Section 1 Product and Company Identification

Product Name: Thermo-Fill HT Part B
Supplier: NRI 3875 Fiscal Court, Ste #100 Riviera Beach, FL 33404. 561-683-6992
Contact information for Canada: Aluma Systems - Industrial Services 240 Tecumseh Street Sarnia, ON N7T 2K9
Emergency Phone Number: 800-535-5053 (US and Canada)
Product Description: Hardener solution
Product Use: Intended to repair pipes.
Chemical Name or Synonym: N/A

Section 2 Hazards Identification

2.1 Classification of the substance or mixture:
Skin corrosion/irritation – Category 2
Serious eye damage/eye irritation – Category 1
Skin sensitzation - Category 1
Chronic Aquatic Toxicity – Category 2

2.2 Label Elements:

Signal Word: Danger
Hazard Statements:
H315 Causes skin irritation.
H317 May cause an allergic skin reaction
H318 Causes serious eye damage
H411 Toxic to aquatic life with long lasting effects
Precautionary Statement:
P362 - Take off contaminated clothing and wash before reuse
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P273 - Avoid release to the environment
P391 - Collect spillage

Section 3 Composition/Information on Ingredients
3.2 Mixtures

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amine terminated polymer of diaminocyclohexane (694-83-7) and phenol formaldehyde glycidyl ether polymer (28064-14-4)</td>
<td>N/A</td>
<td>40 - 70</td>
</tr>
<tr>
<td>1,2-diaminocyclohexane</td>
<td>694-83-7</td>
<td>20 – 50</td>
</tr>
<tr>
<td>3-(Triethoxysilyl) propylamine</td>
<td>919-30-2</td>
<td>0 - 3</td>
</tr>
<tr>
<td>1,5-Pentanediame, 2-methyl</td>
<td>15520-10-2</td>
<td>0 - 1</td>
</tr>
<tr>
<td>Hexamethylenediamine</td>
<td>124-09-4</td>
<td>&lt; 0.5</td>
</tr>
<tr>
<td>Cyclopentanemethanamine, 2-amino</td>
<td>21544-02-5</td>
<td>0-0.5</td>
</tr>
</tbody>
</table>

For the full text of the R-phrases mentioned in this Section, see Section 16
For the full text of the H-Statements mentioned in this Section, see Section 16

Section 4 First Aid Measures

4.1 Description of first aid measures

General Advice: Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Eye Contact: Immediate medical attention is required. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes.

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Remove material from skin immediately. In the case of skin irritation or allergic reactions see a physician.

Ingestion: Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

Inhalation: Move to fresh air. If symptoms persist, call a physician.

Protection of First-aiders: Use personal protective equipment. Avoid contact with skin, eyes, and clothing.

4.2 Most important symptoms/effects, acute and delayed: Hives. Itching. Rashes. Serious eye irritation or damage.

4.3 Indication of any Immediate Medical Attention and Special Treatment Needed

Notes to Physician: May cause sensitization of susceptible persons. Treat symptomatically.

Section 5 Fire Fighting Measures

5.1 Extinguishing Media


Unsuitable Extinguishing Media: No information available.

5.2 Special Hazard Arising from the Substance or Mixture:

May cause sensitization by skin contact. Thermal decomposition can lead to release of irritating gases and vapors. Carbon oxides and nitrogen oxides.

5.3 Advice for Fire-fighters: As in any fire, wear self-contained breathing apparatus and full protective gear.
Section 6 Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures: Avoid contact with skin, eyes and clothing. Use personal protective equipment. Evacuate personnel to safe areas.

6.2 Environmental precautions: Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up: Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

6.4 Reference to other sections: See Section 12 for additional information.

Section 7 Handling and Storage

7.1 Precautions for safe handling:

Protective measures: Handle in accordance with good industrial hygiene and safety practice. Do not breathe vapors or spray mist. Use only in area provided with appropriate exhaust ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Do not take internally.

Hygiene Measures: When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. Provide regular cleaning of equipment, work area and clothing. Wash thoroughly after handling.

7.2 Conditions for safe storage including any incompatibilities: Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep in properly labeled containers.

Section 8 Exposure Controls / Personal Protection

8.1 Control Parameters

Exposure Limits:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Italy</th>
<th>Portugal</th>
<th>The Netherlands</th>
<th>Finland</th>
<th>Denmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-(Triethoxysilyl) propylamine</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>TWA: 3 ppm</td>
<td>-</td>
</tr>
<tr>
<td>919-30-2</td>
<td></td>
<td></td>
<td></td>
<td>TWA: 28 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STEL: 6 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STEL: 55 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

8.2 Exposure Controls

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas.

8.2.2 Personal protective equipment:

Eye Protection: Tightly fitting safety goggles.

Skin and Body Protection: Impervious clothing.

Hand Protection: Impervious gloves.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.

Environmental Exposure Controls: Do not allow material to contaminate ground water system.

Section 9 Physical and Chemical Properties
Safety Data Sheet
Thermo-Fill HT - Part B

a) Physical Appearance: Orange Paste
b) Odor: No information available
c) Odor Threshold: No data available
d) pH: No data available
e) Melting Point/freezing point: No data available
f) Initial Boiling point and boiling range: No data available
g) Flash Point: No data available
h) Evaporation rate (ether=1): No data available
i) Flammability (solid, gas): No data available
j) Upper/lower flammability or explosive Limits: Lower: N/A Upper: N/A
k) Vapor Pressure: No data available
l) Vapor density (Air=1): No data available
m) Relative Density: No data available
n) Solubility: Insoluble in water
o) Partition coefficient (n-octanol/water): No data available
p) Auto-ignition Temperature: No data available
q) Decomposition Temperature: No data available
r) Viscosity: 4.2 – 5.2 million cP
s) Explosive Properties: No information available
t) Oxidizing Properties: No information available

Section 10 Stability and Reactivity

10.1 Reactivity: Not data available
10.2 Chemical Stability: Stable under standard normal conditions.
10.3 Possibility of Hazardous reactions: None under normal processing.
10.4 Conditions to Avoid: Thermal decomposition, do not overheat. Incompatible products.
10.6 Hazardous Decomposition Products: Phenols. Carbon monoxide (CO). Carbon dioxide (CO₂)

Section 11 Toxicological Information

11.1 Information on Toxicological Effects
Acute Toxicity

Product Information
Inhalation: No known effect.
Eye Contact: Causes serious eye damage.
Skin Contact: Causes skin irritation. May cause allergic skin reaction
Ingestion: May be harmful if swallowed.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol formaldehyde glycidyl ether polymer</td>
<td>11,400 mg/kg (rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1,2-diaminocyclohexane</td>
<td>4,556 mg/kg (rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3-(Triethoxysilyl) propylamine</td>
<td>1,780 mg/kg (rat)</td>
<td>4mL/kg (rabbit)</td>
<td>-</td>
</tr>
</tbody>
</table>
Sensitization: May cause sensitization of susceptible persons. May cause sensitization by skin contact.
Mutagenic Effects: No information available.
Carcinogenic Effects: No information available.
Reproductive Toxicity: No information available.
Developmental Toxicity: No information available.
STOT - single exposure: No information available.
STOT - repeated exposure: No information available.
Aspiration Hazard: No information available.

Section 12 Ecological Information

12.1 Toxicity
Ecotoxicity Effects: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Toxicity to Algae</th>
<th>Toxicity to Fish</th>
<th>Daphnia (Water Flea)</th>
<th>Magna</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexamethylene-diamine</td>
<td>EC50 72 h: 15 mg/L (Scenedesmus capricornutum - fresh water algae)</td>
<td>LC50 96-h: &gt;56 mg/L (Lepomis macrochirus)</td>
<td>EC50 48-h: 23.4mg/L</td>
<td></td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability: No information available

12.3 Bioaccumulative potential:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexamethylene-diamine</td>
<td>3.242</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil: Absorbs on soil

12.5 Results of PBT and vPvB assessment: No information available

Section 13 Disposal Considerations

13.1 Waste treatment methods: Dispose of in accordance with local regulations
Uncleaned packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.
Other Information According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

Section 14 Transport Information

DOT
UN-Number: UN2735
Proper Shipping Name: Amines, liquid, corrosive, n.o.s. (1,2 diaminocyclohexane)
Hazard Class: 8
Packing Group: II
Safety Data Sheet
Thermo-Fill HT - Part B

IMDG/IMO
UN-Number: UN2735
Proper Shipping Name: Amines, liquid, corrosive, n.o.s. (1,2 diaminocyclohexane)
Hazard Class: 8
Packing Group: II
EmS No.: F-A, S-B

IATA
UN-Number: UN3082
Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s.
Hazard Class: 9
Packing Group: III

ERG Code: 9L

Section 15 Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:
International Inventories:

<table>
<thead>
<tr>
<th>TSCA</th>
<th>EINECS/ELINCS</th>
<th>DSL/NDSL</th>
<th>PICCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>AICS</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
AICS - Australian Inventory of Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
Chemical Safety Assessment: No information available

Section 16 Other Information

Full text of R-phrases referred to under Sections 2 and 3:
R43 - May cause sensitization by skin contact
R34 – Causes burns
R22 - Harmful if swallowed
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R20/22 - Harmful by inhalation and if swallowed
R36/38 - Irritating to eyes and skin

Full text of H-Statements referred to under sections 2 and 3:
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H319 - Causes serious eye irritation
H411 - Toxic to aquatic life with long lasting effects
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage

Key literature references and sources for data: www.ChemADVISOR.com/

Key Legend Information:
N/A – Not Applicable
ND – Not Determined
OSHA – Occupational Safety and Health Administration
NIOSH – National Institute for Occupational Safety and Health

The information contained herein is based on the data available to us and is believed to be accurate. The data is offered in good faith as typical values and not as product specification. The information in this data sheet was compiled from information supplied by the vendors of the components of this compound. NRI makes no warranty either expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. The recommended industrial hygiene and safe handling procedures are believed to be genuinely applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. NRI assumes no responsibility for injury from the use of the product described herein. The information is intended only to assist in the safe handling of this material.

Rev06 Revision Date 07.30.2018