1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: TACFLUX 020B
MSDS Number: MSDS-IN TF038
Product Use: Industrial Use - Tacflux

Revised Date: 10 FEBRUARY 2012

MANUFACTURER:

In America:
The Indium Corporation of America
1676 Lincoln Ave., Utica NY 13502
Information: (315) 853-4900
nswarts@indium.com

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

In Europe:
Indium Corporation of Europe
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
No. 14-C
Jiangsu Province, China 215126
Information: (86) 512-6283-4900

In Asia:
Asia-Pacific Operations-Singapore
29 Kian Teck Avenue
Singapore 628908
Information: +65 6268-8678

2. HAZARDS IDENTIFICATION

GHS:
PRIMARY ROUTES OF ENTRY:

- Eye
- Inhalation
- Skin
- Ingestion
- NTP
- Carcinogen listed in
  - IARC
  - OSHA
  - Not Listed

Signal Word: Danger

Hazard Statements:

H317                May cause an allergic skin reaction
H226  Flammable liquid and vapor
H302  Harmful if swallowed
H332  Harmful if inhaled
H334                May cause allergy or asthma symptoms or breathing difficulties if inhaled
H360FD May damage fertility. May damage the unborn child
EUH208           Contains rosin. May produce an allergic reaction

Precautionary statement(s)

P210  Keep away from heat/sparks/open flames/hot surfaces. – No smoking
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  Take off contaminated clothing and wash before reuse
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
POTENTIAL HEALTH EFFECTS:

Eye Contact: Irritating to the eyes and if not removed promptly, may result in serious eye injury. Do not allow material to come in contact with the eyes.

Ingestion: Harmful if swallowed. May cause irritation and damage to the mouth, esophagus and gastrointestinal tract.

Inhalation: Heated vapor concentrations may be harmful if inhaled. May cause irritation or harm to respiratory tract. Rosin may cause occupational asthma.

Skin Contact: May cause skin irritation. Allergic reactions or dermatitis are possible, especially with repeated or prolonged exposure. May be harmful if absorbed through the skin.

Chronic: Not established. Contains a chemical that may impair fertility or cause harm to the unborn child. Target organs: CNS/liver/lungs/kidneys/immune system/bone marrow.

Warning: This product contains a chemical known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (2-methoxyethanol)

NOTE: The Indium Corporation does not recommend, manufacture, market or endorse any of its product's 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>ROSIN</td>
<td>45-55</td>
<td>65997-05-9 (US)</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(EU)</td>
<td>0.05</td>
<td>N.E.</td>
<td>0.15 (sensitiser)</td>
</tr>
<tr>
<td>2-METHOXYETHANOL</td>
<td>30-45</td>
<td>109-86-4</td>
<td>80 (skin)</td>
<td>16</td>
<td>N.E.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(EU)</td>
<td>16 (MEL-skin)</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Canada)</td>
<td>N.E.</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>PROPRIETARY ADDITIVES</td>
<td>10-15</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
</tbody>
</table>

N.E. = Not established

PRODUCT DOES CONTAIN A REPORTABLE EU SUBSTANCES OF VERY HIGH CONCERN (SVHC) (2-methoxyethanol)
4. FIRST AID MEASURES

**Eye Contact:**  Hold eyelids apart and flush eyes with plenty of 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:**  46 C (115 F)  **Method:**  Not available

**Auto-ignition Temperature:**  Not established.

**Flammable Limits:**  Flammable - not established

**Extinguishing Media:**  Use extinguishers appropriate for the surrounding fire conditions.

**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. Keep sources of ignition away.

7. HANDLING AND STORAGE

**Handling**  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. Keep sources of ignition away. Ground containers.

**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:**  Exhaust ventilation is recommended to control airborne levels and keep exposures as low as possible. Recommend material not be used without proper ventilation.

**Personal protection:**

**Eyes:**  Chemical safety glasses with side shields or 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 elevate or when proper ventilation is not available.

**Skin:**  Compatible chemical resistant gloves. Protective outer garment, apron and sleeves as appropriate. Latex gloves not recommended. Use rubber gloves or nitrile.
Other: Eyewash fountain in work area. Avoid the use of contact lenses.
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 after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Flux</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild characteristic odor.</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>(air=1) Not applicable</td>
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<td>Insoluble</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>(air=1) Not applicable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

General: Stable.
Conditions to Avoid: Freezing temperatures. High temperatures.
Incompatible Materials: Ignition sources
Hazardous Decomposition / Combustion: Harmful organic fumes and toxic oxide fumes may form at elevated temperatures.
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity:
- NTP: No
- OSHA: No
- IARC: No
LD50: Not established.
LC50: Not established.
Other: 2-methoxyethanol
LD50 oral - 2370 mg/kg (rat)
LD50 Dermal – 1280 mg/kg (rabbit) & 2000 mg/kg (rat)

12. ECOLOGICAL INFORMATION

Product not tested.
2-methoxyethanol
500 mg/l LC50 96h (freshwater fish)
10000 mg/l LC50 96h (freshwater fish)

13. DISPOSAL CONSIDERATION

Waste Disposal Method: Dispose of in accordance with all Federal, State and Local environmental regulations.
14. TRANSPORT INFORMATION
Transport in accordance with applicable regulations and requirements.

Shipping name: UN 1188, Ethylene Glycol Monomethyl Ether, 3, PG III

UN – UN 1188

15. REGULATORY INFORMATION
The information in this Material 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).

Canadian WHMIS: Class B Division 2 Flammable, D2B Toxic Material Causing Other Toxic Effects (eye irritation in animals) (skin irritant/skin sensitizer).

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

California Prop 65: Warning: This product contains a chemical known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (2-methoxyethanol)

SARA 313 Listing - 40 CFR 372.65 : 2-methoxyethanol

All ingredients are listed on the EPA TSCA Inventory.

EC Classification, Packaging and Labeling Requirements:
Symbol and Hazard Classification of Product

Xn F, T (2-methoxyethanol)

Risk Phrases:
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed
R36/37/38 Irritating to eyes, respiratory system and skin
R42/43  May cause sensitization by inhalation and by skin contact  
R10   Flammable  
R60   May impair fertility (contains a chemical). Note: This does not reflect the entire product.  
R61   May cause harm to the unborn child (contains a chemical). Note: This does not reflect the entire product.

**Safety Phrases:**
- S20/21  When using do not eat, drink or smoke
- S23  Do not breathe fumes/gas/vapor/spray
- S24/25  Avoid contact with skin and eyes
- S36/37/39  Wear suitable protective clothing, gloves and eye/face protection
- S28  After contact with skin wash immediately with plenty of soap and water
- S62    If swallowed, do not induce vomiting seek medical advice immediately and show container or label
- S7  Keep container tightly closed

### 16. OTHER INFORMATION

**HMIS Hazard Rating:**

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health:</td>
<td>2</td>
</tr>
<tr>
<td>Fire:</td>
<td>2</td>
</tr>
<tr>
<td>Physical Hazards:</td>
<td>0</td>
</tr>
</tbody>
</table>

**Revised Date:** 10 FEBRUARY 2012  

**Prepared by:** Nancy Swarts, Indium Corporation of America  

**Approved by:** Nancy Swarts, Indium Corporation of America  

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