SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier:  WAVE SOLDER FLUX #3590-TX
SDS Number:  SDS-HG007 Revised Date:  22 JUNE 2018
Product Use:  Industrial Use - Wave Solder Flux

MANUFACTURER:

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

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Information: +44 [0] 1908 580400

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Singapore 628908
Information: +65 6268-8678

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

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No. 428 Xinglong Street
Suzhou Industrial Park
Suchun Industrial Square
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Jiangsu Province, China 215126
Information: (86) 512-6283-4900

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
- 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 container and receiving equipment
- P242: Use spark resistant tools
- 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
- P301 + P314: IF SWALLOWED: Get Medical advice/attention if you feel unwell
- P302 + P341: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
- P305 + P351: IF IN EYES: Rinse continuously with water for several minutes (15 mins)

Classification:
- Isopropyl alcohol:
  - Flammable Liquid - Category 2
  - Serious eye damage/eye irritant - Category 2
  - Specific target organ systemic 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.

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

Skin Contact: Prolonged contact may cause irritation and dermatitis.

Chronic: Not established.

NOTE: The Indium Corporation does not recommend, manufacture, market or endorse any of it's 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>
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<td>67-63-0 (US)</td>
<td>980</td>
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<td>ORGANIC ACID</td>
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<td>N.E</td>
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</tr>
</tbody>
</table>

N.E. = Not established EU = European 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: 12°C (54°F) Method: Closed Cup
Auto-ignition Temperature: None
Flammable Limits: Upper: 12.7 @77°F; Lower 2 @ 77°F
Extinguishing Media: Dry chemical. Use extinguishers appropriate for the surrounding fire conditions.
Special Fire Fighting: 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 Precautions: Keep containers tightly closed when not in use. Use care to avoid spills. Wear personal protective equipment.

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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Face velocity >2.1 cubic feet/minute in confined areas. Exhaust ventilation recommended.

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. Nitrile 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.
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

Appearance: Liquid, clear
Odor: Alcohol odor.
Specific Gravity: 0.815 @ 60°F
Vapor Pressure: 33 mm HG @ 68°F
Vapor Density: 2.1 (air=1)
Boiling Point: 79°C (175°F)
Melting Point: Not applicable
pH: 3.2 (as is) 3.6 (1% solution)
Solubility in Water: Soluble

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

LD50: Not established. LC50: Not established.

Oral LD50 (isopropyl alcohol)
LD50 Oral- rat- 5,045 mg/kg

Inhalation LC50 (isopropyl alcohol)
LC50 inhalation-rat-8h-16000 ppm

Dermal LD50
LD50 – Dermal- rabbit-12,800 mg/kg

RTECS: Isopropyl alcohol NT8050000

12. ECOLOGICAL INFORMATION

Product not tested.

LC50-Pimephales promelas (fathead minnow)- 9,640 mg/l – 96h (isopropyl alcohol)
EC50-Daphnia magna (water flea) – 5,102 mg/l – 24h (isopropyl alcohol)

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.
UN1219, Isopropanol, 3, PGII


MARINE POLLUTANT: NO

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).
Canadian 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 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).

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: trace levels of 1, 4 Dioxane

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

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>HMIS Hazard Rating:</th>
<th>Health: 2</th>
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<tr>
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<td>Fire: 3</td>
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<tr>
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<td>Reactivity: 0</td>
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Revised Date: 22 JUNE 2018
Prepared by: Nancy Swarts, Indium Corporation of America
Approved by: Nancy Swarts, Indium Corporation of America

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