SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: 3592 LIQUID FLUX
SDS Number: SDS-HG011
Product Use: Industrial Use - Wave Solder Flux

Revised Date: 5 JULY 2018

MANUFACTURER:

In America:
The Indium Corporation of America®
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Information: (315) 853-4900
nswarts@indium.com

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Chicago Material Division
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Elk Grove Village, Illinois 60007
Information: (847) 439-9135

In Europe:
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Kingston, Milton Keynes, UK, MK 10 OAG
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Asia-Pacific Operations-Singapore
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Singapore 628908
Information: +65 6268-8678

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No. 428 Xinglong Street
Suzhou Industrial Park
Suchun Industrial Square
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Information: (86) 512-6283-4900

EMERGENCY PHONE:
CHEMTREC 24 hrs.
USA: 1 (800) 424-9300
Outside USA: +1 (703) 527-3887
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
- H319  Causes serious eye 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
- P241  Use explosion-proof electrical/ventilating/lightening/equipment
- P242  Use only non-sparking tools
- P261  Avoid breathing dust/fume/gas/mist/vapors/sprays
- 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
- 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
- Specific target organ toxicity- single exposure – Category 3- central nervous system

POTENTIAL HEALTH EFFECTS:

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

Ingestion: May cause persistent nausea, vomiting and abdominal pain. Irritating to digestive tract.

Inhalation: Vapor may cause headache and or dizziness. Irritating to respiratory tract.

Skin Contact: Prolonged contact may cause irritation.

Chronic: Not established.

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

WARNING: This product can expose you to chemicals including [trace amounts of 1,4 dioxane] 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-STEEL mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISOPROPANOL</td>
<td>85-90</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>
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<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>
</tr>
<tr>
<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>ORGANIC ACID</td>
<td>1 - 5</td>
<td>68603-87-2 (US)</td>
<td>N.E.</td>
<td>100 (ppm)</td>
<td>100 (ppm)</td>
</tr>
<tr>
<td>PROPRIETARY</td>
<td>5 –14</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:** 12°C (54°F)  
**Method:** Closed Cup

**Auto-ignition Temperature:** 399°C (750°F)

**Flammable Limits:** Upper: 12 ; Lower 2

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

**Special Fire Fighting Procedures:** Wear protective clothing. Use water to cool fire exposed containers.

### 6. ACCIDENTAL RELEASE MEASURES

**Spill or Leak Procedures:** DO NOT allow material to enter sewer system or waterway. Wear personal protective equipment. Eliminate sources of ignition. Ventilate area in accordance with regulations. Dispose of following all Federal, State and Local regulations. In the EU refer to the Special Waste Regulations.
7. HANDLING AND STORAGE

Handling: Keep containers tightly closed when not in use. Use care to avoid spills. Wear personal protective equipment. Ground all containers.

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

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Exhaust ventilation with face velocity >2.1 cubic feet/minute in confined areas. Otherwise use general exhaust ventilation, to reduce potential exposure.

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.

Other: Lab coat, eye-wash 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid, clear</td>
</tr>
<tr>
<td>Odor</td>
<td>Alcohol odor</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.826-0.808</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>33 mm HG @68°F</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>2.1(air=1)</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>79°C (175°F)</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>pH</td>
<td>4.0 (as is) 3.5 (1% solution)</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Soluble</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

General: Stable.

Conditions to Avoid: Direct heat, open flames and storage in aluminum.

Incompatible Materials: Anhydrides, halogens, phosphorus, trichlorides, monomers, aldehydes

Hazardous Decomposition / Combustion: Carbon dioxide/carbon monoxide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity: NTP: No

OSHA: No

IARC: No
12. ECOLOGICAL INFORMATION

Product not tested.

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.

UN 1219, Isopropanol, 3, PG II

North America Emergency Guide Book – Guide #129 Flammable label

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.).

WARNING: This product can expose you to chemicals including [trace amounts of 1,4 dioxane] which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov

SARA 313 Listing - 40 CFR 372.65: none

All ingredients are listed on the EPA TSCA Inventory.

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 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).
Ingredients are listed on the Canadian Domestic Substance List.

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

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.
This product has been classified using the Chinese Occupational Exposure Limit for Hazardous Agents in the Workplace, GBZ2-2007.

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).

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>HMIS Hazard Rating:</th>
<th>Health:</th>
<th>2</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Fire:</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Reactivity:</td>
<td>0</td>
</tr>
</tbody>
</table>

Revised Date: 5 JULY 2018
Prepared by: Nancy Swarts, Indium Corporation of America
Approved by: Nancy Swarts, Indium Corporation of America

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