Printing date 06/08/2015 Reviewed on 06/08/2015

1 Identification

- · Product identifier
- · Trade name: EP21TCHT-1 (Part-A)
- · Article number: Epoxy resin blend
- · Relevant identified uses of the substance or mixture and uses advised against

Recommended use - Adhesives, Sealants, Coatings

- · Details of the supplier of the safety data sheet
- · Manufacturer/Supplier:

Master Bond Inc. 154 Hobart Street

USA-Hackensack, NJ 07601 Phone: 201-343-8983

· Information department:

Product safety department

Emergency phone number : (CHEMTREC)

(North America): 800-424-9300 (International): 703-527-3887

2 Hazard(s) identification

· Classification of the substance or mixture

Skin Irrit. 2 H315 Causes skin irritation. Eye Irrit. 2B H320 Causes eye irritation.

Skin Sens. 1A H317 May cause an allergic skin reaction.

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

- · Label elements
- GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms





GHS07

GHS09

· Signal word Warning

· Hazard statements

Causes skin and eye irritation.

May cause an allergic skin reaction.

Toxic to aquatic life with long lasting effects.

· Precautionary statements

Avoid breathing dust/fume/gas/mist/vapors/spray

Wear protective gloves / eye protection / face protection.

Avoid release to the environment.

Wash thoroughly after handling.

Contaminated work clothing must not be allowed out of the workplace.

If swallowed: Immediately call a poison center/doctor.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Wash contaminated clothing before reuse.

If skin irritation or rash occurs: Get medical advice/attention.

If on skin: Wash with plenty of soap and water.

Take off contaminated clothing and wash it before reuse.

(Contd. on page 2)

(Contd. of page 1)

Safety Data Sheet acc. to OSHA HCS

Printing date 06/08/2015 Reviewed on 06/08/2015

Trade name: EP21TCHT-1 (Part-A)

· Classification system:

· NFPA ratings (scale 0 - 4)



Health = 2 Fire = 1Reactivity = 0

· HMIS-ratings (scale 0 - 4)



3 Composition/information on ingredients

- · Chemical characterization: Mixtures
- · **Description:** Mixture of the substances listed below with nonhazardous additions.

| · Hazardous components: | | |
|---|---------|--|
| Aluminium oxide (CAS no. 1344-28-1) | 50-100% | |
| Epoxy resin (CAS no. 28768-32-3) | 1-20% | |
| Epoxy phenol novolac (CAS no. 28064-14-4) | 1-20% | |
| Diluent (CAS no. 2425-79-8) | < 2.5% | |
| · Main Components: | | |
| Aluminium oxide (CAS no. 1344-28-1) | 50-100% | |
| Epoxy resin (CAS no. 28768-32-3) | 1-20% | |
| Epoxy phenol novolac (CAS no. 28064-14-4) | 1-20% | |
| Diluent (CAS no. 2425-79-8) | < 2.5% | |

4 First-aid measures

- · Description of first aid measures
- · After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

Seek immediate medical advice.

· After skin contact:

Immediately wash with water and soap and rinse thoroughly.

Call a doctor immediately.

· After eye contact:

Rinse opened eye for several minutes under running water. Then consult a doctor.

Seek immediate medical advice.

· After swallowing:

Do not induce vomiting; immediately call for medical help.

Immediately call a doctor.

5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents: Use fire fighting measures that suit the environment.

(Contd. on page 3)

Printing date 06/08/2015 Reviewed on 06/08/2015

Trade name: EP21TCHT-1 (Part-A)

(Contd. of page 2)

· Advice for firefighters

· Protective equipment: Wear personal protective equipments.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective equipment.
- · Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

· Methods and material for containment and cleaning up:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

7 Handling and storage

- · Handling:
- · Precautions for safe handling Ensure good ventilation/exhaustion at the workplace.
- · Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: No information available.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions:

Keep container tightly closed in a dry, cool and well-ventilated place.

Keep receptacle tightly sealed.

8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- · Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- · Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Personal protective equipment:
- · General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

- · Breathing equipment: Use suitable respiratory protective device in case of insufficient ventilation.
- · Protection of hands:



Protective gloves

· Material of gloves Chemical resistant gloves.

(Contd. on page 4)

Printing date 06/08/2015 Reviewed on 06/08/2015

Trade name: EP21TCHT-1 (Part-A)

(Contd. of page 3)

· 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.

· Eye protection:



Safety glasses recommended.

| 9 Physical and chemical properti | ins. |
|---|------------------|
| · Information on basic physical and ch · General Information | |
| · Appearance: | |
| Form: | Highly viscous |
| Color: | Off white |
| · Odor: | Odorless |
| · Odour threshold: | Not available |
| · pH-value: | Not available |
| · Change in condition | |
| Melting point/Melting range: | Not available |
| Boiling point/Boiling range: | Not available |
| · Flash point: | Not available |
| · Flammability (solid, gaseous): | Not available |
| · Ignition temperature: | |
| Decomposition temperature: | Not available |
| · Auto igniting: | Not available |
| · Danger of explosion: | Not available |
| · Explosion limits: | |
| Lower: | Not available |
| Upper: | Not available |
| · Vapor pressure: | Not available |
| · Density: | |
| Relative density at 20 °C (68 °F) | 2.40 g/cm3 |
| Vapour density | Not available |
| Evaporation rate | Not available |
| · Solubility in / Miscibility with | |
| Water: | Insoluble. |
| · Partition coefficient (n-octanol/water |): Not available |
| · Viscosity: | |
| Dynamic: | Not available |
| Kinematic: | Not available |

Printing date 06/08/2015 Reviewed on 06/08/2015

Trade name: EP21TCHT-1 (Part-A)

(Contd. of page 4)

10 Stability and reactivity

- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: Carbon monoxide

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- · Primary irritant effect:
- · on the skin: Can cause skin irritation.
- · on the eye: Can cause eye irritation.
- · Sensitization: May cause sensitization by skin contact.
- · Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations: Harmful

- · Carcinogenic categories
- · IARC (International Agency for Research on Cancer)

Substance is not listed

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

- · Ecotoxical effects:
- · Remark: Harmful to fish
- · Additional ecological information:
- · General notes:

Water hazard class 1 (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.

· Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- · Uncleaned packagings:
- **Recommendation:** Disposal must be made according to official regulations.

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Printing date 06/08/2015 Reviewed on 06/08/2015

Trade name: EP21TCHT-1 (Part-A)

(Contd. of page 5)

14 Transport information

- · UN-Number
- · **DOT**, **ADR**, **IMDG**, **IATA** : 3082
- · UN proper shipping name
- · DOT, ADR, IMDG, IATA: Environmentally hazardous substance, liquid, n.o. s. (Tetraglycidyl methylenedianiline)
- · Transport hazard class(es)
- · DOT, ADR, IMDG, IATA



· Class

9 Miscellaneous dangerous substances and articles

· Label

9

- · Packing group
- · DOT, ADR, IMDG, IATA : III

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):

None of the ingredients is listed.

· 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.

- · Carcinogenic categories
- · EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

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

None of the ingredients is listed.

(Contd. on page 7)

Printing date 06/08/2015 Reviewed on 06/08/2015

Trade name: EP21TCHT-1 (Part-A)

(Contd. of page 6)

- · GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms





· Signal word Warning

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- · Department issuing SDS: Product safety department
- · Contact: Master Bond Inc.
- · Date of preparation / last revision 06/08/2015 / -
- · Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

 $NFPA: National\ Fire\ Protection\ Association\ (USA)$

 ${\it HMIS: Hazardous\ Materials\ Identification\ System\ (USA)}$

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2B: Serious eye damage/eye irritation, Hazard Category 2B

Skin Sens. 1A: Sensitisation - Skin, Hazard Category 1A

 $A quatic\ Chronic\ 2:\ Hazardous\ to\ the\ aquatic\ environment\ -\ Chronic\ Hazard,\ Category\ 2$

US

Printing date 06/08/2015 Reviewed on 06/08/2015

1 Identification

- · Product identifier
- · Trade name: EP21TCHT-1 (Part-B)
- · Article number: Curing agent blend
- · Relevant identified uses of the substance or mixture and uses advised against

Recommended use - Adhesives, Sealants, Coatings

- · Details of the supplier of the safety data sheet
- · Manufacturer/Supplier:

Master Bond Inc. 154 Hobart Street

USA-Hackensack, NJ 07601 Phone: 201-343-8983

· Information department:

Product safety department

Emergency phone number : (CHEMTREC)

(North America): 800-424-9300 (International): 703-527-3887

2 Hazard(s) identification

· Classification of the substance or mixture

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin Sens. 1 H317 May cause an allergic skin reaction.

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT SE 3 H335 May cause respiratory irritation.

STOT RE 1 H372 Causes damage to the kidneys, the liver, the skin and the respiratory system through

prolonged or repeated exposure.

- · Label elements
- GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms





GHS07

07 GHS0

- · Signal word Danger
- · Hazard statements

Causes skin irritation.

Causes serious eye irritation.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

Suspected of damaging fertility or the unborn child.

May cause respiratory irritation.

Causes damage to the kidneys, the liver, the skin and the respiratory system through prolonged or repeated exposure.

· Precautionary statements

In case of inadequate ventilation wear respiratory protection.

Avoid breathing dust/fume/gas/mist/vapors/spray

(Contd. on page 2)

Printing date 06/08/2015 Reviewed on 06/08/2015

Trade name: EP21TCHT-1 (Part-B)

(Contd. of page 1)

Wear protective gloves / eye protection / face protection.

Use personal protective equipment as required.

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

If swallowed: Immediately call a poison center/doctor.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Wash contaminated clothing before reuse.

If skin irritation or rash occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Store locked up.

- · Classification system:
- · NFPA ratings (scale 0 4)



Health = 2 Fire = 1Reactivity = 0

· HMIS-ratings (scale 0 - 4)



3 Composition/information on ingredients

- · Chemical characterization: Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.

| · Hazardous components: | |
|---|---------|
| Aluminium oxide (CAS no. 1344-28-1) | 50-100% |
| Polyamide resin (CAS no. 68410-23-1,112-24-3) | 10-25% |
| Curing agent (CAS no. 112-24-3) | 1-10% |
| · Main Components: | |
| Aluminium oxide (CAS no. 1344-28-1) | 50-100% |
| Polyamide resin (CAS no. 68410-23-1,112-24-3) | 10-25% |
| Curing agent (CAS no. 112-24-3) | 1-10% |

4 First-aid measures

- · Description of first aid measures
- · After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

Seek immediate medical advice.

· After skin contact:

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

· After eye contact:

Rinse opened eye for several minutes under running water. Then consult a doctor.

(Contd. on page 3)

Printing date 06/08/2015 Reviewed on 06/08/2015

Trade name: EP21TCHT-1 (Part-B)

(Contd. of page 2)

Seek immediate medical advice.

· After swallowing:

Do not induce vomiting; immediately call for medical help.

Immediately call a doctor.

5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- · Advice for firefighters
- · Protective equipment: Wear personal protective equipments.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective equipment.
- Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- · Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

7 Handling and storage

- · Handling:
- · Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

- · Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities
- Storage:
- · Requirements to be met by storerooms and receptacles: No information available.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: Keep receptacle tightly sealed.

8 Exposure controls/personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- · Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· Additional Occupational Exposure Limit Values for possible hazards during processing:

112-24-3 3,6-diazaoctanethylenediamin

WEEL Long-term value: 6 mg/m³, 1 ppm Skin

· Additional information: The lists that were valid during the creation were used as basis.

(Contd. on page 4)

Printing date 06/08/2015 Reviewed on 06/08/2015

Trade name: EP21TCHT-1 (Part-B)

(Contd. of page 3)

- · Exposure controls
- · Personal protective equipment:
- · General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

• Breathing equipment: Use suitable respiratory protective device in case of insufficient ventilation.

Not available

Not available

· Protection of hands:



Protective gloves

- · Material of gloves Chemical resistant gloves.
- · 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.

· Eye protection:



Safety glasses recommended.

9 Physical and chemical properties

- · Information on basic physical and chemical properties
- · General Information
- · Appearance:

· pH-value:

Form: Viscous
Color: Off white
Odor: Slight
Odour threshold: Not available

· Change in condition

Melting point/Melting range:

Boiling point/Boiling range: Not available

Flash point: Not available

· Flammability (solid, gaseous): Not available

· Ignition temperature:

Decomposition temperature: Not available

• Auto igniting: Not available

· Danger of explosion: Not available

· Explosion limits:

Lower:Not availableUpper:Not available

(Contd. on page 5)

Printing date 06/08/2015 Reviewed on 06/08/2015

Trade name: EP21TCHT-1 (Part-B)

| | | (Contd. of page 4 |
|--|-------------------|-------------------|
| · Vapor pressure: | Not available | |
| · Density: | | |
| Relative density at 20 °C (68 °F) | 2.17 g/cm3 | |
| Vapour density | Not available | |
| Evaporation rate | Not available | |
| · Solubility in / Miscibility with | | |
| Water: | Not available | |
| · Partition coefficient (n-octanol/water | r): Not available | |
| · Viscosity: | | |
| Dynamic: | Not available | |
| Kinematic: | Not available | |

10 Stability and reactivity

- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: Carbon monoxide

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- · LD/LC50 values that are relevant for classification:

Curing agent (CAS no. 112-24-3)

Oral LD50 2500 mg/kg (rat)
Dermal LD50 805 mg/kg (rabbit)

- · Primary irritant effect:
- · on the skin: Can cause skin irritation.
- · on the eye: Can cause eye irritation.
- · Sensitization: May cause allergic skin reaction.
- · Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations: Harmful

- · Carcinogenic categories
- · IARC (International Agency for Research on Cancer)

Substance is not listed

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

US

Printing date 06/08/2015 Reviewed on 06/08/2015

Trade name: EP21TCHT-1 (Part-B)

(Contd. of page 5)

12 Ecological information

- · Additional ecological information:
- · General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

· Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.

14 Transport information

- · UN-Number
- · DOT, ADR, IMDG, IATA: Not regulated
- · UN proper shipping name
- · DOT, ADR, IMDG, IATA: Not regulated
- · Transport hazard class(es)
- · DOT, ADR, IMDG, IATA: Not regulated
- · Packing group
- · DOT, ADR, IMDG, IATA: Not regulated

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):

None of the ingredients is listed.

· 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.

(Contd. on page 7)

Printing date 06/08/2015 Reviewed on 06/08/2015

Trade name: EP21TCHT-1 (Part-B)

(Contd. of page 6)

· 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.

· Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

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

None of the ingredients is listed.

- · GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms





· **Signal word** Danger

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- · Department issuing SDS: Product safety department
- · Contact: Master Bond Inc.
- · Date of preparation / last revision 06/08/2015 / -
- · Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

 $ACGIH: American \ Conference \ of \ Governmental \ Industrial \ Hygienists$

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Repr. 2: Reproductive toxicity, Hazard Category 2

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1