



## SAFETY DATA SHEET

### VT-4A1 / VT-4A2 / VT-4A2H

According to Regulation (EC) No 1907/2006, Annex II, as amended by Regulation (EU) No 453/2010

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

##### 1.1. Product identifier

**Product name** VT-4A1 / VT-4A2 / VT-4A2H  
**Synonyms; trade names** IMS - Insulated Metal Substrate for Thermal Management Applications.

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

**Identified uses** Production of printed circuit board materials.

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

**Supplier** Ventec-Europe Limited  
Unit 1 Trojan Business Centre  
Tachbrook Park  
Warwick.  
CV34 6RH  
01926 889822  
sales@ventec-europe.com

**Manufacturer** Ventec Electronics (Suzhoe) Co. Ltd  
308, Taishan Road,  
New District,  
Suzhoe Jiangsu,  
P.R.C. 215129

##### 1.4. Emergency telephone number

**Emergency telephone** 0086-512-68091810

#### SECTION 2: Hazards identification

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

###### Classification (EC 1272/2008)

**Physical hazards** Not Classified  
**Health hazards** Not Classified  
**Environmental hazards** Not Classified

##### 2.2. Label elements

**Hazard statements** NC Not Classified

##### 2.3. Other hazards

## VT-4A1 / VT-4A2 / VT-4A2H

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

|  |                      |
|--|----------------------|
| <b>Aluminium</b>                             | <b>83.0%</b>         |
| CAS number: 7429-90-5                        | EC number: 231-072-3 |
| <b>Classification</b>                        |                      |
| Flam. Sol. 1 - H228                          |                      |
| Water-react. 2 - H261                        |                      |
| <b>Copper Foil</b>                           | <b>8.0%</b>          |
| CAS number: 7440-50-8                        | EC number: 231-159-6 |
| <b>Classification</b>                        |                      |
| Not Classified                               |                      |
| <b>Epoxy Resin - Proprietary Formulation</b> | <b>7.0%</b>          |
| CAS number: 26265-08-7                       |                      |
| <b>Classification</b>                        |                      |
| Skin Irrit. 2 - H315                         |                      |
| <b>Glass cloth</b>                           | <b>2.0%</b>          |
| CAS number: 65997-17-3                       |                      |
| <b>Classification</b>                        |                      |
| Not Classified                               |                      |

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

**Composition comments**      Based on 0.004" Al - 1.0 / Cu 1oz

**Ingredient notes**              Hazards classifications shown above for aluminium relate to generated dust.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

|                                   |   |
|-----------------------------------|---|
| <b>General information</b>        | Get medical advice/attention if you feel unwell. Never give anything by mouth to an unconscious person.   |
| <b>Inhalation</b>                 | IF INHALED: Move affected person to fresh air at once. If breathing stops, provide artificial respiration. Consult a physician for specific advice.   |
| <b>Ingestion</b>                  | IF SWALLOWED: Rinse mouth thoroughly with water. Consult a physician for specific advice.   |
| <b>Skin contact</b>               | Remove contaminated clothing. Rinse immediately with plenty of water.   |
| <b>Eye contact</b>                | If dust has entered the eyes, proceed as follows. Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. Get medical attention if symptoms are severe or persist after washing. |
| <b>Protection of first aiders</b> | If it is suspected that airborne contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus.                |

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

## VT-4A1 / VT-4A2 / VT-4A2H

|                     |   |
|---------------------|---|
| <b>Inhalation</b>   | Inhalation of dust during cutting, grinding or sanding operations involving this product may cause irritation of the respiratory tract. |
| <b>Ingestion</b>    | Due to the physical nature of this product, it is unlikely that ingestion will occur. May cause discomfort if swallowed.                |
| <b>Skin contact</b> | Dust may cause slight irritation.   |
| <b>Eye contact</b>  | Dust may cause slight irritation.   |

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

|                             |                        |
|-----------------------------|------------------------|
| <b>Notes for the doctor</b> | Treat symptomatically. |
|-----------------------------|------------------------|

## **SECTION 5: Firefighting measures**

### **5.1. Extinguishing media**

|                                       |  |
|---------------------------------------|--|
| <b>Suitable extinguishing media</b>   | Use fire-extinguishing media suitable for the surrounding fire. Water spray, foam, dry powder or carbon dioxide. |
| <b>Unsuitable extinguishing media</b> | None known.  |

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

|                                      |   |
|--------------------------------------|---|
| <b>Specific hazards</b>              | The product is not flammable.   |
| <b>Hazardous combustion products</b> | Thermal decomposition or combustion products may include the following substances: Carbon dioxide (CO <sub>2</sub> ). Carbon monoxide (CO). Acrid smoke or fumes. Toxic gases or vapours. |

### **5.3. Advice for firefighters**

|  |   |
|--|---|
| <b>Special protective equipment for firefighters</b> | Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. |
|--|---|

## **SECTION 6: Accidental release measures**

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

|                             |  |
|-----------------------------|--|
| <b>Personal precautions</b> | Avoid inhalation of dust and contact with skin and eyes. |
|-----------------------------|--|

### **6.2. Environmental precautions**

|                                  |   |
|----------------------------------|---|
| <b>Environmental precautions</b> | Avoid release to the environment. Avoid spreading dust or contaminated materials. |
|----------------------------------|---|

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

|                                |   |
|--------------------------------|---|
| <b>Methods for cleaning up</b> | Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into suitable waste disposal containers and seal securely. |
|--------------------------------|---|

### **6.4. Reference to other sections**

## **SECTION 7: Handling and storage**

### **7.1. Precautions for safe handling**

|   |  |
|---|--|
| <b>Usage precautions</b>                      | No specific requirements are anticipated under normal conditions of use. |
| <b>Advice on general occupational hygiene</b> | No specific requirements are anticipated under normal conditions of use. |

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

|                            |  |
|----------------------------|--|
| <b>Storage precautions</b> | No specific requirements are anticipated under normal conditions of use. |
|----------------------------|--|

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

## VT-4A1 / VT-4A2 / VT-4A2H

### SECTION 8: Exposure Controls/personal protection

#### 8.1. Control parameters

##### Occupational exposure limits

##### Aluminium

Long-term exposure limit (8-hour TWA): WEL 10 mg/m<sup>3</sup> inhalable dust

Long-term exposure limit (8-hour TWA): WEL 10 mg/m<sup>3</sup> inhalable dust

Long-term exposure limit (8-hour TWA): WEL 10 mg/m<sup>3</sup> inhalable dust

Long-term exposure limit (8-hour TWA): WEL 4 mg/m<sup>3</sup> respirable dust

Long-term exposure limit (8-hour TWA): WEL 4 mg/m<sup>3</sup> respirable dust

Long-term exposure limit (8-hour TWA): WEL 4 mg/m<sup>3</sup> respirable dust

WEL = Workplace Exposure Limit

#### 8.2. Exposure controls

##### Appropriate engineering controls

Mechanical ventilation or local exhaust ventilation may be required.

##### Personal protection

The following personal protection may be needed if long term exposure during machining, grinding and sawing.

##### Eye/face protection

Wear eye protection.

##### Hand protection

Wear protective gloves.

##### Other skin and body protection

No specific requirements are anticipated under normal conditions of use.

##### Hygiene measures

Good personal hygiene procedures should be implemented.

##### Respiratory protection

Wear a suitable dust mask.

### SECTION 9: Physical and Chemical Properties

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

##### Appearance

Solid.

##### Odour

No characteristic odour.

##### Odour threshold

Does not apply, as product is odourless.

##### Flammability (solid, gas)

UL-94 V0

##### Relative density

~ 1.6 - 1.9

##### Decomposition Temperature

380°C

##### Comments

Information given is applicable to the product as supplied.

#### 9.2. Other information

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

##### Reactivity

Not reactive under normal use and conditions.

#### 10.2. Chemical stability

##### Stability

Stable under normal use and conditions.

#### 10.3. Possibility of hazardous reactions

##### Possibility of hazardous reactions

Product is stable. Hazardous polymerisation will not occur.

## VT-4A1 / VT-4A2 / VT-4A2H

### 10.4. Conditions to avoid

**Conditions to avoid** Avoid generation and spreading of dust.

### 10.5. Incompatible materials

**Materials to avoid** Strong acids. Strong alkalis. Strong oxidising agents.

### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Will decompose at temperatures exceeding 380°C. Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Nitrous gases (NO<sub>x</sub>).

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

**Toxicological effects** No data available on the specific mixture.

**Skin contact** Powder may irritate skin.

**Eye contact** Powder may irritate the eyes.

## SECTION 12: Ecological Information

### 12.1. Toxicity

### 12.2. Persistence and degradability

**Persistence and degradability** The product is not biodegradable.

### 12.3. Bioaccumulative potential

**Bioaccumulative potential** No data available on bioaccumulation.

### 12.4. Mobility in soil

**Mobility** No data available.

### 12.5. Results of PBT and vPvB assessment

### 12.6. Other adverse effects

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**General information** External recovery, treatment, recycling and disposal of waste should comply with all applicable local and/or national regulations.

## SECTION 14: Transport information

**General** The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

### 14.1. UN number

### 14.2. UN proper shipping name

### 14.3. Transport hazard class(es)

### 14.4. Packing group

### 14.5. Environmental hazards

### 14.6. Special precautions for user

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

## SECTION 15: Regulatory information

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

**VT-4A1 / VT-4A2 / VT-4A2H**

|                             |  |
|-----------------------------|--|
| <b>National regulations</b> | None Listed.   |
| <b>EU legislation</b>       | None Listed.   |
| <b>Guidance</b>             | No Polybrominated-Biphenyls or Polybrominated-Biphenyl-Oxides used as a flame retardant in the resin system. |

**15.2. Chemical safety assessment****SECTION 16: Other information**

|                                  |   |
|----------------------------------|---|
| <b>Issued by</b>                 | HS&E Manager.   |
| <b>Revision date</b>             | 16/09/2017  |
| <b>Revision</b>                  | Issue 1   |
| <b>SDS number</b>                | 4557  |
| <b>SDS status</b>                | Approved.   |
| <b>Hazard statements in full</b> | H228 Flammable solid.<br>H261 In contact with water releases flammable gases.<br>H315 Causes skin irritation. |

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.