



Safety Data Sheet according to (EC) No 1907/2006

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6381-35 LIQUID FLUX

sds no. : 182779
V004.1

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

Product identifier:

6381-35 LIQUID FLUX

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

Intended use:
Liquid Flux

Details of the supplier of the safety data sheet:

Henkel Limited
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Great Britain

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Emergency Telephone Number:

24 Hours Emergency Tel: +44 (0)1442 278497

SECTION 2: Hazards identification

Classification of the substance or mixture:

Classification (DPD):

F - Highly flammable
R11 Highly flammable.
Sensitizing
R43 May cause sensitisation by skin contact.
Xi - Irritant
R36 Irritating to eyes.
R67 Vapours may cause drowsiness and dizziness.

Label elements (DPD):

Xi - Irritant



F - Highly flammable

**Risk phrases:**

- R11 Highly flammable.
- R36 Irritating to eyes.
- R43 May cause sensitisation by skin contact.
- R67 Vapours may cause drowsiness and dizziness.

Safety phrases:

- S16 Keep away from sources of ignition - No smoking.
- S24 Avoid contact with skin.
- S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S37 Wear suitable gloves.
- S51 Use only in well-ventilated areas.

Additional information:

When heated fumes may cause sensitisation by inhalation.

Contains:

Rosin

Other hazards:

Fumes evolved at soldering temperatures will irritate the nose, throat and lungs. Prolonged or repeated exposure to flux fumes may result in sensitisation in sensitive workers.

SECTION 3: Composition/information on ingredients**Declaration of the ingredients according to CLP (EC) No 1272/2008:**

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
Propan-2-ol 67-63-0	200-661-7	40- 50 %	Specific target organ toxicity - single exposure 3 H336 Flammable liquids 2 H225 Serious eye irritation 2 H319
Rosin 8050-09-7	232-475-7	30- 40 %	Skin sensitizer 1 H317
2-(2-Butoxyethoxy)ethanol 112-34-5	203-961-6	10- 20 %	Serious eye irritation 2 H319
Distillates (petroleum), hydrotreated light 64742-47-8	265-149-8	1- 5 %	Aspiration hazard 1 H304

Only dangerous ingredients for which a CLP classification is already available are displayed in this table. For full text of the H - statements and other abbreviations see section 16 "Other information". Substances without classification may have community workplace exposure limits available.

Declaration of ingredients according to DPD (EC) No 1999/45:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
Propan-2-ol 67-63-0	200-661-7	40 - 50 %	Xi - Irritant; R36 F - Highly flammable; R11 R67
Rosin 8050-09-7	232-475-7	30 - 40 %	R43
2-(2-Butoxyethoxy)ethanol 112-34-5	203-961-6	10 - 20 %	Xi - Irritant; R36
Distillates (petroleum), hydrotreated light 64742-47-8	265-149-8	1 - 5 %	Xn - Harmful; R65

For full text of the R-Phrases indicated by codes see section 16 'Other Information'.
Substances without classification may have community workplace exposure limits available.

SECTION 4: First aid measures**Description of first aid measures:****Inhalation:**

Move to fresh air. If symptoms persist, seek medical advice.

Skin contact:

Rinse with running water and soap.
Seek medical advice.

Eye contact:

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Seek medical advice.

Ingestion:

Do not induce vomiting.
Seek medical advice.

Most important symptoms and effects, both acute and delayed:

SKIN: Rash, Urticaria.

EYE: Irritation, conjunctivitis.

Indication of any immediate medical attention and special treatment needed:

See section: Description of first aid measures

SECTION 5: Firefighting measures**Extinguishing media:****Suitable extinguishing media:**

Alcohol-resistant foam.
Carbon dioxide.
Dry powder.

Special hazards arising from the substance or mixture:

Can form explosive gas/air mixtures.

Oxides of carbon.

Thermal decomposition can lead to release of irritating gases and vapors.

Advice for firefighters:

Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

- Avoid contact with skin and eyes.
- Wear protective equipment.

Environmental precautions:

- Do not let product enter drains.
- Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up:

- 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.

Reference to other sections:

- See advice in chapter 8

SECTION 7: Handling and storage

Precautions for safe handling:

- Use only in well-ventilated areas.
- Keep away from sources of ignition - no smoking.
- Wear suitable protective clothing, safety glasses and gloves.
- See advice in chapter 8
- Take measures to prevent the build-up of electrostatic charges.

Hygiene measures:

- Good industrial hygiene practices should be observed.
- Wash hands before work breaks and after finishing work.
- Do not eat, drink or smoke while working.

Conditions for safe storage, including any incompatibilities:

- Ensure good ventilation/extraction.
- Store in a cool, well-ventilated place.
- Keep away from sources of ignition.

Specific end use(s):

- Liquid Flux

SECTION 8: Exposure controls/personal protection

Control parameters:

Valid for
Great Britain

Ingredient	ppm	mg/m ³	Type	Category	Remarks
PROPAN-2-OL 67-63-0	400	999	Time Weighted Average (TWA):		EH40 WEL
PROPAN-2-OL 67-63-0	500	1.250	Short Term Exposure Limit (STEL):		EH40 WEL
ROSIN-BASED SOLDER FLUX FUME 8050-09-7		0,05	Time Weighted Average (TWA):		EH40 WEL
ROSIN-BASED SOLDER FLUX FUME 8050-09-7		0,15	Short Term Exposure Limit (STEL):		EH40 WEL
2-(2-BUTOXYETHOXY)ETHANOL 112-34-5	10	67,5	Time Weighted Average (TWA):		EH40 WEL
2-(2-BUTOXYETHOXY)ETHANOL 112-34-5	15	101,2	Short Term Exposure Limit (STEL):		EH40 WEL
2-(2-BUTOXYETHOXY)ETHANOL 112-34-5	15	101,2	Short Term Exposure Limit (STEL):	Indicative	ECTLV
2-(2-BUTOXYETHOXY)ETHANOL 112-34-5	10	67,5	Time Weighted Average (TWA):	Indicative	ECTLV

Colophony (Rosin) and derivatives: Rosin-based flux fume as total resin acids.

Exposure controls:

Engineering controls:

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.

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

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.

Skin protection:

Wear suitable protective clothing.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties:

Appearance	liquid yellow
Odor	alcohol-like

pH	not applicable
Initial boiling point	82,0 °C (179.6 °F)
Flash point	12,0 °C (53.6 °F)
Decomposition temperature	No data available / Not applicable
Vapour pressure (25,0 °C (77 °F))	6,6 kPa
Density (25 °C (77 °F))	0,897 g/cm ³
Bulk density	No data available / Not applicable
Viscosity	No data available / Not applicable
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Solubility (qualitative) (Solvent: Water)	Partially miscible
Solidification temperature	No data available / Not applicable
Melting point	No data available / Not applicable
Flammability	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Explosive limits	
lower	2,00 %(V)
upper	12,00 %(V)
Partition coefficient: n-octanol/water	Not determined
Evaporation rate	No data available / Not applicable
Vapor density	No data available / Not applicable
Oxidising properties	No data available / Not applicable

Other information:

No data available / Not applicable

SECTION 10: Stability and reactivity**Reactivity:**

Reaction with strong oxidants.
Dissolves aluminium and zinc slowly with formation of hydrogen.

Chemical stability:

Stable under recommended storage conditions.

Possibility of hazardous reactions:

See section reactivity

Conditions to avoid:

No decomposition if stored and applied as directed.

Incompatible materials:

None if used properly.

Hazardous decomposition products:

Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 11: Toxicological information**General toxicological information:**

The preparation is classified based on the conventional method outlined in Article 6(1)(a) of Directive 1999/45/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Oral toxicity:

May cause irritation to the digestive tract.
Ingestion of large quantities may cause liver or kidney damage.

Inhalative toxicity:

Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
Fumes evolved at soldering temperatures will irritate the nose, throat and lungs. Prolonged or repeated exposure to flux fumes may result in sensitisation in sensitive workers.

Skin irritation:

Prolonged or repeated contact may cause skin irritation.

Eye irritation:

Irritating to eyes.

Liquid may cause conjunctival irritation.

Sensitizing:

May cause sensitization by skin contact.

Acute toxicity:

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Propan-2-ol 67-63-0	LD50 LC50 LD50	5.338 mg/kg 72,6 mg/l 12.870 mg/kg	oral inhalation dermal	4 h	rat rat rabbit	
2-(2- Butoxyethoxy)ethanol 112-34-5	LD50 LD50	> 2.000 mg/kg 2.800 mg/kg	oral dermal		rat rabbit	EU Method B.1 (Acute Toxicity (Oral))

Skin corrosion/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Propan-2-ol 67-63-0	slightly irritating	4 h	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
2-(2- Butoxyethoxy)ethanol 112-34-5	not irritating		rabbit	
Distillates (petroleum), hydrotreated light 64742-47-8	moderately irritating		rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Propan-2-ol 67-63-0	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
2-(2- Butoxyethoxy)ethanol 112-34-5	not irritating		rabbit	

Respiratory or skin sensitization:

Hazardous components CAS-No.	Result	Test type	Species	Method
Propan-2-ol 67-63-0	not sensitising	Buehler test	guinea pig	
2-(2- Butoxyethoxy)ethanol 112-34-5	not sensitising	Guinea pig maximisat ion test	guinea pig	

Germ cell mutagenicity:

Hazardous components CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Propan-2-ol 67-63-0	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		
2-(2- Butoxyethoxy)ethanol 112-34-5	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)

Repeated dose toxicity

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
Propan-2-ol 67-63-0	NOAEL=1500	inhalation	13 weeks 6 hours/day, 5 days/week	mouse	
2-(2-Butoxyethoxy)ethanol 112-34-5	NOAEL=> 2000 mg/kg		13 weeks 6 hours/day, 5 days/week	rat	
2-(2-Butoxyethoxy)ethanol 112-34-5	NOAEL=< 50 mg/kg	oral: gavage	90 days 5 days/week	rat	
2-(2-Butoxyethoxy)ethanol 112-34-5	NOAEL=2 - 6 ppm	inhalation	90 days	rat	

SECTION 12: Ecological information**General ecological information:**

The preparation is classified based on the conventional method outlined in Article 6(1)(a) of Directive 1999/45/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

Ecotoxicity:

May cause long-term adverse effects in the aquatic environment.

Mobility:

No data available.

Bioaccumulative potential:

Octanol/Water distribution coefficient: Not determined

Toxicity:

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
Propan-2-ol 67-63-0	LC50	9.640 mg/l	Fish	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
Propan-2-ol 67-63-0	EC50	13.299 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Propan-2-ol 67-63-0	EC50	> 1.000 mg/l	Algae	96 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Rosin 8050-09-7	LC50	> 1.000 mg/l	Fish	96 h	Pimephales promelas	OECD Guideline 203 (Fish, Acute Toxicity Test)
Rosin 8050-09-7	EC50	911 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Rosin 8050-09-7	EC50	> 100 mg/l	Algae	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
2-(2-Butoxyethoxy)ethanol 112-34-5	LC50	1.300 mg/l	Fish	96 h	Lepomis macrochirus	OECD Guideline 203 (Fish, Acute Toxicity Test)
2-(2-Butoxyethoxy)ethanol 112-34-5	EC50	3.300 mg/l	Daphnia	24 h	Daphnia magna	
2-(2-Butoxyethoxy)ethanol 112-34-5	EC50	> 100 mg/l	Algae	96 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)

Persistence and degradability:

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
Propan-2-ol 67-63-0	readily biodegradable	aerobic	95 %	OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test)
Rosin 8050-09-7		aerobic	36 - 46 %	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
2-(2-Butoxyethoxy)ethanol 112-34-5	readily biodegradable	aerobic	94 %	OECD Guideline 301 A (new version) (Ready Biodegradability: DOC Die Away Test)

Bioaccumulative potential / Mobility in soil:

Hazardous components CAS-No.	LogKow	Bioconcentration factor (BCF)	Exposure time	Species	Temperature	Method
Propan-2-ol 67-63-0	0,05					OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method)
2-(2-Butoxyethoxy)ethanol 112-34-5	0,56					

SECTION 13: Disposal considerations**Waste treatment methods:**

Product disposal:

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

Disposal of uncleaned packages:

Dispose of as unused product.

Waste code

14 06 03 - other solvents and solvent mixtures

SECTION 14: Transport information**Road transport ADR:**

Class: 3
Packaging group: II
Classification code: F1
Hazard ident. number: 33
UN no.: 1219
Label: 3
Technical name: ISOPROPANOL (solution)
Tunnelcode: (D/E)

Railroad transport RID:

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

Inland water transport ADN:

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

Marine transport IMDG:

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

Air transport IATA:

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

SECTION 15: Regulatory information**Safety, health and environmental regulations/legislation specific for the substance or mixture:**

VOC content 60 - 70 %
(1999/13/EC)

National regulations/information (Great Britain):

Remarks

The Health & Safety at Work Act 1974.
The Control of Substances Hazardous to Health Regulations. L5:General
Approved Code of Practice to the COSHH Regulations. HS(G)97:A Step by Step
Guide to the COSHH Regulations. HS(G)193: COSHH essentials: Easy steps to
control chemicals.
HS(G)51: The Storage of Highly Flammable Liquids in Containers.
HS(G)140: The Safe Use and Handling of Highly Flammable Liquids EH9: The
Spraying of Highly Flammable Liquids.
IND (G)248L: Solder fume and you. IND(G)249L: Controlling health risks from
rosin (colophony) based solder fluxes.

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

R11 Highly flammable.
R36 Irritating to eyes.
R43 May cause sensitisation by skin contact.
R65 Harmful: may cause lung damage if swallowed.
R67 Vapours may cause drowsiness and dizziness.

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.
H336 May cause drowsiness or dizziness.

Further information:

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.

This safety data sheet was prepared in accordance with Council Directive 67/548/EEC and its subsequent amendments, and Commission Directive 1999/45/EC.