

SAFETY DATA SHEET

LEAD FREE FLUX REMOVER

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

1.1. Product identifier

Product name LEAD FREE FLUX REMOVER
 Product No. LFFR-b, ELFFR05L, ZE

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

Identified uses Manufacture of electrical equipment
 Uses advised against At this moment in time we do not have information on use restrictions. They will be included in this safety data sheet when available

1.3. Details of the supplier of the safety data sheet

Supplier ELECTROLUBE. A division of HK
 WENTWORTH LTD
 ASHBY PARK, COALFIELD WAY,
 ASHBY DE LA ZOUCH, LEICESTERSHIRE
 LE65 1JR
 UNITED KINGDOM
 +44 (0)1530 419600
 +44 (0)1530 416640
 info@hkw.co.uk

1.4. Emergency telephone number

+44 (0)1530 419600 between 8.30am - 5.00pm GMT Mon – Fri

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical and Chemical Hazards	Flam. Liq. 2 - H225
Human health	Skin Irrit. 2 - H315; Eye Irrit. 2 - H319; Skin Sens. 1 - H317; STOT SE 3 - H336; Asp. Tox. 1 - H304
Environment	Aquatic Acute 1 - H400; Aquatic Chronic 1 - H410

Classification (1999/45/EEC)

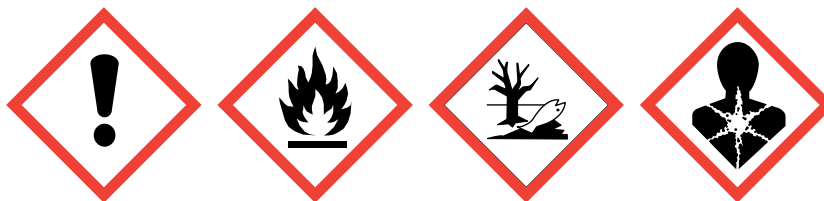
Xn; R65. Xi; R36/38. R43. F; R11. N; R50/53. R67.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

2.2. Label elements

Contains CYCLOHEXANE
 Orange Terpenes

Label In Accordance With (EC) No. 1272/2008



Signal Word

Danger

Hazard Statements

H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.

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Precautionary Statements	H315	Causes skin irritation.
	H317	May cause an allergic skin reaction.
	H319	Causes serious eye irritation.
	H336	May cause drowsiness or dizziness.
	H410	Very toxic to aquatic life with long lasting effects.
Precautionary Statements	P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
	P271	Use only outdoors or in a well-ventilated area.
	P280	Wear protective gloves, eye and face protection.
Supplementary Precautionary Statements		
	P261	Avoid breathing vapour/spray.
	P301+310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
	P302+352	IF ON SKIN: Wash with plenty of soap and water.
	P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P313	Get medical advice/attention.
	P331	Do NOT induce vomiting.
	P333+313	If skin irritation or rash occurs: Get medical advice/attention.

2.3. Other hazards

Not Classified as PBT/vPvB by current EU criteria.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

CYCLOHEXANE		30-60%
CAS-No.: 110-82-7	EC No.: 203-806-2	
Classification (EC 1272/2008)	Classification (67/548/EEC)	
Flam. Liq. 2 - H225	F;R11	
Skin Irrit. 2 - H315	Xn;R65	
STOT SE 3 - H336	Xi;R38	
Asp. Tox. 1 - H304	R67	
Aquatic Acute 1 - H400	N;R50/53	
Aquatic Chronic 1 - H410		
PROPAN-2-OL		10-30%
CAS-No.: 67-63-0	EC No.: 200-661-7	
Classification (EC 1272/2008)	Classification (67/548/EEC)	
Flam. Liq. 2 - H225	F;R11	
Eye Irrit. 2 - H319	Xi;R36	
STOT SE 3 - H336	R67	
1-METHOXY-2-PROPANOL		10-30%
CAS-No.: 107-98-2	EC No.: 203-539-1	
Classification (EC 1272/2008)	Classification (67/548/EEC)	
Flam. Liq. 3 - H226	R10	
STOT SE 3 - H336	R67	

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HEXANE MIXTURE OF ISOMERS (MAX 5% n-HEXANE (203-777-6))		5-10%
CAS-No.: -	EC No.: -	
Classification (EC 1272/2008) Flam. Liq. 2 - H225 Skin Irrit. 2 - H315 STOT SE 3 - H336 Asp. Tox. 1 - H304 Aquatic Chronic 2 - H411	Classification (67/548/EEC) F;R11 Xn;R65 Xi;R38 R67 N;R51/53	
Orange Terpenes		1-5%
CAS-No.: 8028-48-6	EC No.: 232-433-8	
Classification (EC 1272/2008) Flam. Liq. 3 - H226 Skin Irrit. 2 - H315 Skin Sens. 1 - H317 Asp. Tox. 1 - H304 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410	Classification (67/548/EEC) Xn;R65. Xi;R38. N;R50/53. R10,R43.	
HEPTANE		1-5%
CAS-No.: 142-82-5	EC No.: 205-563-8	
Classification (EC 1272/2008) Flam. Liq. 2 - H225 Skin Irrit. 2 - H315 STOT SE 3 - H336 Asp. Tox. 1 - H304 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410	Classification (67/548/EEC) F;R11 Xn;R65 Xi;R38 R67 N;R50/53	
HEXANE-norm		< 1%
CAS-No.: 110-54-3	EC No.: 203-777-6	
Classification (EC 1272/2008) Flam. Liq. 2 - H225 Skin Irrit. 2 - H315 Repr. 2 - H361f STOT SE 3 - H336 STOT RE 2 - H373 Asp. Tox. 1 - H304 Aquatic Chronic 2 - H411	Classification (67/548/EEC) F;R11 Repr. Cat. 3;R62 Xn;R48/20,R65 Xi;R38 R67 N;R51/53	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition Comments

Ingredients not listed are classified as non-hazardous or at a concentration below reportable levels.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation

Move the exposed person to fresh air at once. Keep the affected person warm and at rest. Get prompt medical attention.

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Ingestion

DO NOT INDUCE VOMITING! Rinse mouth thoroughly. Provide rest, warmth and fresh air. Get medical attention immediately!

Skin contact

Remove affected person from source of contamination. Wash the skin immediately with soap and water. Get medical attention if irritation persists after washing.

Eye contact

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Contact physician if irritation persists.

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

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

Treat Symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media

Fire can be extinguished using: Foam. Dry chemicals, sand, dolomite etc.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

Unusual Fire & Explosion Hazards

No unusual fire or explosion hazards noted.

Specific hazards

The product is flammable, and heating may generate vapours which may form explosive vapour/air mixtures.

5.3. Advice for firefighters

Special Fire Fighting Procedures

Avoid breathing fire vapours. Cool containers exposed to flames with water until well after the fire is out. Keep run-off water out of sewers and water sources. Dike for water control.

Protective equipment for fire-fighters

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Do not discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Clean-up personnel should use respiratory and/or liquid contact protection. Absorb in vermiculite, dry sand or earth and place into containers.

6.4. Reference to other sections

Wear protective clothing as described in Section 8 of this safety data sheet. See section 11 for additional information on health hazards. Collect and dispose of spillage as indicated in section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Avoid spilling, skin and eye contact. Keep away from heat, sparks and open flame. Ventilate well, avoid breathing vapours. Use approved respirator if air contamination is above accepted level. Use explosion proof electric equipment.

7.2. Conditions for safe storage, including any incompatibilities

Flammable/combustible - Keep away from oxidisers, heat and flames. Store in tightly closed original container in a dry, cool and well-ventilated place. Keep in original container.

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7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Name	STD	TWA - 8 Hrs		STEL - 15 Min		Notes
1-METHOXY-2-PROPANOL	WEL	100 ppm	375 mg/m3	150 ppm	560 mg/m3	Sk
CYCLOHEXANE	WEL	100 ppm	350 mg/m3	300 ppm	1050 mg/m3	
HEPTANE	WEL	500 ppm				
PROPAN-2-OL	WEL	400 ppm	999 mg/m3	500 ppm	1250 mg/m3	

WEL = Workplace Exposure Limit.

Sk = Can be absorbed through skin.

Ingredient Comments

WEL = Workplace Exposure Limits

PROPAN-2-OL (CAS: 67-63-0)

DNEL

Industry	Dermal	888	mg/kg/day
Industry	Inhalation.	500	mg/m3
Consumer	Dermal	319	mg/kg/day
Consumer	Inhalation.	89	mg/m3
Consumer	Oral	26	mg/kg/day

PNEC

Freshwater	140.9	mg/l
Marinewater	140.9	mg/l
Sediment	552	mg/kg
Soil	28	mg/kg

8.2. Exposure controls

Protective equipment



Engineering measures

Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Observe occupational exposure limits and minimize the risk of inhalation of vapours.

Respiratory equipment

In case of inadequate ventilation and work of brief duration, use suitable respiratory equipment. Use respiratory equipment with combination filter, type A2/P3. EN14387

Hand protection

Use suitable protective gloves if risk of skin contact. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material. Gloves of nitrile rubber, PVA or Viton are recommended. Gloves should conform to EN374

Eye protection

Wear approved chemical safety goggles where eye exposure is reasonably probable. EN166

Other Protection

Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapour contact.

Hygiene measures

DO NOT SMOKE IN WORK AREA! Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash promptly with soap & water if skin becomes contaminated. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance

Liquid Clear

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Colour	Colourless.
Odour	Organic solvents.
Solubility	Insoluble in water Soluble in: Acetone Miscible with: Alcohol Chloroform Ether.
Initial boiling point and boiling range (°C)	>80
Relative density	0.78 @ 20 °c
Flash point (°C)	0 CC (Closed cup).
Auto Ignition Temperature (°C)	>200
Flammability Limit - Lower(%)	0.7
Flammability Limit - Upper(%)	8.3

9.2. Other information

None.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under normal temperature conditions.

10.3. Possibility of hazardous reactions

Not available.

Hazardous Polymerisation

Will not polymerise.

10.4. Conditions to avoid

Avoid heat. Avoid contact with oxidisers or reducing agents.

10.5. Incompatible materials

Materials To Avoid

Strong acids. Strong alkalis. Strong oxidising substances.

10.6. Hazardous decomposition products

Fire creates: Toxic gases/vapours/fumes of: Carbon monoxide (CO). Carbon dioxide (CO₂).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Inhalation

Vapours may cause headache, fatigue, dizziness and nausea. High concentrations of vapours may irritate respiratory system and lead to headache, fatigue, nausea and vomiting.

Ingestion

Harmful: may cause lung damage if swallowed.

Skin contact

Irritating to skin. May cause sensitisation by skin contact. Product has a defatting effect on skin. Prolonged contact may cause dryness of the skin.

Eye contact

Irritating to eyes.

Route of entry

Inhalation. Skin absorption.

Toxicological information on ingredients.

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HEPTANE (CAS: 142-82-5)

Toxic Dose 1 - LD 50

222 mg/kg (ivn-mouse)

Toxic Conc. - LC 50

103 ppm/4h (inh-rat)

CYCLOHEXANE (CAS: 110-82-7)

Toxic Dose 1 - LD 50

12705 mg/kg (oral rat)

Toxic Dose 2 - LD 50

813 mg/kg (oral-mouse)

HEXANE-norm (CAS: 110-54-3)

Toxic Dose 1 - LD 50

28700 mg/kg (oral rat)

Toxic Conc. - LC 50

48000 ppm/4h (inh-rat)

PROPAN-2-OL (CAS: 67-63-0)

Acute toxicity:

Acute Toxicity (Oral LD50)

5280 mg/kg Rat

Acute Toxicity (Dermal LD50)

12800 mg/kg Rabbit

Acute Toxicity (Inhalation LC50)

72.6 mg/l (vapours) Rat 4 hours

1-METHOXY-2-PROPANOL (CAS: 107-98-2)

Toxic Dose 1 - LD 50

5200 mg/kg (oral rat)

Toxic Dose 2 - LD 50

11700 mg/kg (oral-mouse)

Orange Terpenes (CAS: 8028-48-6)

Acute toxicity:

Acute Toxicity (Oral LD50)

5300 mg/kg Rat

Acute Toxicity (Dermal LD50)

> 5000 mg/kg Rabbit

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

Dangerous for the environment if discharged into watercourses.

12.1. Toxicity

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Ecological information on ingredients.

HEPTANE (CAS: 142-82-5)

LC 50, 96 Hrs, Fish mg/l
4.924

CYCLOHEXANE (CAS: 110-82-7)

LC 50, 96 Hrs, Fish mg/l
42.3

PROPAN-2-OL (CAS: 67-63-0)

Acute Toxicity - Fish

LC50 96 hours 9640 mg/l Pimephales promelas (Fat-head Minnow)

Acute Toxicity - Aquatic Invertebrates

EC50 48 hours 13299 mg/l Daphnia magna

Acute Toxicity - Aquatic Plants

EC50 72 hours > 1.000 mg/l Scenedesmus subspicatus

Acute Toxicity - Microorganisms

EC50 > 1.000 mg/l Activated sludge

1-METHOXY-2-PROPANOL (CAS: 107-98-2)

LC 50, 96 Hrs, Fish mg/l
20800
EC 50, 48 Hrs, Daphnia, mg/l
23300

Orange Terpenes (CAS: 8028-48-6)

Acute Toxicity - Fish

LC50 96 hours 0.71 mg/l Pimephales promelas (Fat-head Minnow)

Acute Toxicity - Aquatic Invertebrates

EC50 0.4 mg/l Daphnia magna

Acute Toxicity - Aquatic Plants

IC50 4 mg/l Selenastrum capricornutum

12.2. Persistence and degradability

Degradability

There are no data on the degradability of this product.

12.3. Bioaccumulative potential

Bioaccumulative potential

No data available on bioaccumulation.

12.4. Mobility in soil

Mobility:

The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces.

12.5. Results of PBT and vPvB assessment

This product does not contain any PBT or vPvB substances.

12.6. Other adverse effects

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Dispose of waste and residues in accordance with local authority requirements.

SECTION 14: TRANSPORT INFORMATION

14.1. UN number

UN No. (ADR/RID/ADN)	1993
UN No. (IMDG)	1993
UN No. (ICAO)	1993

14.2. UN proper shipping name

LEAD FREE FLUX REMOVER

Proper Shipping Name FLAMMABLE LIQUID, N.O.S. (CYCLOHEXANE)

14.3. Transport hazard class(es)

ADR/RID/ADN Class 3
ADR/RID/ADN Class Class 3: Flammable liquids.
ADR Label No. 3
IMDG Class 3
ICAO Class/Division 3
Transport Labels



14.4. Packing group

ADR/RID/ADN Packing group II
IMDG Packing group II
ICAO Packing group II

14.5. Environmental hazards

Environmentally Hazardous Substance/Marine Pollutant



14.6. Special precautions for user

EMS F-E, S-E
Emergency Action Code •3YE
Hazard No. (ADR) 33
Tunnel Restriction Code (D/E)

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

SECTION 15: REGULATORY INFORMATION

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

Statutory Instruments

The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (S.I 2009 No. 716). Control of Substances Hazardous to Health.

Guidance Notes

Workplace Exposure Limits EH40.

EU Legislation

Commission Directive 2000/39/EC of 8 June 2000 establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

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Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments.

Authorisations (Title VII Regulation 1907/2006)

No specific authorisations are noted for this product.

Restrictions (Title VIII Regulation 1907/2006)

No specific restrictions of use are noted for this product.

15.2. Chemical Safety Assessment

No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

Issued By	Helen O'Reilly
Revision Date	APRIL 2013
Revision	6
SDS No.	10368
Risk Phrases In Full	
R10	Flammable.
R48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R65	Harmful: may cause lung damage if swallowed.
R11	Highly flammable
R36/38	Irritating to eyes and skin.
R36	Irritating to eyes.
R38	Irritating to skin.
R43	May cause sensitisation by skin contact.
R62	Possible risk of impaired fertility.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R67	Vapours may cause drowsiness and dizziness.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Hazard Statements In Full	
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H226	Flammable liquid and vapour.
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H317	May cause an allergic skin reaction.
H373	May cause damage to organs <<Organs>> through prolonged or repeated exposure.
H336	May cause drowsiness or dizziness.
H361f	Suspected of damaging fertility.
H411	Toxic to aquatic life with long lasting effects.
H410	Very toxic to aquatic life with long lasting effects.
H400	Very toxic to aquatic life.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.