



# SAFETY DATA SHEET

MATERION

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

### 1.1. Product identifier

<b>Name of the substance</b>	Aluminum Bromide (AlBr <sub>3</sub> )
<b>Identification number</b>	231-779-7 (EC number)
<b>Synonyms</b>	ALUMINUM BROMIDE * ALUMINUM TRIBROMIDE
<b>Document number</b>	1AN
<b>Materion Code</b>	1AN
<b>Issue date</b>	02-October-2017
<b>Version number</b>	02
<b>Revision date</b>	16-March-2018
<b>Supersedes date</b>	02-October-2017

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

<b>Identified uses</b>	Not available.
<b>Uses advised against</b>	None known.

### 1.3. Details of the supplier of the safety data sheet

#### Supplier

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

### 1.4. Emergency telephone number

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

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

##### Health hazards

Acute toxicity, oral	Category 3	H301 - Toxic if swallowed. H301 - Toxic if swallowed.
Skin corrosion/irritation	Category 1B	H314 - Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Category 1	H318 - Causes serious eye damage.

**Hazard summary** Toxic if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage

### 2.2. Label elements

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

**Contains:** Aluminum Bromide (AlBr<sub>3</sub>)

#### Hazard pictograms



**Signal word** Danger

#### Hazard statements

H301	Toxic if swallowed.
H301	Toxic if swallowed.
H314	Causes severe skin burns and eye damage.

H318

Causes serious eye damage.

**Precautionary statements****Prevention**

P264 Wash thoroughly after handling.  
 P270 Do not eat, drink or smoke when using this product.  
 P280 Wear eye protection/face protection.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.

**Response**

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTRE/doctor.  
 P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P321 Specific treatment (see this label).  
 P363 Wash contaminated clothing before reuse.

**Storage**

P405 Store locked up.

**Disposal**

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

**Supplemental label information**

None.

**2.3. Other hazards**

None known.

**SECTION 3: Composition/information on ingredients****3.1. Substances****General information**

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Aluminum Bromide (AlBr <sub>3</sub> )	100	7727-15-3 231-779-7	-	-	
<b>Classification:</b>	Acute Tox. 3;H301, Skin Corr. 1B;H314, Eye Dam. 1;H318				

**List of abbreviations and symbols that may be used above**

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.

**SECTION 4: First aid measures****General information**

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Wash contaminated clothing before reuse.

**4.1. Description of first aid measures**

**Inhalation** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician or poison control centre immediately.

**Skin contact** Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control centre immediately. For minor skin contact, avoid spreading material on unaffected skin.

**Eye contact** Rinse cautiously with water for several minutes. Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control centre immediately. Get medical attention if irritation develops and persists.

**Ingestion** Call a physician or poison control centre immediately. Rinse mouth. 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.

**4.2. Most important symptoms and effects, both acute and delayed**

Corrosive effects. Irritation of eyes and mucous membranes. May cause temporary blindness and severe eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

**4.3. Indication of any immediate medical attention and special treatment needed**

Provide general supportive measures and treat symptomatically. Treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

**SECTION 5: Firefighting measures**

**General fire hazards**

No unusual fire or explosion hazards noted.

**5.1. Extinguishing media**

**Suitable extinguishing media**

Water.

**Unsuitable extinguishing media**

None known.

**5.2. Special hazards arising from the substance or mixture**

Not available.

**5.3. Advice for firefighters**

**Special protective equipment for firefighters**

Wear suitable protective equipment.

**Special firefighting procedures**

In the event of fire, cool tanks with water spray.

**Specific methods**

Cool containers exposed to flames with water until well after the fire is out.

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**

Local authorities should be advised if significant spillages cannot be contained. Immediately evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them.

**For emergency responders**

Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

**6.2. Environmental precautions**

Avoid discharge into drains, water courses or onto the ground.

**6.3. Methods and material for containment and cleaning up**

Stop the flow of material, if this is without risk. Following product recovery, flush area with water.

**6.4. Reference to other sections**

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

Do not get this material in contact with eyes. Do not get this material in contact with skin. Do not taste or swallow. Avoid prolonged exposure. Do not get this material on clothing. When using, do not eat, drink or smoke. Wash hands thoroughly after handling.

**7.2. Conditions for safe storage, including any incompatibilities**

Store locked up. Keep container tightly closed. Store in a cool, dry place out of direct sunlight. Keep out of the reach of children.

**7.3. Specific end use(s)**

Not available.

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**Occupational exposure limits**

**Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work**

Material	Type	Value
Aluminum Bromide (AlBr3) (CAS 7727-15-3)	TWA	2 mg/m3

**Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)**

Material	Type	Value
Aluminum Bromide (AlBr3) (CAS 7727-15-3)	TWA	2 mg/m3

**Finland. Workplace Exposure Limits**

Material	Type	Value
Aluminum Bromide (AlBr3) (CAS 7727-15-3)	TWA	2 mg/m3

**Hungary. OELs. Joint Decree on Chemical Safety of Workplaces**

Material	Type	Value
Aluminum Bromide (AlBr3) (CAS 7727-15-3)	STEL	0,7 mg/m3
	TWA	0,7 mg/m3

**Iceland. OELs. Regulation 154/1999 on occupational exposure limits**

Material	Type	Value
Aluminum Bromide (AlBr3) (CAS 7727-15-3)	TWA	2 mg/m3

**Italy. Occupational Exposure Limits**

Material	Type	Value	Form
Aluminum Bromide (AlBr3) (CAS 7727-15-3)	TWA	1 mg/m3	Respirable fraction.

**Lithuania. OELs. Limit Values for Chemical Substances, General Requirements**

Material	Type	Value
Aluminum Bromide (AlBr3) (CAS 7727-15-3)	TWA	1 mg/m3

**Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)**

Material	Type	Value	Form
Aluminum Bromide (AlBr3) (CAS 7727-15-3)	TWA	1 mg/m3	Total dust.

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Recommended monitoring procedures** Follow standard monitoring procedures.

**Derived no effect levels (DNELs)** Not available.

**Predicted no effect concentrations (PNECs)** Not available.

**8.2. Exposure controls**

**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. Provide eyewash station.

**Individual protection measures, such as personal protective equipment**

**General information** Wear chemical protective equipment that is specifically recommended by the manufacturer. Eye wash fountain is recommended.

**Eye/face protection** Wear eye/face protection.

**Skin protection**

**- Hand protection** Wear protective gloves. Not normally needed.

**- Other** Wear appropriate chemical resistant clothing. Wear protective gloves. It may provide little or no thermal protection. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Respiratory protection** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

**Thermal hazards** Not available.

**Hygiene measures** When using, do not eat, drink or smoke. Do not get in eyes. Do not get this material in contact with skin. Do not get this material on clothing. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practices.

**Environmental exposure controls** Not available.

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

Material name: Aluminum Bromide (AlBr3)

1AN Version #: 02 Revision date: 16-March-2018 Issue date: 02-October-2017

<b>Appearance</b>	
<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>Colour</b>	Not available.
<b>Odour</b>	Not available.
<b>Odour threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	97,5 °C (207,5 °F)
<b>Initial boiling point and boiling range</b>	255 °C (491 °F)
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Vapour pressure</b>	< 0,0000001 kPa at 25 °C
<b>Vapour density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Not available.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Explosive properties</b>	Not available.
<b>Oxidising properties</b>	Not available.
<b>9.2. Other information</b>	
<b>Density</b>	3,20 g/cm <sup>3</sup> estimated
<b>Molecular formula</b>	Al-Br <sub>3</sub>
<b>Molecular weight</b>	266,72 g/mol
<b>Specific gravity</b>	3,2

## SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	Not available.
<b>10.2. Chemical stability</b>	Material is stable under normal conditions.
<b>10.3. Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>10.4. Conditions to avoid</b>	None under normal conditions.
<b>10.5. Incompatible materials</b>	None known.
<b>10.6. Hazardous decomposition products</b>	Hydrogen bromide.

## SECTION 11: Toxicological information

<b>General information</b>	Occupational exposure to the substance or mixture may cause adverse effects.
<b>Information on likely routes of exposure</b>	
<b>Inhalation</b>	May cause irritation to the respiratory system.
<b>Skin contact</b>	Causes severe skin burns.
<b>Eye contact</b>	Causes severe eye burns. Causes serious eye damage.
<b>Ingestion</b>	Toxic if swallowed. Causes digestive tract burns.
<b>Symptoms</b>	Burning pain and severe corrosive skin damage. Permanent eye damage including blindness could result.

### 11.1. Information on toxicological effects

<b>Acute toxicity</b>	Causes severe skin burns and eye damage. Toxic if swallowed.
<b>Skin corrosion/irritation</b>	Causes severe skin burns and eye damage.
<b>Serious eye damage/eye irritation</b>	Causes severe eye burns. Causes serious eye damage.
<b>Respiratory sensitisation</b>	Due to lack of data the classification is not possible.
<b>Skin sensitisation</b>	Due to lack of data the classification is not possible.
<b>Germ cell mutagenicity</b>	Due to lack of data the classification is not possible.
<b>Carcinogenicity</b>	Due to lack of data the classification is not possible.

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

Not listed.

<b>Reproductive toxicity</b>	Due to lack of data the classification is not possible.
<b>Specific target organ toxicity - single exposure</b>	Due to lack of data the classification is not possible.
<b>Specific target organ toxicity - repeated exposure</b>	Due to lack of data the classification is not possible.
<b>Aspiration hazard</b>	Due to lack of data the classification is not possible.
<b>Mixture versus substance information</b>	Not available.
<b>Other information</b>	Not available.

## SECTION 12: Ecological information

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

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

<b>Residual waste</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>	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.
<b>EU waste code</b>	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Disposal methods/information</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.

## SECTION 14: Transport information

### ADR

<b>14.1. UN number</b>	UN1725
<b>14.2. UN proper shipping name</b>	Aluminium bromide, anhydrous
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	8
<b>Subsidiary risk</b>	-

<b>Label(s)</b>	8
<b>Hazard No. (ADR)</b>	80
<b>Tunnel restriction code</b>	E
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Not available.

#### RID

<b>14.1. UN number</b>	UN1725
<b>14.2. UN proper shipping name</b>	Aluminium bromide, anhydrous
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	8
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	8
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Not available.

#### ADN

<b>14.1. UN number</b>	UN1725
<b>14.2. UN proper shipping name</b>	Aluminium bromide, anhydrous
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	8
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	8
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Not available.

#### IATA

<b>14.1. UN number</b>	UN1725
<b>14.2. UN proper shipping name</b>	Aluminium bromide, anhydrous
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	8
<b>Subsidiary risk</b>	-
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	No.
<b>ERG Code</b>	8L
<b>14.6. 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>14.1. UN number</b>	UN1725
<b>14.2. UN proper shipping name</b>	ALUMINIUM BROMIDE, ANHYDROUS
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	8
<b>Subsidiary risk</b>	-
<b>14.4. Packing group</b>	II
<b>14.5. Environmental hazards</b>	
<b>Marine pollutant</b>	No.
<b>EmS</b>	F-A, S-B

**14.6. Special precautions for user** Not available.

**ADN; ADR; IATA; IMDG; RID**



## 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**  
Not listed.

**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**  
Not listed.

**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**  
Not listed.

#### Other 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.

#### National regulations

Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work.

#### 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

## SECTION 16: Other information

**List of abbreviations** Not available.



**Information on evaluation method leading to the classification of mixture**

Not available.

**Disclaimer**

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