



# AZ-TPS VDA PI

## Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)  
Issue date: 6/1/2022 Version: 1.0

### SECTION 1: Identification

#### 1.1. Identification

Product form : Article Product Number: 5045-11S1-251  
Product name : AZ-TPS VDA PI Model Number: RTVDAS-025100

#### 1.2. Recommended use and restrictions on use

Use of the substance/mixture : Thermal insulation / Thermal management

#### 1.3. Supplier

Blueshift Materials  
5 South Spencer Rd  
Spencer, MA 01562  
T (888) 350-7586

#### 1.4. Emergency telephone number

Emergency number : Call CHEMTREC Day or Night  
Within USA and Canada: 1-800-424-9300 or 1-703-527-3887 (24 HOURS)

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

None

#### 2.2. GHS Label elements, including precautionary statements

According to the corresponding national regulations there is no labelling obligation for this product.

#### 2.3. Other hazards which do not result in classification

None

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

### SECTION 3: Composition/Information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

| Name                                       | Product identifier      | %       |
|--------------------------------------------|-------------------------|---------|
| AZ-TPS VDA PI                              | -                       |         |
| Proprietary Polyimide                      | CAS-No.: Not available  | 30 – 40 |
| Vapor Deposited Aluminum on Polyimide film | CAS-No.: Not available  | 30 – 35 |
| Proprietary Silicon Adhesive               | CAS-No.: Not applicable | 27 – 32 |

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The specific chemical\ component identities and/or the exact component percentages of this material may be withheld as trade secrets. This information is made available to health professionals, employees, and designated representatives in accordance with the applicable provisions of 29 CFR 1910.1200 (I)(1). Trace ingredients (if any) are present in < 1% concentration, (< 0.1% for potential carcinogens, mutagen, and reproductive toxicant, respiratory tract and skin sensitizers in addition to oral/ inhalation acute toxicant in category 1 and 2). None of the trace ingredients contribute significant additional hazards at the concentrations that may be present in this product. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalents.

### SECTION 4: First-aid measures

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#### 4.1. Description of first aid measures

|                                       |                                                                                                                                                                                                                                                     |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| First-aid measures after inhalation   | : Remove person to fresh air and keep comfortable for breathing. Not considered a potential route of exposure in its original form.                                                                                                                 |
| First-aid measures after skin contact | : Not expected to present a significant skin hazard under anticipated conditions of normal use. Wash skin with plenty of water.                                                                                                                     |
| First-aid measures after eye contact  | : Not considered a potential route of exposure in its original form. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. |
| First-aid measures after ingestion    | : Ingestion is not considered a potential route of exposure. Call a poison center/doctor/physician if you feel unwell.                                                                                                                              |

#### 4.2. Most important symptoms and effects (acute and delayed)

|                                                     |                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Potential Adverse human health effects and symptoms | : Not expected to present a significant hazard under anticipated conditions of normal use. In case of exposure to dust, vapours, or smoke during processing, such as cutting, grinding, or heating: . May be slightly irritating to eyes, respiratory system and skin. |
| Symptoms/effects after eye contact                  | : Not considered a potential route of exposure in its original form. In case of exposure to dust, vapours, or smoke during processing, such as cutting, grinding, or heating: Mild irritation.                                                                         |

#### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

### SECTION 5: Fire-fighting measures

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#### 5.1. Suitable (and unsuitable) extinguishing media

|                                |                                                                                                      |
|--------------------------------|------------------------------------------------------------------------------------------------------|
| Suitable extinguishing media   | : Adapt extinguishing media to the environment for surrounding fires. Water spray. Dry powder. Foam. |
| Unsuitable extinguishing media | : None known.                                                                                        |

#### 5.2. Specific hazards arising from the chemical

|                                                  |                                      |
|--------------------------------------------------|--------------------------------------|
| Fire hazard                                      | : No data available                  |
| Hazardous decomposition products in case of fire | : Carbon monoxide and carbon dioxide |

#### 5.3. Special protective equipment and precautions for fire-fighters

|                                |                                                                                                                                          |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Protection during firefighting | : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|

### SECTION 6: Accidental release measures

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

##### 6.1.1. For non-emergency personnel

|                      |                                                              |
|----------------------|--------------------------------------------------------------|
| Emergency procedures | : Ventilate spillage area. Avoid contact with skin and eyes. |
|----------------------|--------------------------------------------------------------|

##### 6.1.2. For emergency responders

|                      |                                                                                                                                                             |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protective equipment | : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection". |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|

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### 6.2. Environmental precautions

Avoid release to the environment.

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

Methods for cleaning up : Mechanically recover the product.  
Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment. Avoid dust formation.  
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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

Storage conditions : Store in a well-ventilated place. Keep cool.  
Maximum storage period : 2 years  
Storage temperature : < 77 °F

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

|                                                                    |                                                                                                            |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <b>AZ-TPS VDA PI</b>                                               |                                                                                                            |
| No additional information available                                |                                                                                                            |
| <b>Proprietary Polyimide (Not available)</b>                       |                                                                                                            |
| No additional information available                                |                                                                                                            |
| <b>Proprietary Silicon Adhesive (Not applicable)</b>               |                                                                                                            |
| No additional information available                                |                                                                                                            |
| <b>Vapor Deposited Aluminum on Polyimide film (Not applicable)</b> |                                                                                                            |
| No additional information available                                |                                                                                                            |
| <b>Aluminum Powder (Stabilized) (7429-90-5)</b>                    |                                                                                                            |
| <b>USA – ACGIH – Occupational Exposure Limits</b>                  |                                                                                                            |
| Local name                                                         | Aluminum metal and insoluble compounds                                                                     |
| ACGIH OEL TWA                                                      | 1 mg/m <sup>3</sup> (R – Respirable particulate matter)                                                    |
| Remark (ACGIH)                                                     | TLV® Basis: Pneumoconiosis; LRT irr; neurotoxicity. Notations: A4 (Not classifiable as a Human Carcinogen) |
| Regulatory Reference                                               | ACGIH 2022                                                                                                 |
| <b>USA – OSHA – Occupational Exposure Limits</b>                   |                                                                                                            |
| Local name                                                         | Aluminum Meral (as Al)                                                                                     |
| OSHA PEL TWA [1]                                                   | 15 mg/m <sup>3</sup> (Total dust)<br>5 mg/m <sup>3</sup> (Respirable fraction)                             |
| Regulatory Reference (US – OSHA)                                   | OSHA Annotated Table Z-1                                                                                   |

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

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Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures/Personal protective equipment

|                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hand protection:</b>                                                                                                                                |
| Protective gloves                                                                                                                                      |
| <b>Eye protection:</b>                                                                                                                                 |
| Not expected to present a significant hazard under anticipated conditions of normal use. Where excessive dust may result, wear goggles. Safety glasses |
| <b>Skin and body protection:</b>                                                                                                                       |
| Not expected to present a significant hazard under anticipated conditions of normal use                                                                |
| <b>Respiratory protection:</b>                                                                                                                         |
| Not expected to present a significant hazard under anticipated conditions of normal use                                                                |

#### Personal protective equipment symbol(s):



## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|                                                 |                     |
|-------------------------------------------------|---------------------|
| Physical state                                  | : Solid             |
| Appearance                                      | : Opaque. film.     |
| Color                                           | : Silver. Yellow    |
| Odor                                            | : Odourless         |
| Odor threshold                                  | : No data available |
| pH                                              | : No data available |
| Melting point                                   | : Not applicable    |
| Freezing point                                  | : Not applicable    |
| Boiling point                                   | : No data available |
| Flash point                                     | : > 650 °F          |
| Relative evaporation rate (butyl acetate=1)     | : No data available |
| Flammability (solid, gas)                       | : Non flammable.    |
| Vapor pressure                                  | : No data available |
| Relative vapor density at 20 °C                 | : Not applicable    |
| Relative density                                | : No data available |
| Solubility                                      | : No data available |
| Partition coefficient n-octanol/water (Log Pow) | : No data available |
| Auto-ignition temperature                       | : No data available |
| Decomposition temperature                       | : > 850 °F          |
| Viscosity, kinematic                            | : Not applicable    |
| Viscosity, dynamic                              | : No data available |
| Explosion limits                                | : Not applicable    |
| Explosive properties                            | : No data available |
| Oxidizing properties                            | : No data available |

### 9.2. Other information

No additional information available

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### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

#### 10.2. Chemical stability

Stable under normal conditions.

#### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

#### 10.4. Conditions to avoid

Avoid dust formation.

#### 10.5. Incompatible materials

No data available

#### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. At temperatures above 400 °C carbon monoxide and carbon dioxide.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

| Aluminum Powder (Stabilized) (7429-90-5) |                                                                                                                                      |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| LD50 oral rat                            | >15900 mg/kg Source: ECHA                                                                                                            |
| LC50 Inhalation - Rat                    | >0.888 mg/l air Animal: rat, Animal sex: male, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), Remarks on results: other: |

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Dust or vapor generated during processing such as cutting, grinding, or heating may pose a listed hazard

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified (Conclusive but not sufficient for classification. Product is non-hazardous because all hazardous ingredients are encapsulated within a polymer)

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

| Aluminum Powder (Stabilized) (7429-90-5)         |                                                                                                                                                 |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| LOAEC (inhalation, rat, dust/mist/fume, 90 days) | 0.05 mg/l air Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90 day study)                                         |
| NOAEL (subchronic, oral, animal/male, 90 days)   | 1034 mg/kg body weight Animal: dog, Animal sex: male, Guideline: OECD Guideline 409 (Repeated Dose 90-Day Oral Toxicity Study in Non-Rodents)   |
| NOAEL (subchronic, oral, animal/female, 90 days) | 1087 mg/kg body weight Animal: dog, Animal sex: female, Guideline: OECD Guideline 409 (Repeated Dose 90-Day Oral Toxicity Study in Non-Rodents) |

Aspiration hazard : Not classified

Viscosity, kinematic : Not applicable

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Potential Adverse human health effects and symptoms : Not expected to present a significant hazard under anticipated conditions of normal use. In case of exposure to dust, vapours, or smoke during processing, such as cutting, grinding, or heating: . May be slightly irritating to eyes, respiratory system and skin.

Symptoms/effects after eye contact : Mild eye irritation.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

No additional information available

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

### SECTION 14: Transport information

In accordance with DOT / IMDG / IATA

#### 14.1. UN number

Not regulated for transport

#### 14.2. UN proper shipping name

Proper Shipping Name (DOT) : Not applicable

Proper Shipping Name (IMDG) : Not applicable

Proper Shipping Name (IATA) : Not applicable

#### 14.3. Transport hazard class(es)

##### DOT

Transport hazard class(es) (DOT) : Not applicable

##### IMDG

Transport hazard class(es) (IMDG) : Not applicable

##### IATA

Transport hazard class(es) (IATA) : Not applicable

#### 14.4. Packing group

Packing group (DOT) : Not applicable

Packing group (IMDG) : Not applicable

Packing group (IATA) : Not applicable

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### 14.5. Environmental hazards

Other information : No supplementary information available.

### 14.6. Special precautions for user

#### DOT

No data available

#### IMDG

No data available

#### IATA

No data available

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

All components of this product are listed as Active, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory, except for:

|                                           |                        |          |
|-------------------------------------------|------------------------|----------|
| Proprietary Polyimide                     | CAS-No. Not available  | 30 – 40% |
| Proprietary Silicon Adhesive              | CAS-No. Not applicable | 27 – 32% |
| Vapor eposited Aluminum on Polyimide film | CAS-No. Not available  | 30 – 35% |

### 15.2. International regulations

No additional information available

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

## SECTION 16: Other information

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Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.