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Version 3

1. Identification of the Substance/Preparation and of the Company/Undertaking

Product name ELEM MOUNT

Product identifier EM-430J1-P(Prototype)

Product Code T020-00223

Supplier Address Nitto Denko Corporation Toyohashi Plant
18, Hirayama, Nakahara-cho, Toyohashi, Aichi, 441-3194, Japan
TEL.+81-532-41-7242, FAX. +81-532-41-7284

Department responsible Development Div.

Emergency telephone number +81-532-41-1121(Nitto Denko Corporation Toyohashi Plant)

Recommended Use For the dicing and die attach process of Si wafer

2. Hazards Identification

GHS Classification

Classification of the substance or mixture Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

3. Composition/information on Ingredients

<u>Single Substance or Mixture</u>	<u>Article</u>		
<u>Chemical name</u>	<u>CAS No.</u>	<u>Concentration or concentration ranges</u>	
Synthetic rubber (Die attach film)	-	10-20	
Silica, amorphous(Die attach film)	7631-86-9	20-30	
Phenol resin (Die attach film)	-	25-35	
Epoxy resin (Die attach film)	-	30-40	
Acrylic resin (Dicing tape)	-	25-35	
Polypropylene copolymer (Dicing tape)	-	50-60	
Polyethylene copolymer (Dicing tape)	-	10-15	
Polyethylene Terephthalate (Release liner)	25038-59-9	-	

* The exact percentage (concentration) of composition has been withheld as a trade secret

4. First aid measures

Inhalation In case of falling sick due to inhalation of fume or mist generated by excessively heated products, move to the other place to get a fresh air and obtain doctor's diagnosis

Skin contact Wipe immediately and clean with sudsy water

Eye contact Immediately flush with large amounts of water for at least 15 minutes. Examination and treatment by a physician if necessary

Ingestion Give plenty of water and induce vomiting. Seek medical attention

Most important symptoms/effects, acute and delayed: None in particular

Self-protection of the first aider None in particular

Note to physicians None in particular

5. Fire-fighting measures

Fire extinguishing agent CO2 (except for Cyanides), dry chemical, dry sand, alcohol-resistant foam

Prohibited media Do not use a solid water stream as it may scatter and spread fire

Special exposure hazards in a fire Fire may produce dense black smoke

Specific extinguishing methods Extinguish fire toward the leeward after removing the cause of fire

Advice for fire-fighters Due to poisonous gas (chlorine gas and so on) may be occurred, if needed, use Gas mask and Goggles

6. Accidental release measures

Personal Precautions Will not occur. Not specified

Protective equipment and emergency procedures Will not occur. Not specified

Environmental precautions Will not occur. Not specified

Methods and material for containment Will not occur. Not specified

and cleaning up**7. Handling and Storage**Handling

<u>Technical measures:</u>	None in particular
<u>Local and general exhaust ventilation</u>	Not required for use in normal temperature
<u>Precautions for safe handling</u>	Provide adequate ventilation when performing high-temperature processing
<u>Remarks</u>	Avoid contact with strong alkali and strong acid
	Ensure adequate ventilation
	Use caution and protective gloves to avoid cuts with edges of tape liners

Storage

<u>Technical measures:</u>	Ensure no leak from container
<u>Storage conditions</u>	Keep under 5 °C in closed containers and away from direct sunlight
<u>Storage conditions to avoid</u>	Avoid high temperature
<u>Incompatible materials</u>	Avoid contact with strong alkali and strong acid
<u>Conditions for safe storage, including any incompatibilities</u>	Store in a closed container

8. Exposure Controls/Personal Protection

<u>Control parameters</u>	Unset
<u>Permissible concentration</u>	Unset
<u>Appropriate engineering controls</u>	Local and general exhaust ventilation

Personal protective equipment [PPE]

<u>Respiratory Protection</u>	Wear protective masks with activated charcoal filter
<u>Hand protection</u>	Wear protective gloves
<u>Eye protection</u>	Wear safety glasses with side shields (or goggles)
<u>Skin protection</u>	Wear long sleeve work shirt

<u>General hygiene considerations</u>	No information available
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9. Physical and Chemical Properties

<u>Physical state</u>	film
<u>Color</u>	white
<u>Odor</u>	Slight
<u>pH</u>	Not Applicable
<u>Melting point / Freezing point</u>	30-60 °C
<u>boiling point</u>	Not Applicable
<u>Boiling point / boiling range</u>	Not Applicable
<u>Flash Point</u>	above 200 °C
<u>Autoignition temperature</u>	above 200 °C
<u>Upper</u>	No data available
<u>Lower</u>	No data available
<u>vapor pressure</u>	Not Applicable
<u>Vapor density</u>	Not Applicable
<u>Specific gravity</u>	No data available
<u>Solubility</u>	Not miscible in water, miscible in Ketone
<u>Partition Coefficient (n-octanol/water)</u>	No data available
<u>decomposition temperature</u>	above 200 °C

10. Stability and Reactivity

<u>Reactivity</u>	Stable below 5 °C, Shelf life : according to our specification
<u>Possibility of hazardous reactions</u>	May react vigorously with strong acid, strong alkali, and oxidizing agent on contact, and generate toxic gas
<u>Conditions to avoid</u>	High temperature and humidity
<u>Incompatible materials</u>	Avoid contact with strong alkali and strong acid
<u>Hazardous decomposition products:</u>	Organic gasses such as carbon monoxide and carbon dioxide, and vapours
	Nitrogen oxides (NOx)

11. Toxicological Information

<u>Acute Toxicity</u>	No information available
<u>Skin corrosion/irritation</u>	No information available
<u>Serious eye damage/eye irritation</u>	No information available
<u>Respiratory sensitization</u>	No information available
<u>Germ cell mutagenicity</u>	No information available
<u>Carcinogenicity</u>	No information available

<u>Reproductive Toxicity</u>	No information available
<u>Specification target internal organs/systemic toxicity (single exposure)</u>	No information available
<u>Specification target internal organs/systemic toxicity (repeat exposure)</u>	No information available
<u>Aspiration hazard</u>	No information available

12. Ecological Information

<u>Persistence and degradability</u>	No information available
<u>Bioaccumulation</u>	No information available
<u>Ozone depletion potential (ODP):</u>	No information available
<u>Other adverse effects</u>	No information available

13. Disposal Considerations

<u>Waste treatment methods</u>	Disposal should be in accordance with applicable regional, national and local laws and regulations When burning it, use an incinerator which satisfies its technical guidelines (the residence time is 2 seconds or more at a temperature of 800 °C centigrade or more). Contact an authorized industrial waste treatment company for off-site disposal
<u>Contaminated packaging</u>	Disposal should be in accordance with applicable regional, national and local laws and regulations

14. Transport Information

<u>National regulations</u>	
<u>Transport hazard class</u>	Not Applicable
<u>UN number</u>	Not Applicable
<u>Japanese regulation</u>	Not Applicable
<u>Special precautions in connection with transport or conveyance</u>	None in particular

15. Regulatory information

<u>Local regulation</u>	Japanese regulation Fire Service Act : Designated flammable material (Synthetic resins : Other) Industrial Safety and Health Act: The Substances that their names shall be notified
<u>Foreign regulation</u>	Contact NITTO for more information
<u>REACH 7 Article 33 Article SVHC notification (> 0.1wt%)</u>	Not Applicable

16. Other information

<u>Issue date</u>	26-Aug-2014
<u>Date prepared</u>	08-Sep-2016
<u>Version</u>	3
<u>Other information</u>	The regulatory information presented here should not necessarily be considered as all-inclusive. Other local and international regulations may also apply
<u>Key literature references and sources for data</u>	JIS Z 7252 : 2009 Classification of chemicals based on "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)" JIS Z7253 : 2012 Safety data sheet for chemical products -Content and order of sections
<u>Disclaimer</u>	Contents are based on documents, information and data which are available at this time, but nothing is guaranteed as regards content, physical and chemical properties, hazards Also precautions are subject to ordinary handling, so please take safety measures as usage in special cases

End of Safety Data Sheet