

SDS Report

No. SHAEC1113685401

Date: Feb. 3, 2015

Page 1 of 1

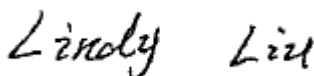
Xiamen innovacera advanced materials co.,ltd
9C No.56 Yibin North RD,Huli District ,Xiamen ,Fujian ,China

SGS Ref. No. : SP11026640-SH
Sample Name : Aluminum Nitride Substrate
End Uses : Carrier material used in electronic part
Composition/Ingredient of sample (as per client submission) : See *Section 3 Composition/information on ingredients* on the SDS report
Job Receiving Date : Jan. 22, 2015
Last Information Date : Jan. 26, 2015
SDS Preparation Period : Jan. 22-Jan. 30, 2015

Service Requested : Safety Data Sheet (SDS) for the sample with submitted composition.

Summary : As per request, the contents and formats of the SDS are prepared in accordance with European Commission Directives 67/548/EEC, 1999/45/EC, Regulation (EC) No 1907/2006, Regulation (EC) No 1272/2008 and Regulation (EU) No 453/2010, and is provided per attached.

Signed for and on behalf of
SGS-CSTC Chemical Laboratory



Lindy Liu
Lab Manager

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested.

Safety data sheet

Regulation(EC) No. 1907/2006, 1272/2008

Printing date 30.01.2015

Revision: 29.01.2015

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

- **Product identifier**
- **Trade name:** Aluminum Nitride Substrate
- **Article number:** Data not available
- **Registration number:** Data not available
- **Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance/ the preparation:** Carrier material used in electronic part
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Fujian Huaqing Electronic Material Technology Co.,Ltd
Wuli industry Zone , Jinjiang , Fujian , P.R.C
Tel: 0595-88162685
Fax: 0595-88162689
- **Only Representative / other EU contact point**
Buyer is not located in European Union. European Union Member State contact not available.
- **Further information obtainable from:** Fujian Huaqing Electronic Material Technology Co.,Ltd
- **Emergency telephone number:**
Dasheng Yang
Tel: 86-595-88162685
- **Email:** dashengyang@hotmail.com
- **Reference number:** SP11026640-SH; SHAEC1113685401



2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
The product is not classified according to the CLP regulation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Not applicable.
- **Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Not applicable
- **Hazard pictograms** Not applicable
- **Signal word** Not applicable
- **Hazard-determining components of labelling:** Not applicable
- **Hazard statements**
Safety data sheet available on request.
- **Precautionary statements** Not applicable
- **Other hazards** Not applicable
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable
- **vPvB:** Not applicable

3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:**
Mixture: consisting of the following components.
For the wording of the listed risk phrases refer to section 16.

· **Dangerous components:**

CAS: 24304-00-5 EINECS: 246-140-8	aluminium nitride  Xi R36/37/38  Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	97,0%
CAS: 1314-36-9 EINECS: 215-233-5	yttrium oxide substance with a Community workplace exposure limit	1,8%
CAS: 1344-28-1 EINECS: 215-691-6	aluminium oxide substance with a Community workplace exposure limit	1,2%

(Contd. on page 2)

Safety data sheet

Regulation(EC) No. 1907/2006, 1272/2008

Printing date 30.01.2015

Revision: 29.01.2015

Trade name: Aluminum Nitride Substrate

(Contd. of page 1)

· **Non-dangerous component:** Not applicable

4 First aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse mouth with water.
If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂ powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:**
Wear fully protective suit.
Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Avoid formation of dust.
Avoid contact with eyes.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:** Pick up mechanically.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Keep receptacles tightly sealed.
Prevent formation of dust.
- **Information about fire - and explosion protection:** Normal measures for preventive fire protection.
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Store only in the original receptacle.

(Contd. on page 3)

Safety data sheet

Regulation(EC) No. 1907/2006, 1272/2008

Printing date 30.01.2015

Revision: 29.01.2015

Trade name: Aluminum Nitride Substrate

(Contd. of page 2)

- **Information about storage in one common storage facility:**
Store away from foodstuffs.
Protect from moisture.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:**

24304-00-5 aluminium nitride

VME (France) 2 mg/m³

1314-36-9 yttrium oxide

MAK (Germany) vgl.Abschn.IIb

1344-28-1 aluminium oxide

AGW (Germany) 3* 10** mg/m³
2(II);*alveolengängige **eintatembare Fraktion; AGS

WEL (Great Britain) 10* 4** mg/m³
*inhalable dust **respirable dust

VME (France) 10 mg/m³

- **DNELs:** Data not available
- **PNECs:** Data not available
- **Additional information:** The lists valid during the making were used as basis.
- **Exposure controls**
- **Based on composition shown in Section 3, the following measures are suggested for occupational safety measure:**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
- **Respiratory protection:** Suitable respiratory protective device recommended.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves:**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material:**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 4)

Safety data sheet

Regulation(EC) No. 1907/2006, 1272/2008

Printing date 30.01.2015

Revision: 29.01.2015

Trade name: Aluminum Nitride Substrate

(Contd. of page 3)

· Eye protection:

Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties**· General Information**

· Appearance:	Solid patch
· Colour:	Grey
· Odour:	Odourless
· Odour threshold:	Data not available.

· pH-value:	Data not available
--------------------	--------------------

· Change in condition

· Melting point/Melting range:	Data not available.
· Boiling point/Boiling range:	Data not available
· Freezing point:	Data not available

· Flash point:	Data not available
-----------------------	--------------------

· Flammability (solid, gaseous):	Date not available.
· auto-Ignition temperature:	Data not available

· Decomposition temperature:	Date not available.
-------------------------------------	---------------------

· Self-igniting:	Product is not selfigniting.
-------------------------	------------------------------

· Danger of explosion:	Product does not present an explosion hazard.
-------------------------------	---

· Explosion limits:

· Lower:	Data not available.
· Upper:	Data not available.
· Oxidizing properties	Data not available.

· Vapour pressure:	Date not available.
---------------------------	---------------------

· Density:	Data not available.
-------------------	---------------------

· Relative density	Data not available.
· Vapour density	Date not available.

· Evaporation rate	Data not available
---------------------------	--------------------

· Solubility in / Miscibility with water:	Data not available
--	--------------------

· Partition coefficient (n-octanol/water):	Data not available.
---	---------------------

· Viscosity:

· Dynamic:	Data not available
· Kinematic:	Data not available
· Other information	Data not available

10 Stability and reactivity

- **Reactivity** No decomposition if used according to specification.
- **Chemical stability** Stable under recommended storage conditions.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.

(Contd. on page 5)

Safety data sheet

Regulation(EC) No. 1907/2006, 1272/2008

Printing date 30.01.2015

Revision: 29.01.2015

Trade name: Aluminum Nitride Substrate

(Contd. of page 4)

- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values relevant for classification:** Data not available
- **Primary irritant effect:**
- **on the skin:** Irritating effect possible.
- **on the eye:** Irritating effect possible.
- **Sensitization:** Sensitization possible.
- **Toxicokinetics, metabolism and distribution** No further relevant information available.
- **Acute effects (acute toxicity, irritation and corrosivity)** No further relevant information available.
- **Repeated dose toxicity** No further relevant information available.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
No further relevant information available

12 Ecological information

- **Toxicity**
- **Acquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation** Smaller quantities can be disposed of with household waste.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- | | |
|--|-----------------------|
| <ul style="list-style-type: none"> · UN-Number · ADR, IMDG, IATA | <p>Not applicable</p> |
| <ul style="list-style-type: none"> · UN proper shipping name · ADR, IMDG, IATA | <p>Not applicable</p> |

(Contd. on page 6)

Safety data sheet

Regulation(EC) No. 1907/2006, 1272/2008

Printing date 30.01.2015

Revision: 29.01.2015

Trade name: Aluminum Nitride Substrate

(Contd. of page 5)

- | | |
|--|-----------------|
| · Transport hazard class(es) | |
| · ADR, IMDG, IATA | |
| · Class | Not applicable |
| · Packing group | |
| · ADR, IMDG, IATA | Not applicable |
| · Marine pollutant: | No |
| · Special precautions for user | Not applicable. |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | |
| | Not applicable. |
| · UN "Model Regulation": | - |

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

- **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

- **Section 313 (Specific toxic chemical listings):**

1344-28-1 aluminium oxide

- **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

- **Proposition 65**

- **Chemicals known to cause cancer:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

- **Carcinogenicity categories**

- **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **TLV (Threshold Limit Value established by ACGIH)**

1344-28-1 aluminium oxide

A4

- **MAK (German Maximum Workplace Concentration)**

1344-28-1 aluminium oxide

2

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

(Contd. on page 7)

Safety data sheet

Regulation(EC) No. 1907/2006, 1272/2008

Printing date 30.01.2015

Revision: 29.01.2015

Trade name: Aluminum Nitride Substrate

(Contd. of page 6)

· **National regulations:**

- **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
- **Other regulations, limitations and prohibitive regulations**

· **Candidate List of Substances of very high concern (SVHC) according to ECHA (20/06/2011)**

None of the ingredients is listed.

· **REACH Regulation Annex XVII Restriction(21/5/2011)**

None of the ingredients is listed.

· **REACH Regulation Annex XIV Authorization List(18/2/2011)**

None of the ingredients is listed.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

· **Relevant phrases**

- H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H335 May cause respiratory irritation.

R36/37/38 Irritating to eyes, respiratory system and skin.

· *****

The contents and format of this MSDS/SDS are in accordance with REGULATION (EC) No 1272/2008, REGULATION (EC) No 1907/2006, Regulation (EU) No 453/2010 and EU Commission Directive 1999/45/EC, 67/548/EEC.

DISCLAIMER OF LIABILITY

The information in this MSDS/SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS/SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS/SDS information may not be applicable.

· **Abbreviations and acronyms:**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 ICAO: International Civil Aviation Organization
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 ACGIH: American Conference of Governmental Industrial Hygienists
 DNEL: Derived No-Effect Level (REACH)
 PNEC: Predicted No-Effect Concentration (REACH)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent

· *****

End of document

EU