ZNT Fuse Paste Part A

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 07/21/2015 Version: 1.0

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

1.1. Identification

Product form : Mixture

Product name : ZNT Fuse Paste Part A

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

Use of the substance/mixture : adhesives

1.3. Details of the supplier of the safety data sheet

Zyvex Technologies
1255 Kinnear Road
Suite 100
Columbus, OH 43212
T 614-481-2222 - F 614-481-2260
cballard@zyvextech.com

1.4. Emergency telephone number

Emergency number : Chemtrec (North America): 800.424.9300
Chemtrec (International): 703.527.3887
CHEMTREC (24 HOURS)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Skin Irrit. 2 H315 - Causes skin irritation
Eye Irrit. 2A H319 - Causes serious eye irritation
Skin Sens. 1 H317 - May cause an allergic skin reaction

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :

GHS07

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) : H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation

Precautionary statements (GHS-US) : P261 - Avoid breathing vapors
P264 - Wash hands thoroughly after handling
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear protective gloves
P302+P352 - If on skin: Wash with plenty of water
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362+P364 - Take off contaminated clothing and wash it before reuse
P501 - Dispose in a safe manner in accordance with local/national regulations

2.3. Other hazards

Other hazards not contributing to the classification : Toxic to aquatic life with long lasting effects.

2.4. Unknown acute toxicity (GHS US)

1.28 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)
1.28 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)
1.28 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
Reaction product: bisphenol-A-(epichlorhydrin), epoxy resin; with PMN substance 13-0573 (Functionalized and dispersing polymer with carbon nanotubes (P-09-188))	(CAS No) 25068-38-6	60 – 62 17 - 18	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1, H317 Aquatic Chronic 2, H411 Not classified
1,4-bis(2,3 epoxypropoxy)butane|butanedioldiglycidyl ether	(CAS No) 2425-79-8	5 - 10	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1, H317
Gamma-Glycidoxypropyltrimethoxysilane	(CAS No) 2530-83-8	1 - 3	Eye Dam. 1, H318

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Get medical advice/attention.

First-aid measures after skin contact : Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Not expected to present a significant ingestion hazard under anticipated conditions of normal use. If swallowed, rinse mouth with water (only if the person is conscious).

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

Symptoms/injuries after inhalation : May cause an allergic skin reaction.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes serious eye irritation.

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

All treatments should be based on observed signs and symptoms of distress in the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Reactivity : No dangerous reactions known.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Avoid contact with skin, eyes and clothing. Stop leak, if possible without risk. Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Wear suitable gloves: Nitrile rubber. Use splash goggles when eye contact due to splashing is possible.

Emergency procedures : Ventilate area. Avoid contact with skin and eyes. Stop leak if safe to do so.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage.

6.4. Reference to other sections

Section 7: safe handling. Section 8: personal protective equipment. Section 13: disposal information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid breathing vapors. Provide local exhaust or general room ventilation. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Hygiene measures : Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool well ventilated place.

Incompatible products : Strong oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No relevant OELS

8.2. Exposure controls

Appropriate engineering controls : Provide local exhaust or general room ventilation.

Hand protection : Wear protective gloves: nitrile rubber gloves.

Eye protection : No special eye protection equipment recommended under normal conditions of use. Eye protection should only be necessary where liquid could be splashed or sprayed.

Skin and body protection : Wear suitable protective clothing: Long sleeved protective clothing.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Black paste.

Color : Black

Odor : characteristic

Odor threshold : No data available

pH : No data available

Melting point : No data available

Freezing point : No data available

Boiling point : No data available

Flash point : No data available

Relative evaporation rate (butyl acetate=1) : No data available

Flammability (solid, gas)	:	No data available
Explosive limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Vapor pressure	:	No data available
Relative density	:	1.28
Relative vapor density at 20 °C	:	No data available
Solubility	:	Water: Solubility in water of component(s) of the mixture : • reaction product: bisphenol-A-(epichlorhydrin), epoxy resin : 5.4 mg/l
Log Pow	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Extremely high or low temperatures.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Dermal

Acute toxicity : Not classified

reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (25068-38-6)	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rat	> 2000 mg/kg

1,4-bis(2,3 epoxypropoxy)butane|butanedioldiglycidyl ether (2425-79-8)	
LD50 oral rat	1163 mg/kg bodyweight
LD50 dermal rabbit	1130 mg/kg bodyweight
ATE US (oral)	1163 mg/kg bodyweight
ATE US (dermal)	1130 mg/kg bodyweight
ATE US (dust, mist)	1.5 mg/l/4h

Skin corrosion/irritation	:	Causes skin irritation.
Serious eye damage/irritation	:	Causes serious eye irritation.
Respiratory or skin sensitization	:	May cause an allergic skin reaction.
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified

Specific target organ toxicity (single exposure)	:	Not classified
Specific target organ toxicity (repeated exposure)	:	Not classified
Aspiration hazard	:	Not classified
Symptoms/injuries after inhalation	:	May cause an allergic skin reaction.
Symptoms/injuries after skin contact	:	Causes skin irritation.
Symptoms/injuries after eye contact	:	Causes serious eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (25068-38-6)	
LC50 fish 1	4.4 mg/l 24 h
EC50 Daphnia 1	2.8 mg/l 48 h

12.2. Persistence and degradability

ZNT Fuse Paste Part A	
Persistence and degradability	Not established.

reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (25068-38-6)	
Persistence and degradability	Readily biodegradable.

12.3. Bioaccumulative potential

ZNT Fuse Paste Part A	
Bioaccumulative potential	Not established.

reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (25068-38-6)	
Log Pow	>= 2.918
Bioaccumulative potential	Not expected to bioaccumulate.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer	:	None known
Effect on the global warming	:	None known
Other information	:	Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations	:	Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	:	Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not considered a dangerous good for transport regulations

TDG

Not considered a dangerous good for transport regulations

Transport by sea

Not considered a dangerous good for transport regulations

Air transport

Not considered a dangerous good for transport regulations

SECTION 15: Regulatory information

15.1. US Federal regulations

reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (25068-38-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

1,4-bis(2,3 epoxypropoxy)butane|butanedioldiglycidyl ether (2425-79-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Gamma-Glycidoxypropyltrimethoxysilane (2530-83-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

PMN Substance 13-0573
TSCA 12(b) – Chemical export notification: Due to de minimus concentrations < 1%, this final product is exempt from reporting.

15.2. International regulations

CANADA

reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (25068-38-6)
Listed on the Canadian DSL (Domestic Sustances List)

1,4-bis(2,3 epoxypropoxy)butane|butanedioldiglycidyl ether (2425-79-8)
Listed on the Canadian DSL (Domestic Sustances List)

Gamma-Glycidoxypropyltrimethoxysilane (2530-83-8)
Listed on the Canadian NDSL (Non-Domestic Substances List)

EU-Regulations

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Sensitisation — Skin, category 1	H317
Hazardous to the aquatic environment — Chronic Hazard, Category 2	H411

National regulations

reaction product: bisphenol-A-(epichlorhydrin), epoxy resin (25068-38-6)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on Taiwan National Chemical Inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Inventory of Existing Chemical Substances Produced or Imported in China (IECSC).

1,4-bis(2,3 epoxypropoxy)butane|butanedioldiglycidyl ether (2425-79-8)
Listed on the Inventory of Existing Chemical Substances Produced or Imported in China (IECSC).
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECI (Korean Existing Chemicals Inventory)
Listed on Taiwan National Chemical Inventory
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)

Gamma-Glycidoxypropyltrimethoxysilane (2530-83-8)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECI (Korean Existing Chemicals Inventory)
Listed on Taiwan National Chemical Inventory
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)

SECTION 16: Other information

Indication of changes : Original Document.

Data sources : Component Supplier SDSs.
Internal Company test data.
European Chemicals Agency (ECHA) Registered Substances list.
National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition.

Abbreviations and acronyms : ATE: Acute Toxicity Estimate.
CAS: (Chemical Abstracts Service) number.
EC50: Environmental Concentration associated with a response by 50% of the test population.
GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).
LD50: Lethal Dose for 50% of the test population.
NOEC: No Observable Effect Concentration.
TSCA: Toxic Substances Control Act.

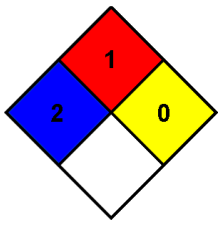
Full text of H-phrases:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal) Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H411	Toxic to aquatic life with long lasting effects

NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 1 - Must be preheated before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



SDS US (GHS HazCom 2012)

SDS prepared by:

The Redstone Group, LLC
6077 Frantz Rd. Suite 206
Dublin, OH USA 43017
T 614-923-7472
www.redstonegrp.com

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product