SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: FC-NC-HT-C
SDS Number: SDS-IN FC012
Revised Date: 4 APRIL 2018
Product Use: Industrial Use - Flip chip flux

MANUFACTURER:

In America:
The Indium Corporation of America®,
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nswarts@indium.com

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Information: +44 [0] 1908 580400

In Asia:
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Asia-Pacific Operations-Singapore
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Singapore 628908
Information: +65 6268-8678

EMERGENCY PHONE:
CHEMTREC 24 hrs.
USA: 1 (800) 424-9300
Outside USA: +1 (703) 527-3887

In China:
Indium Corporation (Suzhou), Co., Ltd.
No. 428 Xinglong Street
Suzhou Industrial Park
Suchun Industrial Square
Unit No. 14-C
Jiangsu Province, China 215126
Information: (86) 512-6283-4900
2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

- Eye
- Inhalation
- Skin
- Ingestion

Carcinogen listed in

- NTP
- IARC
- OSHA
- Not Listed

GHS

Signal Word: Danger

Hazard statement(s)

H303  May be harmful if swallowed
H314  Causes severe skin burns and eye damage
H402  Harmful to aquatic life

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 + P311  IF SWALLOWED: Call POISON CENTER or doctor/physician
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)

POTENTIAL HEALTH EFFECTS:

Eye Contact:
Causes eye burns. Do not allow material to come in contact with the eyes.

Ingestion:
May be harmful if swallowed.

Inhalation:
Heated vapor concentrations may be harmful if inhaled. Material may be destructive to the tissue of the mucous membranes and upper respiratory tract.

Skin Contact:
May cause skin irritation or burns. May be harmful if absorbed through the skin.

Chronic:
Not established.

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-STEL mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLYGLYCOL ETHER</td>
<td>85-95</td>
<td>9038-95-3</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
<tr>
<td>PROPRIETARY ADDITIVES</td>
<td>5-15</td>
<td>-</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
</tbody>
</table>

N.E. = Not established          EU = European Union Occupational Exposure Limits

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: >110 C (230 F)  Method: Not available
Auto-ignition Temperature: Not established.
Flammable Limits: Limits not established
Extinguishing Media: Use extinguishers appropriate for the surrounding fire conditions. Water spray, foam, dry chemical, water spray.
Special Fire Fighting Procedures: Firefighters must wear NIOSH approved 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. 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 ventilation should be sufficient to control airborne levels.

**Personal protection:**
- **Eyes:** Chemical safety glasses/goggles. Face shield for splash hazards.
- **Respirator:** A NIOSH approved or EU compliant CE marked air-purifying respirator with a fume/organic chemical cartridge is recommended under certain circumstances where airborne concentrations are expected to be elevated.
- **Skin:** Compatible chemical resistant gloves (nitrile, 0.11 mm thickness). Protective outer garment, apron. 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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance:</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Boiling Point:</strong></td>
<td>335 C</td>
</tr>
<tr>
<td><strong>Odor:</strong></td>
<td>Phenol like odor.</td>
</tr>
<tr>
<td><strong>Melting Point:</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Specific Gravity:</strong></td>
<td>0.95</td>
</tr>
<tr>
<td><strong>pH:</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Vapor Pressure:</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Solubility in Water:</strong></td>
<td>Not established</td>
</tr>
<tr>
<td><strong>Vapor Density:</strong></td>
<td>(air=1) Not applicable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

**General:** Stable.

**Conditions to Avoid:** High temperatures, open flame.

**Incompatible Materials:** Not established

**Hazardous Decomposition / Combustion:** Not established

**Hazardous Polymerization:** Will not occur.

11. TOXICOLOGICAL INFORMATION

**Carcinogenicity:**
- **NTP:** No
- **OSHA:** No
- **IARC:** No
  - Product not tested

**LD50:** Not established.

**LC50:** Not established.

Substance ingredient:
LD50 oral-rat-2,100 mg/kg
12. **ECOLOGICAL INFORMATION**
   
   Biodegradability: Data not established.
   
   Aquatic Toxicity: Data not established.

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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.

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14. **TRANSPORT INFORMATION**
   
   Transport in accordance with applicable regulations and requirements.
   
   UN3145, ALKYLPHENOLS, LIQUID, N.O.S., 8, PG II

   IMDG: Marine Pollutant. EMS-No. F-A, S-B

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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).

   WHMIS: Insufficient information

   This product has been classified in accordance with the guidelines set by the Dept of Industrial Health of the Republic of Singapore.

   SARA 313 Listing - 40 CFR 372.65 - None

   All ingredients are listed on the EPA TSCA Inventory and the Domestic Substance List.

   This product has been classified under the Mexican regulations NOM-018-STPS-2015 and NOM-010-STPS-2014.

   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
Information on exposure levels in China is from regulation document GBZ2-2007 Occupational Exposure Limit for Hazardous Agents in the Workplace.

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).

### 16. OTHER INFORMATION

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

Revised Date: 4 APRIL 2018

Prepared by: Nancy Swarts, Indium Corporation of America

Approved by: Nancy Swarts, Indium Corporation of America

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