



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

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier:

Product Name NF 220 No Flow Underfill

SDS Number: SDS- UF005

Revised Date: 4 OCTOBER 2017

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

Product Use: Industrial Use (Mixture) – No-Flow Underfill Adhesive

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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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 of the substance or mixture****2.2 Label elements****GHS**

Pictogram



Signal Word: Warning

Hazard statement(s)

H303 May be harmful if swallowed
 H315 Causes skin irritation
 H317 May cause an allergic skin reaction
 H318 Causes serious eye damage
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

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 +P312 IF SWALLOWED: Call POISON CENTER or doctor/physician if you feel unwell
 P302 +P352 IF ON SKIN: Wash with plenty of soap and water
 P304 + 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:
 Skin irritant- Category 2
 Skin sensitization- Category 1B
 Respiratory sensitization- Category 1B
 Eye irritant- Category 2A

2.3 OTHER HAZARDS:

POTENTIAL HEALTH EFFECTS:

Eye Contact: Do not allow material to come in contact with the eyes. Will cause eye injury if not immediately removed.

Ingestion: May be harmful if swallowed. May cause irritation.

Inhalation: Heated vapor concentrations may be harmful if inhaled. May cause irritation if heated, otherwise harmful effects are not expected at ambient temperatures.

Skin Contact: Causes skin irritation. Allergic reactions or dermatitis are possible, especially with repeated or prolonged exposure. May cause skin sensitization. Epoxy systems are known to cause de-fatting and drying of the skin. Heating of epoxy may cause irritation or sensitization.

Chronic: Prolonged or repeated overexposure to mist or vapor generated at high temperatures may result in the inhalation of harmful amounts of material.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixture:

Components	% wt	CAS Registry #/ EINECS#
EPOXY RESINS	38-52	
HARDENER	31-44	19438-60-9
PROPRIETARY INTERMEDIATES	1-10	-
NON HAZARDOUS PROPRIETARY	10-20	-

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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. Eye exposure may cause serious 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. Water, CO2, foam media.

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.

5.4 Further information:

Material product is not flammable. 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. If on floor wear foot protection to avoid any direct contamination to shoes and boots. Material is sticky and gluey and may cause a slip/fall hazard for clean-up crew.

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

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.

6.2 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. 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.

7.3 Specific End Use(s): Soldering applications

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters:

		<u>CAS#/EINECS#</u>	<u>TWA</u>	<u>STEL</u>
			mg/m ³	mg/m ³
EPOXY RESINS	38-52	-	N.E.	N.E.
HARDENER	31-44	19438-60-9	N.E.	N.E.
PROPRIETARY INTERMEDIATES	1-10	-	N.E.	N.E.
NON HAZARDOUS PROPRIETARY	10-20	-	N.E.	N.E.

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

8.2 Exposure Controls:

Engineering Controls: 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. Contains organic related compounds.

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 nitrile disposable or other chemical glove.

Other: Lab coat, 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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance:	Epoxy	Boiling Point/Range:	Not determined
Odor:	Slight characteristic odor.	Melting Point/Freezing Point:	Not applicable
Odor Threshold:	Not established	Evaporation Rate:	Not applicable
Specific Gravity:	Not applicable.	pH:	Not applicable
Vapour Pressure:	Not applicable.	Solubility in Water:	Insoluble
Vapour Density:	(air=1) Not applicable.	Partition coefficient:	Not established
Relative Density:	Not established	Flammability:	Not flammable/ignitable
Flash Point:	Not flammable		
Auto-ignition Temperature:	Not applicable	Flammable Limits:	Not applicable
UEL/LEL Limits:	Not applicable	Decomposition Temp:	Not applicable
Viscosity:	Not established	Explosive properties:	Not applicable
Oxidizing Properties:	Not established		

9.2 Other Information: Above data for the whole mixture.

SECTION 10. STABILITY AND REACTIVITY

10.1 <u>Reactivity:</u>	Stable.
10.2 <u>Chemical Stability:</u>	Stable
10.3 <u>Possibility of Hazardous Reactions:</u>	Not established
10.4 <u>Conditions To Avoid:</u>	High temperatures
10.5 <u>Incompatible Materials:</u>	Not established
10.6 <u>Hazardous Decomposition / Combustion:</u>	Harmful organic fumes and toxic oxide fumes may form at elevated temperatures.
Hazardous Polymerization:	Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

<u>Acute toxicity:</u>	Not established	<u>Mutagenicity:</u>	Not established
<u>Irritation:</u>	Not established	<u>Toxicity for Reproduction:</u>	Not Established
<u>Corrosivity:</u>	Not applicable	<u>Absence of specific data:</u>	None available (not tested)
<u>Sensitization:</u>	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

11.2 Symptoms related to the physical, chemical and toxicological characteristics:

May cause irritation or sensitization by skin and inhalation. May cause eye irritation.

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

May cause irritation by inhalation and ingestion.

Mixture verses substance information: None known

Other Information:

Carcinogenicity Listing:

NTP:No (National Toxicity Program), **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. Non - hazardous flux.

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

SECTION 14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements.

Flux is non - hazardous.

Not regulated/non- hazardous under US DOT (United States Department of Transportation).

Not regulated/non - hazardous under international shipping requirements.(IATA/IMDG)

14.1 UN number None

14.2 UN proper shipping name: None

14.3 Transport hazard class(s): None

14.4 Packing group: None

14.5 Environmental hazards: None

14.6 Special precautions for user: None

14.7 Transport in bulk: Not applicable

SECTION 15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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.

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.

Complies with RoHS 2 (2011/65/EU)

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.

Revised Date: 4 OCTOBER 2017

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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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