



# SAFETY DATA SHEET

**MATERION**

## 1. Identification

Product identifier	Calcium Arsenate $\text{Ca}_3(\text{AsO}_4)_2$ Powder	
Other means of identification		
SDS number	1GH	
Materion Code	1GH	
CAS number	7778-44-1	
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
	Acute toxicity, inhalation	Category 3
	Carcinogenicity	Category 1
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 serious eye irritation. Toxic if inhaled. May cause cancer. Suspected of damaging fertility or the unborn child. Causes damage to organs ( ). Causes damage to organs (respiratory system) through prolonged or repeated exposure. 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 dust. Wear eye/face protection. Avoid breathing dust. 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 swallowed: Immediately call a poison center/doctor. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor. Specific treatment (see this label). Rinse mouth. If eye irritation persists: Get medical advice/attention. Collect spillage.

<b>Storage</b>	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Hazard(s) not otherwise classified (HNOC)</b>	None known.
<b>Supplemental information</b>	None.

### 3. Composition/information on ingredients

#### Substances

Chemical name	Common name and synonyms	CAS number	%
Ca3(AsO4)2		7778-44-1	90 - 100

### 4. First-aid measures

<b>Inhalation</b>	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.
<b>Skin contact</b>	Wash off with soap and water. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Do not rub eyes. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Call a physician or poison control center immediately. Rinse mouth. 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.
<b>Most important symptoms/effects, acute and delayed</b>	Decrease in motor functions. Behavioral changes. Narcosis. Jaundice. Liver enlargement. Proteinuria. Dusts may irritate the respiratory tract, skin and eyes. Irritation of eyes and mucous membranes. Skin irritation. Rash. Defatting of the skin. Edema. Prolonged exposure may cause chronic effects.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). 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. Show this safety data sheet to the doctor in attendance.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
<b>Unsuitable extinguishing media</b>	None known.
<b>Specific hazards arising from the chemical</b>	During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Wear suitable protective equipment.
<b>Fire fighting equipment/instructions</b>	Use water spray to cool unopened containers. Water runoff can cause environmental damage.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Immediately evacuate personnel to safe areas. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. 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). This product is miscible in water. 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. Absorb in vermiculite, dry sand or earth and place into containers. Collect dust using a vacuum cleaner equipped with HEPA filter.

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

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. Inform appropriate managerial or supervisory personnel of all environmental releases.

## 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. Minimize dust generation and accumulation. Avoid breathing dust. Avoid contact during pregnancy/while nursing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains. Observe good industrial hygiene practices.

### Conditions for safe storage, including any incompatibilities

Store locked up. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place.

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. ACGIH Threshold Limit Values

Material	Type	Value
Ca <sub>3</sub> (AsO <sub>4</sub> ) <sub>2</sub> (CAS 7778-44-1)	TWA	0.01 mg/m <sup>3</sup>

#### US. NIOSH: Pocket Guide to Chemical Hazards

Material	Type	Value
Ca <sub>3</sub> (AsO <sub>4</sub> ) <sub>2</sub> (CAS 7778-44-1)	Ceiling	0.002 mg/m <sup>3</sup>

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

Material	Type	Value
Ca <sub>3</sub> (AsO <sub>4</sub> ) <sub>2</sub> (CAS 7778-44-1)	PEL	0.01 mg/m <sup>3</sup>
	TWA	0.005 mg/m <sup>3</sup>

## Biological limit values

### ACGIH Biological Exposure Indices

Material	Value	Determinant	Specimen	Sampling Time
Ca <sub>3</sub> (AsO <sub>4</sub> ) <sub>2</sub> (CAS 7778-44-1)	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

Ca<sub>3</sub>(AsO<sub>4</sub>)<sub>2</sub> (CAS 7778-44-1)

Can be absorbed through the skin.

### 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. If engineering measures are not sufficient to maintain concentrations of dust/particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits. Provide eyewash station.

## Individual protection measures, such as personal protective equipment

### Eye/face protection

Wear eye/face protection. Chemical respirator with organic vapor cartridge, full facepiece, dust and mist filter.

### Skin protection

#### Hand protection

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

#### Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

### Respiratory protection

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Chemical respirator with organic vapor cartridge, full facepiece, dust and mist filter.

### Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

## General hygiene considerations

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.

## 9. Physical and chemical properties

### Appearance

Powder.

### Physical state

Solid.

### Form

Powder Powder.

### 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 < 0.0000001 kPa at 20 °C

Vapor density Not available.

Relative density Not available.

#### Solubility(ies)

Solubility (water) 0.1 g/l at 77°F

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

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

#### Other information

Density 3.62 g/cm<sup>3</sup> estimated

Explosive properties Not explosive.

Molecular formula As-H3-O4.3/2Ca

Molecular weight 398.07 g/mol

Oxidizing properties Not oxidizing.

Specific gravity 3.62

## 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** Hazardous polymerization does not occur.

**Conditions to avoid** Contact with incompatible materials.

**Incompatible materials** None known.

**Hazardous decomposition products** No hazardous decomposition products are known.

## 11. Toxicological information

#### Information on likely routes of exposure

**Inhalation** Toxic if inhaled.

**Skin contact** Dust or powder may irritate the skin.

**Eye contact** Causes serious eye irritation.

**Ingestion** Fatal if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics** Behavioral changes. Decrease in motor functions. Narcosis. Jaundice. Liver enlargement. Proteinuria. Dusts may irritate the respiratory tract, skin and eyes. Skin irritation. Rash. Edema. Defatting of the skin.

#### Information on toxicological effects

**Acute toxicity** Fatal if swallowed. Toxic if inhaled.

Product	Species	Test Results
Ca3(AsO4)2 (CAS 7778-44-1)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rat	2400 mg/kg
<b>Oral</b>		
LD50	Dog	38 mg/kg
	Mouse	794 mg/kg
	Rat	20 mg/kg

\* Estimates for product may be based on additional component data not shown.

<b>Skin corrosion/irritation</b>	Based on available data, the classification criteria are not met.
<b>Serious eye damage/eye irritation</b>	Causes serious eye irritation.
<b>Respiratory or skin sensitization</b>	
<b>Respiratory sensitization</b>	Based on available data, the classification criteria are not met.
<b>Skin sensitization</b>	Based on available data, the classification criteria are not met.
<b>Germ cell mutagenicity</b>	Based on available data, the classification criteria are not met.
<b>Carcinogenicity</b>	Cancer hazard.
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>	
Ca3(AsO4)2 (CAS 7778-44-1)	1 Carcinogenic to humans.
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)</b>	
Ca3(AsO4)2 (CAS 7778-44-1)	Cancer
<b>US. National Toxicology Program (NTP) Report on Carcinogens</b>	
Ca3(AsO4)2 (CAS 7778-44-1)	Known To Be Human Carcinogen.
<b>Reproductive toxicity</b>	Suspected of damaging fertility or the unborn child.
<b>Specific target organ toxicity - single exposure</b>	Causes damage to organs ().
<b>Specific target organ toxicity - repeated exposure</b>	Causes damage to organs () through prolonged or repeated exposure.
<b>Aspiration hazard</b>	Based on available data, the classification criteria are not met.
<b>Chronic effects</b>	Causes damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

## 12. Ecological information

<b>Ecotoxicity</b>	Very toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.
<b>Persistence and degradability</b>	No data is available on the degradability of this product.
<b>Bioaccumulative potential</b>	No data available.
<b>Mobility in soil</b>	No data available.
<b>Other adverse 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.

## 13. Disposal considerations

<b>Disposal instructions</b>	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. 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.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.

<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</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.

## 14. Transport information

### DOT

<b>UN number</b>	UN1573
<b>UN proper shipping name</b>	Calcium arsenate, MARINE POLLUTANT
<b>Transport hazard class(es)</b>	
<b>Class</b>	6.1(PGI, II)
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	6.1
<b>Packing group</b>	II
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	Yes
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Special provisions</b>	IB8, IP2, IP4, T3, TP33
<b>Packaging exceptions</b>	153
<b>Packaging non bulk</b>	212
<b>Packaging bulk</b>	242

### IATA

<b>UN number</b>	UN1573
<b>UN proper shipping name</b>	Calcium arsenate
<b>Transport hazard class(es)</b>	
<b>Class</b>	6.1(PGI, II)
<b>Subsidiary risk</b>	-
<b>Packing group</b>	II
<b>Environmental hazards</b>	No.
<b>ERG Code</b>	6L
<b>Special precautions for user</b>	Not available.
<b>Other information</b>	
<b>Passenger and cargo aircraft</b>	Allowed with restrictions.
<b>Cargo aircraft only</b>	Allowed with restrictions.

### IMDG

<b>UN number</b>	UN1573
<b>UN proper shipping name</b>	CALCIUM ARSENATE, MARINE POLLUTANT
<b>Transport hazard class(es)</b>	
<b>Class</b>	6.1(PGI, II)
<b>Subsidiary risk</b>	-
<b>Packing group</b>	II
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	Yes
<b>EmS</b>	F-A, S-A
<b>Special precautions for user</b>	Not available.

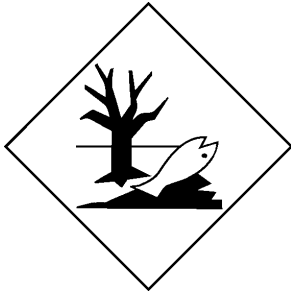
DOT



IATA; IMDG



Marine pollutant



General information

IMDG Regulated Marine Pollutant. DOT Regulated 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)

Ca<sub>3</sub>(AsO<sub>4</sub>)<sub>2</sub> (CAS 7778-44-1) Listed.

### SARA 304 Emergency release notification

CALCIUM ARSENATE (CAS 7778-44-1) 1 LBS

### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Ca<sub>3</sub>(AsO<sub>4</sub>)<sub>2</sub> (CAS 7778-44-1) Cancer  
Liver  
Skin  
Respiratory irritation  
Nervous system  
Acute toxicity



**Superfund Amendments and Reauthorization Act of 1986 (SARA)****SARA 302 Extremely hazardous substance**

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Ca3(AsO4)2	7778-44-1	1		500	10000

**SARA 311/312 Hazardous chemical** Yes

**SARA 313 (TRI reporting)**

Chemical name	CAS number	% by wt.
Ca3(AsO4)2	7778-44-1	90 - 100

**Other federal regulations****Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Ca3(AsO4)2 (CAS 7778-44-1)

**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)** Hazardous substance  
Priority pollutant  
Toxic pollutant

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations**

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

**California Proposition 65**

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

**California Proposition 65 - CRT: Listed date/Carcinogenic substance**

Ca3(AsO4)2 (CAS 7778-44-1)

Listed: February 27, 1987

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

**Issue date** 05-26-2015

**Revision date** 01-10-2018

**Version #** 03

**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. This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.