212
Packaging bulk 242

IATA

UN number UN1554
UN proper shipping name Arsenic acid, solid
Transport hazard class(es)
Class 6.1(PGI, II)
Subsidiary risk -
Packing group II
Environmental hazards No.
ERG Code 6L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Other information
Passenger and cargo aircraft Allowed with restrictions.
Cargo aircraft only Allowed with restrictions.

IMDG

UN number UN1554
UN proper shipping name ARSENIC ACID, SOLID

Transport hazard class(es)

Class	6.1(PGI, II)
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-A, S-A
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

DOT; IATA; IMDG



Marine pollutant



15. Regulatory information

US federal regulations

All components are on the U.S. EPA TSCA Inventory List.
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

arsenic acid (CAS 7778-39-4) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

arsenic acid (CAS 7778-39-4) Cancer
Liver
Skin
Respiratory irritation
Nervous system
Acute toxicity

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories
Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation
Germ cell mutagenicity
Carcinogenicity
Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
arsenic acid	7778-39-4	100

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

arsenic acid (CAS 7778-39-4)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)
Priority pollutant
Toxic pollutant

Safe Drinking Water Act (SDWA)
Contains component(s) regulated under the Safe Drinking Water Act.

US state regulations

WARNING: This product contains a chemical known to the State of California to cause cancer.

California Proposition 65



WARNING: This product can expose you to arsenic acid, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

arsenic acid (CAS 7778-39-4)

Listed: February 27, 1987

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

arsenic acid (CAS 7778-39-4)

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

Issue date 08-26-2013

Revision date 07-17-2019

Version # 07

References
ACGIH
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents

Disclaimer

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. Additional information is given in the Material Safety Data Sheet.
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