



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

SAFETY DATA SHEET

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

1.1 Product Identifier: TABBING FLUX GS-5454

SDS Number: SDS- 5034

Revised Date: 16 JULY 2014

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

Product Use: Industrial Use (Mixture) - flux.

1.3 Details of the supplier of the safety data sheet

MANUFACTURER/SUPPLIER/IMPORTER:

In America:

The Indium Corporation of America
1676 Lincoln Ave., Utica NY 13502
Technical & Safety Information: (315) 853-4900
Safety & SDS Information: nswarts@indium.com
Corporation web page: <http://www.indium.com>

In Europe:

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In China:

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Suzhou Industrial Park
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Jiangsu Province, China 215126
Information: (86) 512-6283-4900



In Asia:

Asia-Pacific Operations-Singapore
 29 Kian Teck Avenue
 Singapore 628908
 Information: +65 6268-8678

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

Section 2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

Eye Inhalation Skin Ingestion NTP IARC OSHA Not Listed

Carcinogen listed in

2.1 Classification:

Risk Phrases: General Listing: R11, R36/37/38, R42/43, R66, R67
 See Section 16 for full text of each relevant risk statement
 X, F

2.2 Label Elements



Signal Word: Danger

Hazard Statements:

- H225 Highly flammable liquid and vapor
- H304 May be fatal if swallowed and enters airways
- H317 May cause an allergic skin reaction
- H319 Causes serious eye irritation
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H335 May cause respiratory irritation
- H336 May cause drowsiness or dizziness
- EUH208 Contains rosin. May produce an allergic reaction

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
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)

Flammable liquid – Category 2
 Serious eye damage/eye irritant – Category 2
 Flammable liquid – Contains an aspiration hazard if swallowed
 Target organ: liver, kidneys, nerves, gastrointestinal tract

2.3 OTHER HAZARDS:

POTENTIAL HEALTH EFFECTS:

- Eye Contact:** Irritating to the eyes and if not removed promptly, may result in serious eye injury. Do not allow material to come in contact with the eyes.
- Ingestion:** May cause irritation and damage to mouth, esophagus and gastrointestinal tract.
- Inhalation:** May be harmful if swallowed. Heated vapors or fumes from this material may cause irritation to the respiratory system. May be harmful if inhaled. May cause light headedness. Rosin may cause occupational asthma. High concentrations may cause headache, dizziness or lowered blood pressure.
- Skin Contact:** May cause skin irritation or dermatitis. Rosin may cause skin sensitization.
- Chronic:** Not established.

Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixture:

Components	% wt	CAS Registry #/ EINECS#
ROSIN MIXTURE	1 - 3	8050-09-7
ISOPROPANOL	75 - 85	67-63-0/200-661-7

NAPHTHA	10	64742-47-8/265-149-8
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PROPRIETARY	2-14	-
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THIS PRODUCT DOES NOT CONTAIN AN EU REACH REPORTABLE SUBSTANCES OF VERY HIGH CONCERN (SVHC)

Percentages of ingredients have been changed on the SDS to more closely fit the representation of the formulation. There has been no change in the actual percentage of the product ingredients nor has there been any changes to the formulation . No change in the product.

Section 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. Long term contact may cause dermatitis.
Inhalation of decomposed rosin fume may cause irritation or occupational asthma.
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.

Section 5. FIRE FIGHTING MEASURES

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

5.2 Special hazards arising from the substance or mixture:
May produce toxic fumes of carbon monoxide if burning .

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

No other information is available.

Section 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Keep away from the spill. Remove sources of ignition. 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. Use anti - static tools.

6.2 Environmental Precautions: Dispose contaminated cloth rags or paper towels following all applicable governmental regulations. Material is flammable. May not have any reclaim value.

6.3 Methods and material for containment and cleaning up:

Spill or leak procedures: Using a spatula, scoop up flux and place into a plastic pail or drum and tightly cap.

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

Section 7. HANDLING AND STORAGE

7.1 Precautions For Safe Handling:

Keep containers tightly closed when not in use. Use care to avoid spills. Use only with production equipment specifically designed for use with flux. Wear appropriate personal protective equipment when working or handling flammable 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. Ground containers.

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 applications

Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters:

			<u>TWA</u>	<u>STEL</u>
		<u>CAS#/EINECS#</u>	mg/m3	mg/m3
ROSIN	1-3	65997-05-9		
		(EU)	0.05	0.15 (sensitiser)

ISOPROPYL ALCOHOL (PROPAN-2-OL)	75-85	67-63-0/200-661-7		
		(UK)	999	1250
		FRANCE	980	-
		BELGIUM	997	1248
		SPAIN	998	1250
		PORTUGAL	200ppm	400ppm
		FINLAND	500	620
		DENMARK	490	-
		AUSTRIA	500	2000
		SWITZERLAND	500	1000
		POLAND	900	1200
		NORWAY	245	-
		IRELAND	200ppm (skin)	-
		GERMANY	500	1000
		BULGARIA	980	1225
		CROATIA	999	1250
		CZECH REPUBLIC	500	1000
		ESTONIA	350	600
		GREECE	980	1225
		HUNGARY	500	2000
		ICELAND	490	980
		LATVIA	350	600
		LITHUANIA	350	600
		ROMANIA	200	500
		RUSSIA	10	50 vapor
		SLOVAK REPUBLIC	200	500
		SLOVENIA	500	2000
		SWEDEN	350	600
NAPHTHA	10	64742-47-8/265-149-8	N.E.	N.E.
PROPRIETARY	2-14	-	N.E.	N.E.

Percentages of ingredients have been changed on the SDS to more closely fit the representation of the formulation. There has been no change in the actual percentage of the product ingredients nor has there been any changes to the formulation. No change in the product.

TWA = time weighted average
 STEL = short term exposure limit
 Ceiling = not to exceed
 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. Equipment should be grounded.

Personal protection:

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

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

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

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. 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.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance:	Flux-liquid yellow	Boiling Point/Range:	79C (175F)
Odor:	Characteristic odor.	Melting Point/Freezing Point:	Not applicable
Odor Threshold:	Not established	Evaporation Rate:	1.7
Specific Gravity:	0.806.	pH:	Not available
Vapour Pressure:	33mm Hg @68F.	Solubility in Water:	Insoluble
Vapour Density:	(air=1) 2.1	Partition coefficient:	Not established
Relative Density:	Not established	Flammability:	No information available
Flash Point:	12C/54F	Method:	Not applicable
Auto-ignition Temperature:	398C (750F)	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	%Volatiles by volume:	90

9.2 Other Information: Above data for the whole mixture.

Section 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:** Freezing temperatures and high temperatures.
- 10.5 Incompatible Materials:** Avoid contact with acids, bases or oxidizing agents. Ignition sources.
- 10.6 Hazardous Decomposition / Combustion:** Harmful organic fumes and toxic oxide fumes may form at elevated temperatures.
- 10.7 Hazardous Polymerization:** Will not occur.

Section 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) /skin (irritation or sensitization) /inhalation (irritation/sensitization) ingestion (may be harmful)		
Interactive effects:	None known		

Symptoms related to the physical, chemical and toxicological characteristics:

May cause irritation or sensitization by skin and inhalation.

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

Exposure to rosin fume has been known to cause occupational asthma. May cause harm by inhalation and ingestion.

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)

Section 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.

Section 13. DISPOSAL CONSIDERATION

13.1 Waste treatment method:

Dispose of in accordance with environmental regulations. Containerize material and classify according to applicable regulations. No pre-treatment on site is recommended. 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.

Section 14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements.

Flux is hazardous.

14.1 <u>UN Number</u>	None
14.2 <u>UN proper shipping name:</u>	UN 1987
14.3 <u>Transport hazard class(s):</u>	3
14.4 <u>Packing group:</u>	II
14.5 <u>Environmental hazards:</u>	None
14.6 <u>Special precautions for user:</u>	None
14.7 <u>Transport in bulk:</u>	Not applicable



Shipping Name: UN 1987, Alcohols, N.O.S., 3, PG II (Isopropanol and Naphtha)

Section 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.

All ingredients are listed on EINECS. Note Rosin was recently listed under the No Longer Polymer List, Notification of New Chemical Substances in Accordance with Directive 67/548/EEC.

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.

15.2 Chemical safety assessment: None performed for mixture.

Section 16. OTHER INFORMATION

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



Risk Phrases:

- R42/43 May cause sensitization by inhalation or by skin contact
- R36/37/38 Irritating to eyes, respiratory system and skin
- R11 Highly Flammable
- R66 Repeated exposure may cause skin dryness or cracking
- R67 Vapors may cause drowsiness and dizziness

Safety Phrases:

- S16 Keep away from sources of ignition – No smoking
- S20/21 When using do not eat, drink or smoke
- S23 Do not breathe fumes
- S24/25 Avoid contact with skin and eyes
- S27 Take off immediately all contaminated clothing
- S28 After contact with skin wash immediately with plenty of soap and water
- S36/37/39 Wear suitable protective clothing, gloves and eye/face protection
- S7 Keep container tightly closed
- S62 If swallowed, do not induce vomiting seek medical advice immediately and show container or label

Revised Date: 16 JULY 2014

Prepared by: Nancy Swarts, The Indium Corporation of America, nswarts@indium.com

Approved by: Nancy Swarts, The Indium Corporation of America

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).

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.