SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

| Product Identifier: | 1011-MF FLUX |
| SDS Number:         | SDS-4116     |
| Revised Date:       | 2 MAY 2018   |
| Product Use:        | INDUSTRIAL USE-SOLDERING FLUX |

MANUFACTURER:
The Indium Corporation of America®
34 Robinson Rd., Clinton, New York 13323
Information: (315) 853-4900
NSWARTS@INDIUM.COM

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

In Europe:
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

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

Page 1 of 5
2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

<table>
<thead>
<tr>
<th>Route</th>
<th>GHS</th>
<th>Carcinogen listed in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Inhalation</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Skin</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ingestion</td>
<td>✓</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

Carcinogen listed in: NTP, IARC, OSHA

GHS Signal word: warning

Hazard statement(s)

H319 Cause serious eye irritation

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:

Eye irritation – Category 2A

POTENTIAL HEALTH EFFECTS:

Eye Contact: Vapors is irritating to eyes and liquid may damage eye tissue.

Ingestion: May cause gastric disturbance.

Inhalation: May cause irritation.

Skin Contact: May cause irritation.

Chronic: Not established.

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>SHORT TERM mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>WATER</td>
<td>60-70</td>
<td>7732-18-5</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
<tr>
<td>HYDROCHLORIC ACID</td>
<td>4-10</td>
<td>7647-01-0(US)</td>
<td>7(ceiling)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7.5(ceiling)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
<td>7.5</td>
</tr>
</tbody>
</table>
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:** None  
**Method:** Not applicable

**Auto-ignition Temperature:** Not applicable

**Flammable Limits:** Not applicable

**Extinguishing Media:** Dry chemical, Water or CO\(_2\). Use extinguishers appropriate for the surrounding fire conditions.

**Special Fire Fighting Procedures:** Wear protective clothing and self-contained breathing apparatus. 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.

**Precautions:**

**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: A NIOSH approved or EU compliant CE marked air-purifying respirator with a acid/fume/organic chemical cartridge is recommended when there is no ventilation or when airborne concentrations are expected to be elevated.

Skin: Compatible chemical resistant gloves for lower pH chemicals. Use gloves such as nitrile.

Other: Lab coat, eye-wash fountain in work area. Avoid the use of contact lenses in high fume 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>Clear to straw color</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>212 F</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not determined</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.075 @60F</td>
</tr>
<tr>
<td>pH</td>
<td>3.2</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Soluble</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>23.7 mm HG @ 25 C</td>
</tr>
<tr>
<td>% Volatiles by volume</td>
<td>70</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

General: Stable.

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

Incompatible Materials: Strong alkali

Hazardous Decomposition / Combustion: Carbon dioxide/carbon monoxide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity: National Toxicity Program NTP: No

Occupational Safety & Health Administration OSHA: No

International Agency for Research on Cancer IARC: No

LD50: Not established. LC50: Not established.

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. Non-hazardous for shipping.
North America Emergency Guide Book – Not applicable

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 thereunder (29 CFR 1910.1200 ET. SEQ.).

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

WHMIS: Not classified

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

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: 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.

This product has been classified using the Chinese Occupational Limit for 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.

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>HMIS Hazard Rating:</th>
<th>Health: 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fire: 0</td>
</tr>
<tr>
<td></td>
<td>Reactivity: 0</td>
</tr>
</tbody>
</table>

Revised Date: 2 MAY 2018
Prepared by: Nancy Swarts, Indium Corporation of America
Approved by: Nancy Swarts, Indium Corporation of America

The information and recommendations contained herein are, to the best of The Indium Corporation of America's knowledge and belief, accurate and reliable as of the date issued. The Indium Corporation of America does not warrant or guarantee their accuracy or reliability, and The Indium Corporation of America shall not be liable for any loss or damage arising out of the user thereof. The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use. If buyer repackages this product, legal counsel should be consulted to insure proper health, safety and other necessary information is included on the container.