NITTO DENKO

# Material Safety Data Sheet

Date: 2009/08/20
Revision date: 2012/02/23

## 1.Product and company identification

Product name : EPOXY MOLDING COMPOUND for Optical Semiconductor
Name of product : NT-324H-11000
Supplier product code: 71164-10-48-1-1-E

Company identification

Name of supplier : NITTO DENKO CORPORATION KAMEYAMA PLANT
ZIP code : 519-0193
Address : 919,FUKE,KAMEYAMA,MIE,JAPAN
A section in charge: Quality Assurance Administration Section
Telephone number : 81-595-84-2840
Fax number / e-mail: 81-595-82-8613
Emergency telephone number: 81-595-82-1151

Recommended use or limitations on use: NA

## 2.Hazards identification

GHS Classification: Unclassified

GHS label element

Symbol or pictogram: No pictogram
Hazards not available GHS classification: NA

## 3.Composition / information on ingredients

Substance or Mixture: Mixture

| | | | |
|---|---|---|---|
| The common chemical name or the generic name | Bisphenol-A Epoxy Resin | Tris(2,3-Epoxypropyl) Isocyanurate | Acid anhydride |
| Synonyms | NA | NA | NA |
| CAS number | 25068-38-6 | 2451-62-9 | 85-43-8 |
| Concentration and concentration range(wt%) | 45-60 | 13 | 20-35 |
| The impurities and stabilizing additives | NA | NA | NA |
| EINECS / REACH Registration No: | | | |

| | | | |
|---|---|---|---|
| The common chemical name or the generic name | 2,6-Di-tert-butyl-4-Methyl phenol | | |
| Synonyms | NA | | |
| CAS number | 128-37-0 | | |
| Concentration and concentration range(wt%) | 0.1-1.0 | | |

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|---|---|---|---|
| The impurities and stabilizing additives | NA | | |
| EINECS / REACH Registration No: | | | |

## 4.First-aid measure

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| Inhalation: | If affected, move to fresh air. Keep the victim at rest. |
| Skin contact: | Wipe off adhering powder and wash exposed area with lots of water and soap. Contact a physician if irritation occurs. |
| Eye contact: | Immediately flush with large amounts of water for at least 15 minutes. Examination and treatment by a physician if necessary. |
| Ingestion: | Give the water and try to get the victim to vomit. Contact a physician as soon as possible. |
| The most important symptoms and effects: | No information |
| Protection of first-aiders: | Wear protective gloves/protective clothing/eye protection/face protection |
| Special notes to a physician: | No information |

## 5.Fire-fighting measures

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| Extinguishing media: | Carbon dioxide, powder, form, and dry sand |
| NOT suitable extinguishing media: | Water in a jet. |
| Specific hazards: | Dark smoke is generated at a fire. |
| Specific methods: | Extinguish fire toward the leeward after removing the cause of fire. |
| Protection of fire-fighters: | Wear full protective clothing and self-contained breathing apparatus with full face-piece. |

## 6.Accidential release measures

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| Personal precautions: | Persons not wearing protective equipment should be excluded from the area of the spill until clean-up has been completed. |
| Protective equipment and emergency measures: | Wear proper protective equipment (PPE) while at work to protect skin contact or inhale gas |
| Environmental precautions: | Prevent spills to river, drainage etc. |
| Method and materials for containing: | Remove all possible sources of ignition.<br>Collect the product in empty containers after absorbing in cotton rag, soil or sand.<br>Wash the area with plenty of water. |

## 7.Handling and storage

Handling

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| Technical measures: | Use only outdoors or in a well-ventilated area. |
| Local and general ventilation: | Wear mask with the activated carbon, the protective glove, and the protection clothes |
| Precaution: | Apply whole ventilation over processing areas and local ventilation on molding machine. |
| Safe handling advice (avoidance of contact): | Avoid contact with strong acids or alkalis. |

Storage

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| Technical measures: | Keep containers closed. |
| Suitable storage conditions: | Keep under 5 degreeC in closed containers and away from direct sunlight, heat . |
| Storage conditions to be avoided: | Avoid keeping in higher temperature. |
| Incompatible products: | Strong acids or alkalis. |

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| Packaging materials: | Closed or covered containers which have shock-absorbing function. |

## 8.Exposure controls / personal protection

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| Standard control concentration: | Not established. |
| Control parameters: | Tris(2,3-Epoxypropyl) Isocyanurate ACGIH TWA 0.05mg/m3 |
| Engineering measures: | Apply whole ventilation over processing areas and local ventilation on necessary place. |
| Personal protective equipment | |
| Respiratory protection: | Wear mask with the activated carbon. |
| Hand protection: | Wear impervious protective gloves. |
| Eye protection: | Dust-tight goggles. |
| Skin and body protection: | Clothes of the long sleeve are recommended. |
| Hygiene measures: | Do not eat, drink or smoke when using this product. |

## 9.Physical and chemical properties

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| Form: | Tablet or Powder |
| Color: | White |
| Odor: | Smell of epoxy and acid |
| pH: | No data |
| Fusing point: | 50-65 degreeC (Softening temperature) |
| Boiling point: | No data |
| Boiling range: | No data |
| Flash point: | No data |
| Spontaneous ignition temperature: | above 200 degreeC |
| The upper and lower limit of ignition or explosion range: | No data |
| Vapour pressure: | No data |
| Vapour density: | No data |
| Specific gravity: | 1.21-1.27(Cured sample at 25 degreeC) |
| Solubility: | Not miscible in water, miscible in Ketone. |
| Octanol / water partition coefficient: | No data |
| Decomposition temperature: | above 200 degreeC |

## 10.Stability and reactivity

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| Stability: | Stable below 5 degreeC,<br>Shelf life : according to our specification. |
| Hazardous stability: | May occur extraordinary reaction when contacted with strong acids, alkalis or oxidant and generate toxicity gas. |
| Condition to avoid: | Store in high temperature or humidity. |
| Incompatible products: | Strong acids, oxidizing agents or oxidant. |
| Hazardous decomposition products: | Thermal decomposition may form carbon monoxide, carbon dioxide, nitrogen oxide and water vapor. |

## 11.Toxicological information

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| Acute toxicity: | Oral LD50(Rat)<br>Bisphenol-A Epoxy Resin (solid) : 2000mg/Kg < |

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| | Tris(2,3-Epoxypropyl) Isocyanurate : 305mg/Kg <<br>Acid anhydride : 5410mg/Kg <<br>2,6-Di-tert-butyl-4-Methyl p henol : Rat LD50 890-3510mg/kg |
| Skin corrosion property /stimulativeness: | No data |
| Critical damage and stimulativeness to eye: | No data |
| Respiratory organs sensitization or skin sensitization: | No data |
| Generative cell mutagenicity: | No data |
| Carcinogenicity: | No data |
| Reproductive toxicity: | No data |
| Specified target organ / general toxicity - single exposure: | No data |
| Specified target organ / general toxicity - repetitive exposure: | No data |
| Aspiration respiratory organs hazard: | No data |

## 12. Ecological information

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| Persistence/degradability: | No data |
| Bioaccumulation: | No data |
| Mobility in soil: | No data |
| Other hazardous effect: | No data |

## 13. Disposal considerations

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| Waste from residues: | Dispose to licensed disposal processor. |
| Contaminated packaging: | Remove all packaging for recovery or waste disposal. Dispose as industrial waste. |

## 14. Transport information

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| International regulations | |
| UN classification: | NA |
| Japanese regulations: | Fire Defense Law |
| Special safety measures: | Confirm no leakage of containers on transportation.<br>Take in a cargo of them without falling, dropping and breakage. Prevent collapse of cargo piles |

## 15. Regulatory information

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|---|---|
| Local regulation: | It is necessary to follow all regulations in your country. |
| Foreign regulation: | Tris(2,3-Epoxypropyl) Isocyanurate US California proposition 65 |

## 16. Other information

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.