SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: WS3401-A FLUX
SDS Number: SDS-5403M
Revised Date: 30 JULY 2018

Product Use: Industrial Use (mixture) - Flux mixture for solder related use.

MANUFACTURER:

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

EMERGENCY PHONE (SPILL):
CHEMTREC 24 hrs.
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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
Unit No. 14-C
Jiangsu Province, China 215126
Information: (86) 512-6283-4900

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

http://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)

H225 Highly flammable liquid and vapor
H315 Causes skin irritation
H319 Causes serious eye irritation
H335 May cause respiratory irritation
H336 May cause drowsiness or dizziness

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces – No smoking
P233 Keep container tightly closed
P240 Ground/Bond container and receiving equipment
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
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:

Flammable Liquid- Category 2
Eye irritation- Category 2A
Skin irritation- Category 3

POTENTIAL HEALTH EFFECTS:

Eye Contact: Causes irritation to the eyes. Liquid may cause damage if not removed.
Ingestion: May cause irritation. May be harmful if swallowed.
Inhalation: May cause irritation. Vapors may cause drowsiness and dizziness.
Skin Contact: May cause skin irritation or sensitization and may cause dryness upon contact.

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

WARNING: This product can expose you to chemicals including [trace amounts of propylene oxide] which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov
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-STELE mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISOPROPNOL (PROPAN-2-OL)</td>
<td>10 - 20</td>
<td>67-63-0 (US)</td>
<td>980</td>
<td>983</td>
<td>1225</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(EU)</td>
<td>-</td>
<td>999</td>
<td>1250</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Canada)</td>
<td>-</td>
<td>983</td>
<td>1228</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Mexico)</td>
<td>980</td>
<td>-</td>
<td>1225</td>
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<td></td>
<td></td>
<td>(China)</td>
<td>-</td>
<td>350</td>
<td>700</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Singapore)</td>
<td>983</td>
<td>-</td>
<td>1230</td>
</tr>
<tr>
<td>POLYGLYCOL ETHER</td>
<td>25 - 35</td>
<td>9038-95-3</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
<tr>
<td>PROPRIETARY ACTIVATORS</td>
<td>45 - 65</td>
<td>-</td>
<td>N.E.</td>
<td>N.E.</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: 15C (59F) Method: Not available

Auto-ignition Temperature: Not established.

Flammable Limits: Limits not established. Flammable

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

Special Fire Fighting Procedures: Firefighters must wear approved self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Wear a respirator and appropriate Personal Protective (See Exposure Controls/Personal Protective Section). Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Ventilate area. Keep unnecessary personnel away from the area. 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. 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. Ambient temperatures.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:
Good general ventilation or chemical hood should be sufficient to control any contaminate levels especially during heating applications.

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 or if engineering controls are not available.

Skin: Compatible chemical resistant gloves. Protective outer garment, apron and sleeves as appropriate.

Other: 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.

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>Flux yellow liquid</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Odor</td>
<td>mild odor characteristic</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1 g/cc</td>
</tr>
<tr>
<td>pH</td>
<td>4 -8</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</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:
Oxidizing agents, acid chlorides, acid anhydrides

Incompatible Materials:

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
12. ECOLOGICAL INFORMATION

Product not tested. No information available.

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. Material is classified as hazardous (flammable) under US EPA guidelines.

14. TRANSPORT INFORMATION

Transport in accordance with applicable international regulations and requirements.

UN1219, Isopropanol, 3, PG II (mixture)

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.).

USA SARA 313 Listing - 40 CFR 372.65 - none

Ingredients are listed on the US EPA TSCA Inventory

![WARNING: This product can expose you to chemicals including [trace amounts of propylene oxide] which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulation (CPR).

Canada WHMIS: Class B Division 2 Flammable, D2B Toxic Material Causing Other Toxic Effects (eye irritation in animals).
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 Mexican regulations NOM-018-STPS-2015 and NOM-010-STPS-2014.

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).

Regulatory Information China:
GB/T 16483-2008, GB/T 17519-2013, Safety Data Sheets for Chemical Products
GB 30000.2-29-2013, Rules for classification and labeling of chemicals (GHS)
Decree No. 591: Regulations on the Control Over Safety of Hazardous Chemicals.

Ingredients are listed on the Korean Inventory of Existing Chemicals (KECL)
Ingredients are listed on the following country lists:
EU/Canada (DSL)/China

16. OTHER INFORMATION

HMIS Hazard Rating:
Health: 2
Fire: 3
Reactivity: 0

Revised Date: 30 JULY 2018
Prepared by: Nancy Swarts, The Indium Corporation of America
Approved by: Nancy Swarts, The Indium Corporation of America

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