



## Safety Data Sheet

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LOCTITE X32-10I known as FLUX X32-10I 20L

SDS No. : 175676

V001.2

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### Section 1. Identification of the substance/preparation and of the company/undertaking

**Product name:** LOCTITE X32-10I known as FLUX X32-10I 20L

**Other means of identification:** LOCTITE X32-10I 20L

**Product code:** IDH322436

**Recommended use of the chemical and restrictions on use**

**Intended use:** Liquid Flux

**Identification of manufacturer, importer or distributor**

**Importer:** Henkel Singapore Pte Ltd 401 Commonwealth Drive, #03-01/02, Haw Par Technocentre, Singapore. 149598  
Phone : +65 62660100 Fax : +65 62661161

**E-mail address of person responsible for Safety Data Sheet:** ap-ua-psra.sea@henkel.com

**Emergency information:** FOR EMERGENCIES ONLY (Spill, major leak, Fire, Exposure, or Accident). Call CHEMTREC: +1 703-741-5970

### Section 2. Hazards identification

**GHS Classification:**

<u>Hazard Class</u>	<u>Hazard Category</u>	<u>Target organ</u>
Flammable liquids	Category 2	
Serious eye damage/eye irritation	Category 2	
Specific target organ toxicity - single exposure	Category 3	Central Nervous System

**GHS label elements:**

**Hazard pictogram:**



**Signal word:**

Danger

**Hazard statement:** H225 Highly flammable liquid and vapor.  
H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.

**Precaution:**

**Prevention:** P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P233 Keep container tightly closed.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ventilating/lighting/equipment.  
P242 Use only non-sparking tools.  
P243 Take precautionary measures against static discharge.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264 Wash hands thoroughly after handling.  
P280 Wear protective gloves, eye protection, and face protection.

**Response:** P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304+P340+P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337+P313 If eye irritation persists: Get medical advice/attention.  
P370+P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

**Storage:** P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P403+P235 Store in a well-ventilated place. Keep cool.

**Disposal:** P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Section 3. Composition / information on ingredients**

**Substance or Mixture:**  
Mixture

**Declaration of hazardous chemical:**

Hazard component CAS-No.	Content	GHS Classification
Propan-2-ol 67-63-0	60- 100 %	Flammable liquids 2 H225 Serious eye damage/eye irritation 2 H319 Target Organ Systemic Toxicant - Single exposure 3 H336
Adipic acid 124-04-9	1- 10 %	Serious eye damage/eye irritation 2 H319
Biphenyl-2-ol 90-43-7	0.1- 1 %	Skin irritation 2 H315 Serious eye damage/eye irritation 2 H319 Target Organ Systemic Toxicant - Single exposure 3 H335 Acute hazards to the aquatic environment 1 H400 Chronic hazards to the aquatic environment 1 H410

#### Section 4. First aid measures

<b>Inhalation:</b>	Move to fresh air. If symptoms persist, seek medical advice.
<b>Skin contact:</b>	Rinse with running water and soap. Obtain medical attention if irritation persists.
<b>Eye contact:</b>	Rinse immediately with plenty of running water (for 10 minutes). Seek medical attention if necessary.
<b>Ingestion:</b>	Do not induce vomiting. Seek medical advice.
<b>Symptoms/effects, acute and delayed:</b>	Other pre-existing skin conditions.  Pre-existing skin, respiratory, central nervous system, liver and kidney conditions may be susceptible.
<b>Indication of immediate medical attention and special treatment needed:</b>	See section: Description of first aid measures

#### Section 5. Fire fighting measures

<b>Suitable extinguishing media:</b>	Alcohol-resistant foam.
<b>Specific hazards arising from the chemical:</b>	Can form explosive gas/air mixtures.
<b>Special protection equipment and precautions for firefighters:</b>	Wear self-contained breathing apparatus.
<b>Hazardous combustion products:</b>	Oxides of carbon. Thermal decomposition can lead to release of irritating gases and vapors.

#### Section 6. Accidental release measures

<b>Personal precautions:</b>	Avoid contact with skin and eyes. Wear protective equipment.
<b>Environmental precautions:</b>	Do not let product enter drains. Prevent further leakage or spillage if safe to do so.
<b>Clean-up methods:</b>	Remove all sources of ignition. For small spills wipe up with paper towel and place in container for disposal. For large spills absorb onto inert absorbent material and place in sealed container for disposal.

#### Section 7. Handling and storage

<b>Handling:</b>	Use only in well-ventilated areas. Keep away from sources of ignition - no smoking. Wear suitable protective clothing, safety glasses and gloves. Wash hands before breaks and immediately after handling the product. See advice in section 8
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**Storage:** Ensure good ventilation/extraction. Store in a cool, well-ventilated place.  
Keep away from sources of ignition.

### Section 8. Exposure controls / personal protection

Components with specific control parameters for workplace:

2-PROPANOL 67-63-0	<b>Value type</b>	Time Weighted Average (TWA):
	<b>ppm</b>	200
	<b>Remarks</b>	ACGIH
ISOPROPYL ALCOHOL 67-63-0	<b>Value type</b>	Time Weighted Average (TWA):
	<b>ppm</b>	400
	<b>mg/m<sup>3</sup></b>	983
<b>Remarks</b>	SG PEL	
2-PROPANOL 67-63-0	<b>Value type</b>	Short Term Exposure Limit (STEL):
	<b>ppm</b>	400
	<b>Remarks</b>	ACGIH
ISOPROPYL ALCOHOL 67-63-0	<b>Value type</b>	Short Term Exposure Limit (STEL):
	<b>ppm</b>	500
	<b>mg/m<sup>3</sup></b>	1,230
<b>Remarks</b>	SG PEL	
ADIPIC ACID 124-04-9	<b>Value type</b>	Time Weighted Average (TWA):
	<b>mg/m<sup>3</sup></b>	5
	<b>Remarks</b>	ACGIH
ADIPIC ACID 124-04-9	<b>Value type</b>	Time Weighted Average (TWA):
	<b>mg/m<sup>3</sup></b>	5
	<b>Remarks</b>	SG PEL

**Respiratory protection:** Ensure adequate ventilation.  
An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area  
Filter type: A (EN 14387)

**Hand protection:** Chemical-resistant protective gloves (EN 374).  
Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374):  
nitrile rubber (NBR; >= 0.4 mm thickness)  
Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):  
nitrile rubber (NBR; >= 0.4 mm thickness)  
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

**Eye protection:** Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing.  
Protective eye equipment should conform to EN166.

**Body protection:** Wear suitable protective clothing.  
Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

<b>Engineering controls:</b>	Ensure adequate ventilation, especially in confined areas. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Extraction is necessary to remove fumes evolved during reflow.
<b>Hygienic measures:</b>	Good industrial hygiene practices should be observed. Wash hands before work breaks and after finishing work. Do not eat, drink or smoke while working.

### Section 9. Physical and chemical properties

<b>Appearance:</b>	colourless liquid
<b>Odor:</b>	alcohol-like
<b>Odor threshold (CA):</b>	No data available.
<b>pH:</b>	Not applicable
<b>Melting point / freezing point:</b>	No data available.
<b>Specific gravity:</b>	0.79
<b>Boiling point:</b>	82 °C (179.6 °F)
<b>Flash point:</b>	12 °C (53.6 °F)
<b>Evaporation rate:</b>	No data available.
<b>Flammability (solid, gas):</b>	No data available.
<b>Lower explosive limit:</b>	2 % (V)
<b>Upper explosive limit:</b>	12 % (V)
<b>Vapor pressure:</b> (; 25 °C (77 °F))	6.6 kPa
<b>Vapor density:</b>	No data available.
<b>Density:</b>	0.816 g/cm <sup>3</sup>
<b>Solubility:</b>	No data available.
<b>Partition coefficient: n-octanol/water:</b>	Not determined
<b>Auto ignition:</b>	No data available.
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.
<b>VOC content:</b> (2010/75/EC)	85 - 95 %

### Section 10. Stability and reactivity

<b>Reactivity/Incompatible materials:</b>	Reaction with strong oxidants.
<b>Chemical stability:</b>	Dissolves aluminium and zinc slowly with formation of hydrogen.
<b>Conditions to avoid:</b>	Stable under recommended storage conditions.
<b>Hazardous decomposition products:</b>	No decomposition if stored and applied as directed. Thermal decomposition can lead to release of irritating gases and vapors.

### Section 11. Toxicological information

Symptoms of Overexposure: EYE: Irritation, conjunctivitis.  
Vapors may cause drowsiness and dizziness.  
Flux fumes may irritate the nose, throat and lungs and may after prolonged/repeated exposure give an allergic reaction (asthma).

**Acute oral toxicity:**

Propan-2-ol 67-63-0	Value type	LD50
	Value	5,840 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)
Adipic acid 124-04-9	Value type	LD50
	Value	5,560 mg/kg
	Species	rat
	Method	
Biphenyl-2-ol 90-43-7	Value type	LD50
	Value	2,733 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)

**Acute inhalative toxicity:**

Propan-2-ol 67-63-0	Value type	LC50
	Value	72.6 mg/l
	Exposure time	4 h
	Species	rat
	Method	
Adipic acid 124-04-9	Value type	LC50
	Value	> 7.7 mg/l
	Exposure time	4 h
	Species	rat
	Method	

**Acute dermal toxicity:**

Propan-2-ol 67-63-0	Value type	LD50
	Value	12,870 mg/kg
	Species	rabbit
	Method	
Biphenyl-2-ol 90-43-7	Value type	LD50
	Value	> 5,000 mg/kg
	Species	rabbit
	Method	

**Skin corrosion/irritation:**

Propan-2-ol 67-63-0	Result	slightly irritating
	Exposure time	4 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Adipic acid 124-04-9	Result	slightly irritating
	Exposure time	
	Species	rabbit
	Method	
Biphenyl-2-ol 90-43-7	Result	irritating
	Exposure time	4 h
	Species	rabbit
	Method	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

**Serious eye damage/irritation:**

Propan-2-ol 67-63-0	Result	moderately irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Adipic acid 124-04-9	Result	moderately irritating
	Exposure time	
	Species	rabbit
	Method	
Biphenyl-2-ol 90-43-7	Result	irritating
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

**Respiratory or skin sensitization:**

Propan-2-ol 67-63-0	Result	not sensitising
	Test type	Buehler test
	Species	guinea pig
	Method	OECD Guideline 406 (Skin Sensitisation)
Adipic acid 124-04-9	Result	not sensitising
	Test type	
	Species	guinea pig
	Method	
Biphenyl-2-ol 90-43-7	Result	not sensitising
	Test type	Guinea pig maximisation test
	Species	guinea pig
	Method	

**Germ cell mutagenicity:**

Propan-2-ol 67-63-0	Result	negative with metabolic activation
	Type of study / Route of administration	mammalian cell gene mutation assay
	Metabolic activation / Exposure time	with and without
	Method	OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Propan-2-ol 67-63-0	Result	negative
	Type of study / Route of administration	intraperitoneal
	Metabolic activation / Exposure time	
	Species	mouse
Adipic acid 124-04-9	Result	negative
	Type of study / Route of administration	bacterial reverse mutation assay (e.g Ames test)
	Metabolic activation / Exposure time	with and without
	Method	

**Repeated dose toxicity:**

Propan-2-ol 67-63-0	Result	
	Route of application	inhalation: vapour
	Exposure time / Frequency of treatment	at least 104 w6 h/d, 5 d/w
	Species	rat
Method		

**Section 12. Ecological information****Ecotoxicity:**

Do not empty into drains / surface water / ground water.

**Toxicity:**

Propan-2-ol 67-63-0	Value type	LC50
	Value	> 9,640 - 10,000 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Pimephales promelas
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)

Propan-2-ol 67-63-0	Value type	EC50
	Value	> 1,000 mg/l
	Acute Toxicity Study	Algae
	Exposure time	96 h
	Species	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	NOEC
	Value	1,000 mg/l
	Acute Toxicity Study	Algae
	Exposure time	96 h
	Species	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Propan-2-ol 67-63-0	Value type	EC 50
	Value	> 1,000 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	
	Method	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Adipic acid 124-04-9	Value type	LC50
	Value	97 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Pimephales promelas
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Adipic acid 124-04-9	Value type	EC50
	Value	85.7 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Adipic acid 124-04-9	Value type	EC50
	Value	> 100 mg/l
	Acute Toxicity Study	Algae
	Exposure time	
	Species	
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	EC0
	Value	> 100 mg/l
	Acute Toxicity Study	Algae
	Exposure time	
	Species	
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Adipic acid 124-04-9	Value type	EC0
	Value	10,000 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	16 h
	Species	
	Method	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm-Test)
Biphenyl-2-ol 90-43-7	Value type	LC50
	Value	4.5 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Brachydanio rerio (new name: Danio rerio)
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
	Value type	NOEC
	Value	0.036 mg/l
	Acute Toxicity Study	Fish
	Exposure time	21 d
	Species	Pimephales promelas
	Method	other guideline:
Biphenyl-2-ol 90-43-7	Value type	EC50
	Value	2.7 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Biphenyl-2-ol 90-43-7	Value type	EC50
	Value	0.98 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)



	Value type	NOEC
	Value	0.468 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Selenastrum capricornutum (new name: Pseudokirchnerella subcapitata)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Biphenyl-2-ol 90-43-7	Value type	EC50
	Value	56 mg/l
	Acute Toxicity Study	Bacteria
	Exposure time	3 h
	Species	activated sludge of a predominantly domestic sewage
	Method	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)

**Persistence and degradability:**

Propan-2-ol 67-63-0	Result	readily biodegradable
	Route of application	aerobic
	Degradability	70 - 84 %
	Method	EU Method C.4-E (Determination of the "Ready" Biodegradability Closed Bottle Test)
Adipic acid 124-04-9	Result	inherently biodegradable
	Route of application	no data
	Degradability	100 %
	Method	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)
	Result	readily biodegradable
	Route of application	no data
	Degradability	96 %
	Method	OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test)
Biphenyl-2-ol 90-43-7	Result	readily biodegradable
	Route of application	aerobic
	Degradability	75.7 %
	Method	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)

**Bioaccumulative potential / Mobility in soil:**

Propan-2-ol 67-63-0	LogKow	0.05
	Temperature	
	Method	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Adipic acid 124-04-9	LogKow	0.081
	Temperature	25 °C
	Method	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
Biphenyl-2-ol 90-43-7	Bioconcentration factor (BCF)	21.7
	Exposure time	53 h
	Species	Danio rerio (reported as Brachydanio rerio)
	Temperature	
	Method	OECD Guideline 305 (Bioconcentration: Flow-through Fish Test)
Biphenyl-2-ol 90-43-7	LogKow	3.18
	Temperature	22.5 °C
	Method	OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)

**Section 13. Disposal considerations****Product****Method of disposal:**

Dispose of as hazardous waste in compliance with local and national regulations. Incineration under controlled conditions is recommended.

**Packaging**

**Disposal of uncleaned packages:** Dispose of as unused product.

**Section 14. Transport information**

**Road transport ADR:**

Class: 3  
Packing group: II  
Classification code: F1  
Hazard ident. number: 33  
UN no.: 1219  
Label: 3  
Technical name: ISOPROPANOL (solution)

**Railroad transport RID:**

Class: 3  
Packing group: II  
Classification code: F1  
Hazard ident. number: 33  
UN no.: 1219  
Label: 3  
Technical name: ISOPROPANOL (solution)

**Inland water transport ADN:**

Class: 3  
Packing group: II  
Classification code: F1  
Hazard ident. number: 33  
UN no.: 1219  
Label: 3  
Technical name: ISOPROPANOL (solution)

**Marine transport IMDG:**

Class: 3  
Packing group: II  
UN no.: 1219  
Label: 3  
EmS: F-E ,S-D  
Seawater pollutant: -  
Proper shipping name: ISOPROPANOL (solution)

**Air transport IATA:**

Class: 3  
Packing group: II  
Packaging instructions (passenger): 353  
Packaging instructions (cargo): 364  
UN no.: 1219  
Label: 3  
Proper shipping name: Isopropanol (solution)

### Section 15. Regulatory information

**Regulatory Information:** Workplace Safety And Health Act (Chapter 354A) Workplace Safety And Health (Approved Codes of Practice) Notification 2013 SS586 Specification for Hazard Communication for hazardous chemicals and dangerous good Part 1,2,3

**Global inventory status:**

Regulatory list	Notification
EINECS	yes
TSCA	yes
NDSL	yes
ENCS (JP)	yes
KECI (KR)	yes
IECSC	yes
ISHL (JP)	yes

### Section 16. Other information

**Disclaimer:** This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.