



SAFETY DATA SHEET

MATERION

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Name of the substance Aluminum Arsenide (AIAs), powder
Identification number 033-002-00-5 (Index number)
Synonyms Aluminum arsenide (AIAs) * Aluminium arsenide
Document number 2FT
Materion Code 2FT
Issue date 16-January-2018
Version number 01

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Not available.
Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

Supplier

Company name Materion Advanced Chemicals Inc.
Address 407 N. 13th Street
1316 W. St. Paul Avenue
Milwaukee, WI 53233
United States
Division Milwaukee
Telephone 414.212.0257
e-mail advancedmaterials@materion.com
Contact person Noreen Atkinson

1.4. Emergency telephone number

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards

Acute toxicity, oral	Category 3	H301 - Toxic if swallowed.
Acute toxicity, inhalation	Category 3	H331 - Toxic if inhaled.
Carcinogenicity	Category 1A	H350 - May cause cancer.

Environmental hazards

Hazardous to the aquatic environment, acute aquatic hazard	Category 1	H400 - Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term aquatic hazard	Category 1	

Hazard summary Not available.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Aluminum arsenide

Hazard pictograms



Signal word Danger

Hazard statements

H400	Very toxic to aquatic life.
H350	May cause cancer.
H331	Toxic if inhaled.
H301	Toxic if swallowed.

Precautionary statements

Prevention

P273	Avoid release to the environment.
P281	Use personal protective equipment as required.
P270	Do not eat, drink or smoke when using this product.
P264	Wash thoroughly after handling.
P261	Avoid breathing dust.

Response

P301 + P310	IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P330	Rinse mouth.
P391	Collect spillage.

Storage

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
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Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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Supplemental label information

None.

2.3. Other hazards

The Safety Information Sheet Chemicals of hazardous chemical can be obtained through phone, email or on the company website.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Aluminum arsenide	100	22831-42-1 245-255-0	-	033-002-00-5	
Classification:	Acute Tox. 3;H301, Acute Tox. 3;H331, Carc. 1A;H350, Aquatic Acute 1;H400				1,A

SECTION 4: First aid measures

General information Not available.

4.1. Description of first aid measures

Inhalation	Consult a physician for specific advice. Remove from contaminated area. Apply artificial respiration if not breathing.
Skin contact	Wash with plenty of soap and water. Get medical attention immediately.
Eye contact	Flush thoroughly with water. If irritation occurs, get medical assistance.
Ingestion	Never give anything by mouth to an unconscious person. Rinse mouth thoroughly. Obtain medical attention and take along these instructions.

4.2. Most important symptoms and effects, both acute and delayed Not available.

4.3. Indication of any immediate medical attention and special treatment needed Not available.

SECTION 5: Firefighting measures

General fire hazards Not available.

5.1. Extinguishing media

Suitable extinguishing media	Not available.
Unsuitable extinguishing media	Water Spray, Fog, CO ₂ , dry chemical, or Alcohol Resistant Foam

5.2. Special hazards arising from the substance or mixture Not available.

5.3. Advice for firefighters

Special protective equipment for firefighters Not available.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Warn everybody of potential hazards and evacuate if necessary. Avoid generation and spreading of dust. Avoid inhalation of dust and vapours. Ventilate well, avoid breathing vapours. Use approved respirator if air contamination is above accepted level.

For emergency responders Wear appropriate protective equipment and clothing during clean-up. Keep unnecessary personnel away.

6.2. Environmental precautions Should be prevented from entering drains. Avoid discharge to the aquatic environment.

6.3. Methods and material for containment and cleaning up Not available.

6.4. Reference to other sections Not available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Not available.

7.2. Conditions for safe storage, including any incompatibilities Not available.

7.3. Specific end use(s) Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. TRK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Material	Type	Value	Form
Aluminum arsenide (CAS 22831-42-1)	STEL	0,4 mg/m ³	Inhalable fraction.
	TWA	0,1 mg/m ³	Inhalable fraction.

Belgium. Exposure Limit Values.

Material	Type	Value
Aluminum arsenide (CAS 22831-42-1)	TWA	0,01 mg/m ³

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Material	Type	Value
Aluminum arsenide (CAS 22831-42-1)	MAC	0,1 mg/m ³

Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended.

Material	Type	Value
Aluminum arsenide (CAS 22831-42-1)	TWA	0,01 mg/m ³

Czech Republic. OELs. Government Decree 361

Material	Type	Value
Aluminum arsenide (CAS 22831-42-1)	Ceiling	0,4 mg/m ³
	TWA	0,1 mg/m ³

Greece. OELs (Decree No. 90/1999, as amended)

Material	Type	Value
Aluminum arsenide (CAS 22831-42-1)	TWA	0,1 mg/m ³

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Material	Type	Value
Aluminum arsenide (CAS 22831-42-1)	Ceiling	0,01 mg/m ³

Ireland. Occupational Exposure Limits

Material	Type	Value
Aluminum arsenide (CAS 22831-42-1)	TWA	0,01 mg/m ³

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Material	Type	Value
Aluminum arsenide (CAS 22831-42-1)	STEL	0,04 mg/m ³
	TWA	0,01 mg/m ³

Norway. Administrative Norms for Contaminants in the Workplace

Material	Type	Value
Aluminum arsenide (CAS 22831-42-1)	TLV	0,01 mg/m ³

Poland. MACs. Regulation regarding maximum permissible concentrations and intensities of harmful factors in the work environment, Annex 1

Material	Type	Value
Aluminum arsenide (CAS 22831-42-1)	TWA	0,01 mg/m ³

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Material	Type	Value
Aluminum arsenide (CAS 22831-42-1)	TWA	0,01 mg/m ³

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Material	Type	Value
Aluminum arsenide (CAS 22831-42-1)	STEL	0,1 mg/m ³
	TWA	0,01 mg/m ³

Slovakia. OELs for carcinogens and mutagens. Regulation No. 46/2002 on carcinogenic and mutagenic substances

Material	Type	Value	Form
Aluminum arsenide (CAS 22831-42-1)	TWA	0,1 mg/m ³	Inhalable fraction.

Spain. Occupational Exposure Limits

Material	Type	Value
Aluminum arsenide (CAS 22831-42-1)	TWA	0,01 mg/m ³

UK. EH40 Workplace Exposure Limits (WELs)

Material	Type	Value
Aluminum arsenide (CAS 22831-42-1)	TWA	0,1 mg/m ³

Biological limit values**Croatia. BLV. Dangerous Substance Exposure Limit Values at Workplace, Annexes 4 (as amended)**

Material	Value	Determinant	Specimen	Sampling time
Aluminum arsenide (CAS 22831-42-1)	70 µg/l	Arsenic	Urine	*
	0,93 µmol/l	Arsenic	Urine	*

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

Finland. HTP-arvot, App 2., Biological Limit Values, (BRA/BGV) , Social Affairs and Ministry of Health

Material	Value	Determinant	Specimen	Sampling time
Aluminum arsenide (CAS 22831-42-1)	70 nmol/l	Inorganic arsenic	Urine	*

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

France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065))

Material	Value	Determinant	Specimen	Sampling time
Aluminum arsenide (CAS 22831-42-1)	0,05 mg/g	Métabolites de l'arsenic inorganique	Creatinine in urine	*

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

Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices

Material	Value	Determinant	Specimen	Sampling time
Aluminum arsenide (CAS 22831-42-1)	0,13 mg/g	Arsenic	Creatinine in urine	*
	0,2 µmol/mmol	Arsenic	Creatinine in urine	*

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

Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4

Material	Value	Determinant	Specimen	Sampling time
Aluminum arsenide (CAS 22831-42-1)	35 µg/l	Arsénico inorgánico más metabolitos metilados como As	Urine	*

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

Switzerland. BAT-Werte (Biological Limit Values in the Workplace as per SUVA)

Material	Value	Determinant	Specimen	Sampling time
Aluminum arsenide (CAS 22831-42-1)	50 µg/l	Anorganisches Arsen und methylierte Metaboliten	Urine	*

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

Recommended monitoring procedures Not available.

Derived no effect levels (DNELs) Not available.

Predicted no effect concentrations (PNECs) Not available.

8.2. Exposure controls

Appropriate engineering controls Observe good industrial hygiene practices.

Individual protection measures, such as personal protective equipment

General information As a standard hygiene practice, wash hands before eating or smoking.

Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

- **Hand protection** Wear gloves to prevent contact with particulate or solutions. Wash hands after handling.

- **Other** Full protective clothing should be worn when handling this product.

Respiratory protection 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 Not available.

Hygiene measures Not available.

Environmental exposure controls Not available.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Appearance	
Physical state	Solid.
Form	Not available.
Colour	Not available.
Odour	Not available.
Odour 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.
Vapour pressure	< 0,0000001 kPa at 25 °C
Vapour 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.
Explosive properties	Not available.
Oxidising properties	Not available.
9.2. Other information	
Molecular formula	AlAs
Molecular weight	101,9 g/mol

SECTION 10: Stability and reactivity

10.1. Reactivity	Not available.
10.2. Chemical stability	Not available.
10.3. Possibility of hazardous reactions	Not available.
10.4. Conditions to avoid	Not available.
10.5. Incompatible materials	Not available.
10.6. Hazardous decomposition products	Not available.

SECTION 11: Toxicological information

General information	Not available.
Information on likely routes of exposure	
Inhalation	Not available.
Skin contact	Not available.
Eye contact	Not available.
Ingestion	Not available.
Symptoms	Not available.
11.1. Information on toxicological effects	
Acute toxicity	No data available.
Skin corrosion/irritation	Not available.

Serious eye damage/eye irritation	Not available.
Respiratory sensitisation	Not available.
Skin sensitisation	Not available.
Germ cell mutagenicity	Not available.

Carcinogenicity

Hungary. 26/2000 Eüm Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)

Aluminum arsenide (CAS 22831-42-1)

IARC Monographs. Overall Evaluation of Carcinogenicity

Aluminum arsenide (CAS 22831-42-1)

1 Carcinogenic to humans.

Reproductive toxicity	Not available.
Specific target organ toxicity - single exposure	Not available.
Specific target organ toxicity - repeated exposure	Not available.
Aspiration hazard	Not available.
Mixture versus substance information	Not available.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity	No toxicity data noted for the ingredient(s).
12.2. Persistence and degradability	Not available.
12.3. Bioaccumulative potential	Not available.
Partition coefficient n-octanol/water (log Kow)	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	Not available.
12.5. Results of PBT and vPvB assessment	Not a PBT or vPvB substance or mixture.
12.6. Other adverse effects	Not available.
12.7. Additional information	

Estonia Dangerous substances in groundwater Data

Aluminum arsenide (CAS 22831-42-1)

Arsenic (As) 100 UG/L
Arsenic (As) 5 UG/L

Estonia Dangerous substances in soil Data

Aluminum arsenide (CAS 22831-42-1)

Arsenic (As) 20 mg/kg
Arsenic (As) 30 mg/kg
Arsenic (As) 50 mg/kg

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Not available.
Contaminated packaging	Not available.
EU waste code	Not available.

SECTION 14: Transport information

ADR

14.1. UN number	UN1557
14.2. 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.
14.3. Transport hazard class(es)	
Class	6.1(PGI, II)
Subsidiary risk	-
Label(s)	6.1
Hazard No. (ADR)	Not available.

Tunnel restriction code Not available.
14.4. Packing group II
14.5. Environmental hazards No.
14.6. Special precautions for user Not available.

RID

14.1. UN number UN1557
14.2. 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.
14.3. Transport hazard class(es)
Class 6.1(PGI, II)
Subsidiary risk -
Label(s) 6.1
14.4. Packing group II
14.5. Environmental hazards No.
14.6. Special precautions for user Not available.

ADN

14.1. UN number UN1557
14.2. 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.
14.3. Transport hazard class(es)
Class 6.1(PGI, II)
Subsidiary risk -
Label(s) 6.1
14.4. Packing group II
14.5. Environmental hazards No.
14.6. Special precautions for user Not available.

IATA

14.1. UN number UN1557
14.2. 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.
14.3. Transport hazard class(es)
Class 6.1(PGI, II)
Subsidiary risk -
Label(s) 6.1
14.4. Packing group II
14.5. Environmental hazards No.
14.6. Special precautions for user Not available.

IMDG

14.1. UN number UN1557
14.2. 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.
14.3. Transport hazard class(es)
Class 6.1(PGI, II)
Subsidiary risk -
Label(s) 6.1
14.4. Packing group II
14.5. Environmental hazards
Marine pollutant No.
EmS Not available.
14.6. Special precautions for user Not available.



SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Aluminum arsenide (CAS 22831-42-1)

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Aluminum arsenide (CAS 22831-42-1)

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Aluminum arsenide (CAS 22831-42-1)

National regulations Not available.

15.2. Chemical safety assessment Not available.

SECTION 16: Other information

List of abbreviations Not available.

Information on evaluation method leading to the classification of mixture Not available.