

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH)

Revision date: 21 Jul 2023

Print date: 21 Jul 2023

Version: 2.1



TACFLUX 089HF

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name/designation:

TACFLUX 089HF

Other means of identification:

SDS-5049

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

Use of the substance/mixture:

Flux agent

Welding, soldering, and flux products

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Indium Corporation of America

Americas

34 Robinson Road

13323 Clinton, NY

United States

Telephone: (315) 853-4900

Telefax: (315) 853-1000

E-mail: EHS_Compliance@indium.com

Website: <https://www.indium.com>

Importer/Only Representative:

Indium Advanced Materials GmbH

Fragnerstrasse 4

84034 Landshut

Germany

Telephone: +49 871 4309500

E-mail: EHS_Compliance@indium.com

Website: <http://www.indium.com>

E-mail (competent person): EHS_Compliance@indium.com

CHEMTREC 24 hrs

1.4. Emergency telephone number

Romania, 24h: 40-37-6300026

Norway, 24h: +(47)-21930678

Poland, 24h: 48-223988029

Italy, 24h: 800-789-767

Portugal, 24h: 351-308801773

Hungary, 24h: 36-18088425

Germany, 24h: 0800-181-7059 or (Frankfurt) 49-69643508409

Sweden, 24h: +(46)-852503403

United Kingdom, 24h: 44-870-8200418 and 44-2038073798

Outside USA:, 24h: +1 (703) 527-3887

France, 24h: 33-975181407

USA, 24h: 1 (800) 424-9300

China, 24h: +86 4001-204937

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH)

Revision date: 21 Jul 2023

Print date: 21 Jul 2023

Version: 2.1



TACFLUX 089HF

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]

Hazard classes and hazard categories	Hazard statements	Classification procedure
Respiratory or skin sensitisation (<i>Skin Sens. 1B</i>)	H317: May cause an allergic skin reaction.	
Serious eye damage/eye irritation (<i>Eye Dam. 1</i>)	H318: Causes serious eye damage.	
Respiratory or skin sensitisation (<i>Resp. Sens. 1B</i>)	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.	
Reproductive toxicity (<i>Repr. 1B</i>)	H360FD: May damage fertility. May damage the unborn child.	
Hazardous to the aquatic environment (<i>Aquatic Chronic 3</i>)	H412: Harmful to aquatic life with long lasting effects.	

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms:



GHS07

Exclamation mark



GHS05

Corrosion



GHS08

Health hazard

Signal word: Danger

Hazard statements for health hazards

H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H360FD	May damage fertility. May damage the unborn child.

Hazard statements for environmental hazards

H412	Harmful to aquatic life with long lasting effects.
------	--

Supplemental hazard information: none

Precautionary statements Prevention

P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/....

Precautionary statements Response

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Special rules for supplemental label elements for certain mixtures:

1.5 % percent of the mixture consists of ingredient(s) of unknown acute toxicity (oral).

50.4 % percent of the mixture consists of ingredient(s) of unknown acute toxicity (dermal).

76.7 % percent of the mixture consists of ingredient(s) of unknown acute toxicity (inhalative).

2.3. Other hazards

No data available

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH)

Revision date: 21 Jul 2023

Print date: 21 Jul 2023

Version: 2.1



TACFLUX 089HF

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 65997-05-9 REACH No.: 01-2119964093-37-XXXX	Dimerized rosin The substance is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].	40 - ≤ 45 weight-%
CAS No.: 9038-95-3	Polyglycol Ether The substance is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].	30 - ≤ 40 weight-%
CAS No.: 68937-72-4 EC No.: 273-084-1	Carboxylic acids, di-, C4-11 The substance is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].	15 - ≤ 25 weight-%
CAS No.: 143-24-8 EC No.: 205-594-7 Index No.: 603-238-00-9 REACH No.: 01-2119958965-16-XXXX	bis(2-(2-methoxyethoxy)ethyl) ether <i>Candidate List of Substances of Very High Concern for Authorisation!</i> Repr. 1B (H360FD) Danger	4 - < 8 weight-%

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove victim out of the danger area. Remove contaminated, saturated clothing. If unconscious but breathing normally, place in recovery position and seek medical advice. Do not leave affected person unattended. Warning First aider: Pay attention to self-protection!

Following inhalation:

Provide fresh air. In case of respiratory tract irritation, consult a physician. If breathing is irregular or stopped, administer artificial respiration. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator. Get immediate medical advice/attention. Get medical advice/attention if you feel unwell.

In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.

After eye contact:

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Following ingestion:

Rinse mouth. Let 1 glass of water be drunken in little sips (dilution effect). Get medical advice/attention if you feel unwell.

Self-protection of the first aider:

Use personal protection equipment. No direct artificial respiration to be given by first aider.

4.2. Most important symptoms and effects, both acute and delayed

Allergic reactions Serious eye damage/eye irritation Asthmatic complaints Respiratory complaints

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Use extinguishers appropriate for the surrounding fire conditions. Water, CO2 or foam media.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH)

Revision date: 21 Jul 2023

Print date: 21 Jul 2023

Version: 2.1



TACFLUX 089HF

Unsuitable extinguishing media:

none

5.2. Special hazards arising from the substance or mixture

May produce toxic fumes of carbon dioxide if burning.

Hazardous combustion products:

In case of fire: Gases/vapours, toxic

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

5.4. Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

Remove persons to safety.

Protective equipment:

Wear protective gloves/protective clothing/eye protection/face protection.

6.1.2. For emergency responders

Personal protection equipment:

Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

For containment:

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

6.4. Reference to other sections

Safe handling: see section 7 Personal protection equipment: see section 8 Disposal: see section 13

6.5. Additional information

Use appropriate container to avoid environmental contamination.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Avoid breathing dust/fume/gas/mist/vapours/spray. Clear spills immediately. Wear appropriate personal protective equipment when working or handling material. Always thoroughly wash your hands after handling this product. Wear personal protection equipment (refer to section 8). Avoid contact during pregnancy/while nursing.

Advices on general occupational hygiene

When using do not eat, drink, smoke, sniff. Avoid contact with skin, eyes and clothes.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

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 container tightly closed in a cool, well-ventilated place.

7.3. Specific end use(s)

Recommendation:

Welding, soldering, and flux products

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH)

Revision date: 21 Jul 2023

Print date: 21 Jul 2023

Version: 2.1



TACFLUX 089HF

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No data available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

8.2.2. Personal protection equipment

Eye/face protection:

Eye glasses with side protection EN 166

Skin protection:

Tested protective gloves must be worn EN ISO 374. In the case of wanting to use the gloves again, clean them before taking off and air them well. Breakthrough times and swelling properties of the material must be taken into consideration.

Respiratory protection:

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

8.2.3. Environmental exposure controls

No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: solid

Colour: yellow

Odour: not determined

Safety relevant basis data

Parameter	Value	① Method ② Remark
pH	No data available	
Melting point	No data available	
Freezing point	No data available	
Initial boiling point and boiling range	No data available	
Decomposition temperature	No data available	
Flash point	not applicable	
Evaporation rate	No data available	
Auto-ignition temperature	not applicable	
Upper/lower flammability or explosive limits	not applicable	
Vapour pressure	not determined	
Vapour density	not determined	
Density	not determined	
Relative density	not determined	
Bulk density	not determined	
Water solubility	practically insoluble	
Partition coefficient: n-octanol/water	not determined	
Dynamic viscosity	not determined	
Kinematic viscosity	not determined	

9.2. Other information

No data available

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH)

Revision date: 21 Jul 2023

Print date: 21 Jul 2023

Version: 2.1



TACFLUX 089HF

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is stable under storage at normal ambient temperatures.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

The product is stable under storage at normal ambient temperatures.

10.4. Conditions to avoid

Do not spray on an open flame or other ignition source.

10.5. Incompatible materials

Oxidising substances

10.6. Hazardous decomposition products

The product is stable under storage at normal ambient temperatures.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

bis(2-(2-methoxyethoxy)ethyl) ether	CAS No.: 143-24-8	EC No.: 205-594-7
LD₅₀ oral: 3,850 mg/kg (rat) OECD Guideline 401 (Acute Oral Toxicity)		
Dimerized rosin	CAS No.: 65997-05-9	
LD₅₀ oral: >1,000 mg/kg (rat) OECD Guideline 401 (Acute Oral Toxicity)		
LD₅₀ dermal: >2,000 mg/kg (rat) OECD Guideline 402 (Acute Dermal Toxicity)		

Acute oral toxicity:

Based on available data, the classification criteria are not met.

Acute dermal toxicity:

Based on available data, the classification criteria are not met.

Acute inhalation toxicity:

Based on available data, the classification criteria are not met.

Skin corrosion/irritation:

Based on available data, the classification criteria are not met.

Serious eye damage/irritation:

Causes serious eye damage.

Respiratory or skin sensitisation:

May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

Germ cell mutagenicity:

Based on available data, the classification criteria are not met.

Carcinogenicity:

Based on available data, the classification criteria are not met.

Reproductive toxicity:

Based on available data, the classification criteria are not met. May damage fertility. May damage the unborn child.

STOT-single exposure:

Based on available data, the classification criteria are not met.

STOT-repeated exposure:

Based on available data, the classification criteria are not met.

Aspiration hazard:

Based on available data, the classification criteria are not met.

Additional information:

No data available

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH)

Revision date: 21 Jul 2023

Print date: 21 Jul 2023

Version: 2.1



TACFLUX 089HF

11.2. Information on other hazards

No data available

SECTION 12: Ecological information

12.1. Toxicity

bis(2-(2-methoxyethoxy)ethyl) ether CAS No.: 143-24-8 EC No.: 205-594-7
LC₅₀ : >5,000 mg/L 4 d (fish, Danio rerio (previous name: Brachydanio rerio))
EC₅₀ : 2,814 mg/L 3 d (Algae/water plant, Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum))
EC₅₀ : 7,467 mg/L 2 d (crustaceans, Daphnia magna)
NOEC : <625 mg/L 3 d (Algae/water plant, Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum))
NOEC : ≥5,000 mg/L 4 d (fish, Danio rerio (previous name: Brachydanio rerio))
NOEC : 2,500 mg/L 2 d (crustaceans, Daphnia magna)
NOEC : 320 mg/L 21 d (crustaceans, Daphnia magna) OECD Guideline 211 (Daphnia magna Reproduction Test)
LOEC : 5,000 mg/L 2 d (crustaceans, Daphnia magna)
Dimerized rosin CAS No.: 65997-05-9
LC₅₀ : 1.7 mg/L 4 d (fish, Pimephales promelas) OECD Guideline 203 (Fish, Acute Toxicity Test)
LC₅₀ : 1.6 mg/L 2 d (crustaceans, Daphnia magna) OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
EC₅₀ : 16.6 mg/L 3 d (Algae/water plant, Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)) OECD Guideline 201 (Alga, Growth Inhibition Test)
NOEC : 6.25 mg/L 3 d (Algae/water plant, Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)) OECD Guideline 201 (Alga, Growth Inhibition Test)
NOEC : 0.625 mg/L 4 d (fish, Pimephales promelas) OECD Guideline 203 (Fish, Acute Toxicity Test)
NOEC : 0.625 mg/L 2 d (crustaceans, Daphnia magna) OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Aquatic toxicity:

Harmful to aquatic life with long lasting effects.

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

bis(2-(2-methoxyethoxy)ethyl) ether CAS No.: 143-24-8 EC No.: 205-594-7
Log K_{OW} : 0.84
Dimerized rosin CAS No.: 65997-05-9
Log K_{OW} : > 6.5
Bioconcentration factor (BCF) : 7,748

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

bis(2-(2-methoxyethoxy)ethyl) ether CAS No.: 143-24-8 EC No.: 205-594-7
Results of PBT and vPvB assessment: —
Carboxylic acids, di-, C4-11 CAS No.: 68937-72-4 EC No.: 273-084-1
Results of PBT and vPvB assessment: —
Dimerized rosin CAS No.: 65997-05-9
Results of PBT and vPvB assessment: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
Polyglycol Ether CAS No.: 9038-95-3
Results of PBT and vPvB assessment: —

12.6. Endocrine disrupting properties

No data available

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH)

Revision date: 21 Jul 2023

Print date: 21 Jul 2023

Version: 2.1



TACFLUX 089HF

12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Dispose contaminated cloth rags or paper towels following all applicable governmental regulations.

Waste treatment options

Appropriate disposal / Product:

Consult the appropriate local waste disposal expert about waste disposal.

SECTION 14: Transport information

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1. UN number or ID number			
No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.
14.2. UN proper shipping name			
No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.	No dangerous good in sense of these transport regulations.
14.3. Transport hazard class(es)			
not relevant	not relevant	not relevant	not relevant
14.4. Packing group			
not relevant	not relevant	not relevant	not relevant
14.5. Environmental hazards			
not relevant	not relevant	not relevant	not relevant
14.6. Special precautions for user			
not relevant	not relevant	not relevant	not relevant

14.7. Maritime transport in bulk according to IMO instruments

No data available

SECTION 15: Regulatory information

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

15.1.1. EU legislation

Authorisations:

Contains the following substances of very high concern (SVHC) which are included in the Candidate List according to Article 59 of REACH: bis(2-(2-methoxyethoxy)ethyl) ether

15.1.2. National regulations

[DE] National regulations

Water hazard class

WGK:

2 - obviously hazardous to water

[US] National regulations

California Proposition 65 list of chemicals

Does not contain any chemicals listed under California Proposition 65 chemical list

[MX] National regulations

Other regulations, restrictions and prohibition regulations

This product SDS includes exposure information in accordance with Mexican regulations NOM-018-STPS-2015 and NOM-010-STPS-2014.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH)

Revision date: 21 Jul 2023

Print date: 21 Jul 2023

Version: 2.1



TACFLUX 089HF

15.2. Chemical Safety Assessment

No data available

15.3. Additional information

Regulation (EC) No. 1005/2009 on substances that lead to the depletion of the ozone layer

SECTION 16: Other information

16.1. Indication of changes

No data available

16.2. Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
EC ₅₀	Effective Concentration 50%
EN	European Standard
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
ISO	International Standards Organisation
LC ₅₀	Lethal (fatal) Concentration 50%
LD ₅₀	Lethal (fatal) Dose 50%
NFPA	National Fire Protection Association
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Cooperation and Development
PBT	persistent and bioaccumulative and toxic
REACH	Registration, Evaluation and Authorization of Chemicals
RID	Dangerous goods regulations for transport by rail
SVHC	substances of very high concern
UN	United Nations

16.3. Key literature references and sources for data

Substance name	Type	source of supply
bis(2-(2-methoxyethoxy)ethyl) ether CAS No.: 143-24-8 EC No.: 205-594-7	LD ₅₀ oral; LC ₅₀ ; EC ₅₀ ; NOEC; LOEC	Source: European Chemicals Agency, http://echa.europa.eu/
Dimerized rosin CAS No.: 65997-05-9	LD ₅₀ oral; LD ₅₀ dermal; LC ₅₀ ; EC ₅₀ ; NOEC	Source: European Chemicals Agency, http://echa.europa.eu/

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Hazard classes and hazard categories	Hazard statements	Classification procedure
Respiratory or skin sensitisation (<i>Skin Sens. 1B</i>)	H317: May cause an allergic skin reaction.	
Serious eye damage/eye irritation (<i>Eye Dam. 1</i>)	H318: Causes serious eye damage.	
Respiratory or skin sensitisation (<i>Resp. Sens. 1B</i>)	H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.	
Reproductive toxicity (<i>Repr. 1B</i>)	H360FD: May damage fertility. May damage the unborn child.	
Hazardous to the aquatic environment (<i>Aquatic Chronic 3</i>)	H412: Harmful to aquatic life with long lasting effects.	

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH)

Revision date: 21 Jul 2023

Print date: 21 Jul 2023

Version: 2.1



TACFLUX 089HF

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H360FD	May damage fertility. May damage the unborn child.

16.6. Training advice

No data available

16.7. Additional information

No data available