SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: 25 BIO-CLEANER
SDS Number: SDS-4425
Product Use: Industrial Use - Flux Cleaner

Revised Date: 29 OCTOBER 2018

MANUFACTURER:

In America:
The Indium Corporation of America®,
34 Robinson Rd., Clinton, NY 13323
Information: (315) 853-4900
nswarts@indium.com

In Europe:
The Indium Corporation of America® (European Operations)
7 Newmarket Ct
Kingston, Milton Keynes, UK, MK 10 OAG
Information: +44 [0] 1908 580400

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

EMERGENCY PHONE:
CHEMTREC 24 hrs.
USA: 1 (800) 424-9300
Outside USA: +1 (703) 527-3887
China: Emergency 86+ 4008417580

www.indium.com
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):

- H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled
- H314 Causes severe skin burns and eye damage
- H412 Harmful to aquatic life with long lasting effects

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 4
- Acute toxicity, dermal - Category 4
- Acute toxicity, inhalation – Category 4
- Chronic aquatic toxicity - Category 3

POTENTIAL HEALTH EFFECTS:

Eye Contact:
Vapors may be irritating, liquid may damage or irritation eye tissue.

Ingestion:
May result in gastric disturbances. Harmful if swallowed.

Inhalation:
May cause throat irritation or burns. Harmful if inhaled.

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

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-STEEL mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHANOLAMINE</td>
<td>30-45</td>
<td>141-43-5(US)</td>
<td>6</td>
<td>7.5</td>
<td>15</td>
</tr>
<tr>
<td>(EU)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>7.6</td>
<td>15</td>
</tr>
<tr>
<td>(Canada)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>7.5</td>
<td>15</td>
</tr>
<tr>
<td>(Singapore)</td>
<td>7.5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>15</td>
</tr>
<tr>
<td>(Mexico)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>8</td>
<td>-</td>
</tr>
<tr>
<td>(China)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>PROPRIETARY</td>
<td>20-40</td>
<td>-</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
<tr>
<td>ETHYLENE GLYCOL</td>
<td>30-35</td>
<td>111-76-2(US)</td>
<td>240</td>
<td>97</td>
<td>-</td>
</tr>
<tr>
<td>BUTYL ETHER (2-BUTOXYETHANOL)</td>
<td></td>
<td></td>
<td>5ppm (skin)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(EU)</td>
<td>-</td>
<td>-</td>
<td>25ppm</td>
<td>50ppm</td>
<td></td>
</tr>
<tr>
<td>(Canada)</td>
<td>-</td>
<td>-</td>
<td>120</td>
<td>360</td>
<td></td>
</tr>
<tr>
<td>(Singapore)</td>
<td>121</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>(Mexico)</td>
<td>-</td>
<td>-</td>
<td>120(skin)</td>
<td>360(skin)</td>
<td></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:** 220F
- **Method:** TCC
- **Auto-ignition Temperature:** Not available
- **Flammable Limits:** NA
- **Extinguishing Media:** Use extinguishers appropriate for the surrounding fire conditions.
- **Special Fire Fighting Procedures:** Standard fire fighting equipment
6. ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Do not allow material to enter sewer system or waterway. Wear personal protective equipment, such as gloves and depending on the quantity a respirator with organic cartridges may be required. Clean up by absorption. Eliminate sources of ignition. Keep unnecessary personnel away. Put clean-up materials in a properly labeled compatible drum. 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. Wear personal protective equipment. Do not breathe vapors.

Storage Precautions: Store product in tightly capped original containers in a cool, dry area away from sources of ignition. Refer to product label for specific storage temperature requirements. Rotate stock to ensure use before expiration date on the label.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Face velocity >2.1 cubic feet/minute in confined areas. Exhaust ventilation is recommended to keep exposure limits as low as possible. Use engineering controls.

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 where airborne concentrations are expected to be elevated.

Skin: Compatible chemical resistant gloves for corrosive chemicals.

Other: Lab coat, eyewash fountain in work area. Avoid the use of contact lenses in high fume/splash areas.

Work/Hygienic Practices: Maintain good housekeeping. Clean up spills immediately.

Good personal hygiene is essential. 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>Appearance</td>
<td>Light straw</td>
</tr>
<tr>
<td>Odor</td>
<td>Ammonical</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.972</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>NA</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>NA</td>
</tr>
<tr>
<td>Volatile by Volume</td>
<td>90%</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>329F</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>pH</td>
<td>13 Corrosive</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Soluble</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>ND</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

General: Stable.

Conditions to Avoid: Direct heat, open flames.

Incompatible Materials: Strong oxidizing agents
Hazardous Decomposition / Combustion: Hydrogen bromide/Carbon dioxide
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION
Carcinogenicity:
- NTP: No
- OSHA: No
- IARC: No

LD50: Not established. LC50: Not established.

Glycol ether: LD50 oral rat – 470 mg/kg
LD50 oral rat >5,000 mg/kg

12. ECOLOGICAL INFORMATION
Product not tested.
Glycol ether: Toxicity to fish: LC50 –other fish- 220 mg/l – 96h
Contains a substances that is harmful to the aquatic life.

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 international regulations and requirements.
UN2491, Ethanolamine Solution, 8, PG III

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).

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

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 Exposure Limit of Hazardous Agents in the Workplace, GBZ2-2007.

This product has been classified in accordance with the Mexican regulations, NOM-018-STPS-2015 and NOM-010-STPS-2014.

SARA 313 Listing - 40 CFR 372.65: glycol ether

All ingredients are listed on the EPA TSCA Inventory.

16. OTHER INFORMATION

HMIS Hazard Rating:  
Health: 2  
Fire: 1  
Reactivity: 0  

Revised Date: 29 OCTOBER 2018  
Prepared by: Nancy Swarts, Indium Corporation of America  
Approved by: Nancy Swarts, Indium Corporation of America

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