SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: PK005 EPOXY FLUX

SDS Number: SDS-4404  Revised Date: 22 JUNE 2018

Product Use: Industrial Use - Epoxy Flux

MANUFACTURER:

In America:
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No. 428 Xinglong Street
Suzhou Industrial Park
Suchun Industrial Square
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Jiangsu Province, China 215126
Information: (86) 512-6283-4900
2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

* Eye  * Inhalation  * Skin  * Ingestion  NTP  IARC  OSHA  * Not Listed

GHS

Signal Word: Warning

Hazard statement(s)

H303  May be harmful if swallowed
H315  Causes skin irritation
H317  May cause an allergic skin reaction
H318  Causes serious eye damage
H335  May cause respiratory irritation

Precautionary statement(s)

P233  Keep container tightly closed
P261  Avoid breathing dust/fume/gas/mist/vapors/spray
P270  Do not eat, drink or smoke when using this product
P273  Avoid release to the environment
P280  Wear protective gloves/protective clothing/eye protection/face protection
P362 + P364  Take off contaminated clothing and wash before reuse
P301 + P314  IF SWALLOWED: Get Medical advice/attention if you feel unwell
P302 +P352  IF ON SKIN: Wash with plenty of soap and water
P304 + 341  IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + 351  IF IN EYES: Rinse continuously with water for several minutes (15 mins)

Classification:
Acute toxicity, oral - Category 5
Skin irritation – Category 2
Skin sensitization- Category 1B
Serious eye damage- Category
Respiratory irritation-Category 3

POTENTIAL HEALTH EFFECTS:

Eye Contact:  May cause eye irritation. Contains ingredients that may cause severe eye damage.

Ingestion:  Ingestion may irritate the digestive tract. May be harmful.

Inhalation:  May cause irritation or respiratory sensitization.

Skin Contact:  Brief contact may cause irritation with itching and local redness. May cause skin sensitization.

Chronic:  Prolonged or repeated overexposure to mist or vapor generated at high temperatures may result in the inhalation of harmful amounts of material. Prolonged exposure to skin may cause allergic reaction/dermatitis. Heating of epoxy may cause irritation or sensitization. Target organs: kidney/liver/spleen/thymus/lymphatic system/bone marrow)
WARNING: This product can expose you to chemicals including [1-methyl-2-pyrrolidone] which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

NOTE: The Indium Corporation does not recommend, manufacture, market or endorse any of its products for human consumption.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>% wt</th>
<th>CAS Registry #</th>
<th>PEL mg/m³</th>
<th>TLV-TWA mg/m³</th>
<th>TLV-STE L mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPOXY RESIN</td>
<td>30-35</td>
<td>2386-87-0</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
<tr>
<td>HARDENER</td>
<td>17-20</td>
<td>19438-60-9</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
<tr>
<td>PROPRIETARY ACTIVATORS</td>
<td>25-34</td>
<td>-</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
<tr>
<td>1-METHYL-2-PYRROLIDINONE</td>
<td>17-20</td>
<td>872-50-4</td>
<td>N.E.</td>
<td>10ppm.</td>
<td>N.E.</td>
</tr>
</tbody>
</table>

N.E. = Not established

4. FIRST AID MEASURES

Eye Contact: Hold eyelids apart and flush eyes with plenty of tepid water for at least 15 minutes. Seek medical attention if irritation persists.

Ingestion: If patient is conscious, ONLY induce vomiting as directed by trained personnel. NEVER give anything by mouth to an unconscious person. Seek medical attention immediately.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration or oxygen by trained personnel. Seek immediate medical attention.

Skin Contact: Remove contaminated clothing. Wash affected area with soap and water. Wash clothing before reuse. If irritation persists, obtain medical attention.

5. FIRE FIGHTING MEASURES

Flash Point: >95C

Method: Not available

Auto-ignition Temperature: Not established.

Flammable Limits: Limits not established

Extinguishing Media: Use extinguishers appropriate for the surrounding fire conditions, such as water spray all purpose-type foam or dry chemical.

Special Fire Fighting Procedures: Firefighters must wear NIOSH approved or equivalent self-contained breathing apparatus and full protective clothing.
6. ACCIDENTAL RELEASE MEASURES
Spill or Leak Procedures: Wear a respirator and appropriate personal protection (See Exposure Controls/Personal Protective Section). Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Dispose of following all Federal, State and Local regulations. Do not discharge to any drain or sewer. In the EU refer to the Special Waste Regulations.

7. HANDLING AND STORAGE
Handling Precautions: Keep containers tightly closed when not in use. Use care to avoid spills. Avoid breathing vapors from heated material. Avoid contact with eyes, skin and clothing. Use with adequate ventilation.

Storage Precautions: Store product in tightly capped original containers in a cool, dry area. Keep away from heat and flame. Store away from incompatible materials. Empty containers may be hazardous as they contain product residue.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION
Engineering Controls: Good general exhaust ventilation should be sufficient to control airborne levels.
Personal protection:
Eyes: Chemical safety glasses/goggles. Face shield for splash hazards.
Respirator: An authority approved or compliant marked air-purifying respirator with a fume/organic chemical cartridge is recommended under certain circumstances where airborne concentrations are expected to be elevated especially when heating of material.
Skin: Compatible chemical resistant gloves, not latex. Protective outer garment, apron and sleeves as appropriate.
Other: Eyewash fountain in work area. Avoid the use of contact lenses in high fume areas.
Work/Hygienic Practices: Maintain good housekeeping. Clean up spills immediately. Avoid eating, smoking or drinking in the work area. Wash hands thoroughly with soap and water immediately upon leaving the work area.

9. PHYSICAL AND CHEMICAL PROPERTIES
Appearance: Flux - light amber
Odor: Slight characteristic odor.
Specific Gravity: 1.16 @25C
Vapor Pressure: Not applicable.
Vapor Density: (air=1) Not applicable.
Boiling Point: Not applicable.
Melting Point: Not applicable
pH: Not applicable
Solubility in Water: Not established

10. STABILITY AND REACTIVITY
General: Stable.
Conditions to Avoid: Freezing temperatures. High temperatures.
Incompatible Materials: Not established
Hazardous Decomposition / Combustion: Carbon monoxide, carbon dioxide
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION
Carcinogenicity:
   NTP: No
   OSHA: No
   IARC: No
LD50: Not established. LC50: Not established.
Other: Target Organ(s) from ingredients: Kidneys, liver, nerves, bone marrow
Epoxy resin: Oral, rat, 4490 mg/kg, LD50/ Skin, rabbit, 20 ml/kg, LD50
Contains a substance that is may cause damage to the fetus

12. ECOLOGICAL INFORMATION
Product not tested.
Contains a substance that is harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATION
Waste Disposal Method: Dispose of in accordance with all Federal, State and Local environmental regulations.
In Europe follow the Special Waste Regulations.

14. TRANSPORT INFORMATION
Transport in accordance with applicable regulations and requirements. Not regulated under US DOT (United States Department of Transportation). Non hazardous under all shipping regulations.
UN – none
Not hazardous for shipping, Non –hazardous for IATA-not regulated.

15. REGULATORY INFORMATION
The information in this Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated hereunder (29 CFR 1910.1200 ET. SEQ.).
This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulation (CPR).
WMHIS- no information is available to classify.
This product has been classified in accordance with the guidelines set by the Dept of Industrial Health of the Republic of Singapore.
This product has been classified in accordance with the Mexican regulations NOM-018-STPS-2015 and NOM-010-STPS-2014.

Malaysia:
This product has been classified in accordance with: Malaysian – OCCUPATIONAL SAFETY AND HEALTH (CLASSIFICATION, LABELING AND SAFETY DATA SHEET OF HAZARDOUS CHEMICALS) REGULATION OCTOBER 2013 – (CLASS). (GHS)

In China:
Decree No. 591: Regulations on the Control over Safety of Hazardous Chemicals
GB 30000.2-29-2013, Rules for classification and labeling of chemicals. (GHS)
GB/T 16483-2008, GB/T 17517-2013
This product has been classified using the Chinese Occupational Limit for Hazardous Agents in the Workplace, GBZ2-2007.

SARA 313 Listing - 40 CFR 372.65 - 1-methyl-2-pyrrolidinone

![WARNING: This product can expose you to chemicals including [1-methyl-2-pyrrolidone] which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov](image)

All ingredients are listed on the EPA TSCA Inventory.

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>HMIS Hazard Rating:</th>
<th>Health: 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire: 1</td>
<td></td>
</tr>
<tr>
<td>Reactivity: 0</td>
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</tbody>
</table>

Revised Date: 22 JUNE 2018

Prepared by: Nancy Swarts, Indium Corporation of America

Approved by: Nancy Swarts, Indium Corporation of America

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Note: This SDS may be translated into an international language. If there is any misinterpretation or misunderstanding of any words or phases that may occur within any translation the ENGLISH language shall always prevail.