



THE INDIUM CORPORATION OF AMERICA®\EUROPE®\ASIA-PACIFIC®
INDIUM CORPORATION (SUZHOU)®

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier: 42-SS FLUX

SDS Number: SDS- HG4101

Revised Date: 11 JULY 2016

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product Use: Industrial Use (Mixture) - wave solder flux.

1.3 Details of the supplier of the safety data sheet

MANUFACTURER/SUPPLIER/IMPORTER:

In America:

The Indium Corporation of America
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Technical & Safety Information: (315) 853-4900
Safety & SDS Information: nswarts@indium.com
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In Asia:

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Asia-Pacific Operations-Singapore
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1.4 EMERGENCY TELEPHONE NUMBER**FOR CHEMICAL EMERGENCY ONLY PHONE *:****CHEMTREC 24 hrs.****USA: 1 (800) 424-9300****Outside USA: +1 (703) 527-3887***** Used only for spill/leak/fire/exposure/accident****ALL OTHER INQUIRIES: TOLL FREE: +1-800-448-9240 Indium Corporation****2. HAZARDS IDENTIFICATION****PRIMARY ROUTES OF ENTRY:**

☒Eye

☒Inhalation

☒Skin

☒Ingestion

NTP

IARC

OSHA

☒Not Listed

Carcinogen listed in**2.1 Classification:****2.2 Label Information**

Labeling according to Regulation (EC) No. 1272/2008



Signal Word: Warning

Hazard Statements:

H303 May be harmful if swallowed
 H314 Causes severe skin burns and eye damage
 H318 Causes serious eye damage
 H335 May cause respiratory 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 Take off contaminated clothing and wash before reuse
 P301 + P311 IF SWALLOWED: Call POISON CENTER or doctor/physician
 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

Acute toxicity, oral – Category 5
 Skin corrosion (Category 1B)
 Serious eye damage (Category 1)
 Specific target organ toxicity-single exposure-Category 3-respiratory system

2.3 OTHER HAZARDS:**POTENTIAL HEALTH EFFECTS:**

Eye Contact: Vapors may be irritating, liquid may cause irritation or damage to eye tissue.

Ingestion: Liquid is corrosive and if swallowed is capable of causing burns to the mouth, throat and esophagus. May cause gastric disturbances such as nausea and vomiting.

Inhalation: May cause irritation. High concentrations could cause damage to respiratory system.

Skin Contact: May cause irritation, or chemical burns.

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**3.2 Mixture:**

Components	% wt	CAS Registry #/ EINECS#
Water	40-45	-
Proprietary	05-10	-
Hydrochloric acid	20-25	7647-01-0
Zinc chloride	25-30	7646-85-7

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4. FIRST AID MEASURES**4.1 Description of 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.

4.2 Most important symptoms and effect, both acute and delayed:

Skin contact may cause irritation. Eye exposure may cause irritation.

4.3 Indication of any immediate medical attention and special treatment needed:

No specific special treatment information is available on this mixture. Review data provided in this document to understand the hazards when working with the product. No other information is available at this time. Seek medical attention if eye irritation continues after flushing. If respiratory discomfort is evident seek medical advice.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing Media: Use extinguishers appropriate for the surrounding fire conditions. Foam, dry chemical, water spray.

5.2 Special hazards arising from the substance or mixture:

May produce toxic fumes of carbon monoxide if burning.

5.3 Advice for Firefighters Fire fighters must wear approved self-contained breathing apparatus and full protective clothing.

No other information is available.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Keep away from the spill. Keep exhaust ventilation system running. In the event of a fire evacuate area.

For emergency responders:

Wear safety glasses, gloves when cleaning up any spill. Other equipment may be necessary based on the immediate area and other chemicals unrelated to the product that may be in use. Adequate ventilation should be available. Keep unnecessary personnel away from area during clean up.

6.2 Environmental Precautions: Dispose contaminated cloth rags or paper towels, spill clean- up debris and absorbents following all applicable governmental regulations.

6.3 Methods and material for containment and cleaning up:

Spill or leak procedures: Absorb all liquids. Throw spill clean - up debris into plastic container for proper disposal.

6.4 Reference to other sections: See Section 8 for exposure levels.

7. HANDLING AND STORAGE

7.1 Precautions For Safe Handling: Keep containers tightly closed when not in use. Use care to avoid spills. Wear appropriate personal protective equipment when working or handling corrosive materials. Always thoroughly wash your hands after handling this product. DO NOT touch or rub eyes until hands are washed. Do not eat, drink or smoke when handling this product. Utilize exhaust ventilation especially during heating product. General odor and chemical content require exhaust whenever the container is open.

7.2 Conditions for Safe Storage, including any incompatibilities:

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

7.3 Specific End Use(s): Soldering related applications

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters:

		<u>CAS#/EINECS#</u>	<u>TWA</u> mg/m3	<u>STEL</u> mg/m3
WATER	40-45	7732-18-5	N.E.	N.E.
PROPRIETARY	05 –10	-	N.E.	N.E.
HYDROCHLORIC ACID	20-25	7647-01-0/231-595-7 (EU)	8	15
		France	-	7.6
		Belgium	8	15
		Spain	7.6	15
		Italy	8	15
		Germany	3	-
		Portugal	8	15
		The Netherlands	8	15
		Finland		7.6
		Denmark		8(ceiling)
		Poland	5	10
		Norway		7(ceiling)
		Bulgaria	8	15
		Ireland	8	15

Czech Republic	8	15
Estonia	8	15
Hungary	8	16
Romania	8	15
Slovenia	8	16
Sweden	8	-
Turkey	8	15

ZINC CHLORIDE 25-30 7646-85-7/231-592-0

(UK)	1	2
France	-	1
Belgium	1	2
Spain	1	2
Germany	2	-
Portugal	1	2
Finland	1	-
Denmark	0.5	-
Poland	1	2
Norway	1	3
Ireland	1	2
Czech Republic	1	2
Estonia	1	-
Greece	1	2
Sweden	1	-

TWA = time weighted average
 STEL = short term exposure limit
 N.E. = Not established

8.2 Exposure Controls:

Engineering Controls: Use only with production equipment with adequate exhaust ventilation and other safety features specifically designed for chemical use. Use exhaust ventilation when using the product especially while heating product. Air emission control equipment may be necessary based on the local governmental requirements for contaminants entering the atmosphere.

Personal protection:

Eyes: Chemical safety glasses/goggles. Face shield for splash hazard.

Respiratory: An approved or EU compliant CE marked air-purifying respirator with an acid/organic chemical cartridge is recommended under certain circumstances where airborne concentrations are expected to be elevated.

Skin: Compatible chemical resistant gloves. Recommend a nitrile disposable or other chemical glove.

Other: Lab coat, apron, eye-wash/shower in work area. Avoid the use of contact lenses in high fume areas.

Work/Hygienic Practices: Maintain good housekeeping. Clean up spills immediately. Do not allow rags or paper towels to accumulate in the work area. 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

9.1 Information on basic physical and chemical properties:

Appearance:	Liquid, light yellow	Boiling Point/Range:	212F (100C)
Odor:	Mild	Melting Point/Freezing Point:	Not applicable
Odor Threshold:	Not established	Evaporation Rate:	>1
Specific Gravity:	1.500@60F	pH:	<1
Vapour Pressure:	0.19mm HG@68F	Solubility in Water:	Insoluble
Vapour Density:	Not determined	Partition coefficient:	Not established
Relative Density:	Not established	Flammability:	Not applicable
Flash Point:	Not flammable	Method:	Not applicable
Auto-ignition Temperature:	Not available	Flammable Limits:	Limits not established
UEL/LEL Limits:	Not established	Decomposition Temp:	Not applicable
Viscosity:	Not established	Explosive properties:	Not applicable
Oxidizing Properties:	Not established		

Other Information: Above data for the whole mixture.

10. STABILITY AND REACTIVITY

10.1 Reactivity: Stable.

10.2 Chemical Stability: Stable

10.3 Possibility of Hazardous Reactions: Not established

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

10.5 Incompatible Materials: Sulfuric acid, potassium permanganate

10.6 Hazardous Decomposition Harmful organic fumes and toxic oxide fumes may form at elevated

temperatures.

10.7 Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Acute toxicity: Not established

Mutagenicity: Not established

Irritation: Not established

Toxicity for Reproduction: Not Established

Corrosivity: Not applicable

Absence of specific data: None available (not tested)

Sensitization: Not available

Repeated dose toxicity: Not established

Carcinogenicity: Not established

Likely Routes of Entry: eyes (irritation/burns) /skin (irritation/burns) /inhalation (irritation) ingestion (may be harmful)

Interactive effects: None known

Symptoms related to the physical, chemical and toxicological characteristics:

May cause irritation or burns to the eyes.

Delayed and immediate effects as well as chronic effects from short and long-term exposure:

May cause irritation.

Mixture verses substance information: None known

Other Information:

Carcinogenicity: NTP: No (National Toxicity Program)

Listing OSHA: No (US Occupational Safety & Health Administration)

IARC: No (U.N. International Agency for Research on Cancer)

12. ECOLOGICAL INFORMATION

Product mixtures not tested.

12.1 Toxicity: No information available

12.2 Persistence and degradability: No information available

12.3 Bioaccumulative potential: No information available

12.4 Mobility in soil: No information available

12.5 Results of PBT and vPvB assessments: No data is available

12.6 Other adverse effects: No information is available for mixture. Avoid release to environment. Contains zinc chloride which is very toxic to the aquatic environment and may cause long term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATION

13.1 Waste treatment method:

Dispose of in accordance with environmental regulations. Containerize material and classify according to applicable regulations. Do not dispose of down any drain or waterway. Utilize the same personal protective equipment as the user when handling for disposal.

RoHS (Restriction of Hazardous Substances): Compliant with RoHS 2 (2011/65/EU).

14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements.

Flux is hazardous. Ground shipping

UN proper shipping name: UN 3264

Transport hazard class(s): 8

Packing group: III

Environmental hazards: None

Special precautions for user: None

Transport in bulk: Not applicable

Shipping Name: UN3264, Corrosive liquid, Acidic, Inorganic, N.O.S., (hydrochloric acid, zinc chloride), 8, PG III

Label: Corrosive



IMDG: Ocean shipping

Shipping Name: UN3264, Corrosive liquid, Acidic, Inorganic, N.O.S., (hydrochloric acid, zinc chloride), 8, PG III
Marine Pollutant (zinc chloride)



Marine Pollutant: Yes

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

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.).

All ingredients are listed on the USEPA TSCA Inventory.

Safety data sheet was developed using EC 1907/2006 amended as of 20 May 2010 EU No 453/2010 and information as stated under regulation EC No 1272/2008 CLP Regulation.

GHS = Global Harmonized System

CLP= Classification, labeling and packaging

Product does not contain any substances ozone depleting substances and therefore not subject to EC 2037/2000.

Chemical safety assessment: None performed for mixture.

16. OTHER INFORMATION

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

Revised Date: 11 JULY 2016

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Changes provided on this SDS were based on the requirements of EU No. 453/2010 of May 20, 2010 regarding amendments to EC No. 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).

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