

Safety Data Sheet

according to Regulation (EU) 2015/830

SDS Ref.: LC_1407002

Date of issue: 5/26/2011 Revision date: 6/6/2017 Version: 3.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product form : Mixture
 Trade name : Regular Soldering Flux Paste

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

Main use category : Industrial use, Professional use
 Use of the substance/mixture : Soldering flux

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

LA-CO Industries Europe S.A.S.

Parc Industriel de la Plaine de

l'Ain - Allée des Combes.

01150.BLYES.France.

Phone: +33 (0)4 74 46 23 23

Fax: +33 (0)4 74 46 23 29

E-mail: info@eu.laco.com

Web: http://www.markal.com

1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887;
 全球应急中心 0532 8388 9090

| Country | Organisation/Company | Address | Emergency number | Comment |
|----------------|--|-----------------------------------|------------------|---------|
| United Kingdom | National Poisons Information Service (Birmingham Centre) City Hospital | Dudley Road B18 7QH Birmingham | 0344 892 0111 | |

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification according to Regulation (EC) No. 1272/2008 [CLP]**

Aquatic Chronic 3 H412

Full text of hazard classes and H-statements : see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

Signal word (CLP) : -
 Hazard statements (CLP) : H412 - Harmful to aquatic life with long lasting effects.
 Precautionary statements (CLP) : P273 - Avoid release to the environment.
 P501 - Dispose of contents and container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
 Unknown hazards to the aquatic environment (CLP) : Contains 0.03 % of components with unknown hazards to the aquatic environment

2.3. Other hazards

PBT: not yet assessed

vPvB: not yet assessed

SECTION 3: Composition/information on ingredients**3.1. Substances**

Not applicable

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3.2. Mixtures

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|----------------------------------|---|-----------|---|
| Ethanolamine hydrochloride | (CAS-No.) 2002-24-6 (EC-No.) 217-900-6 | 10 - 20 | Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 |
| Polyethylene Glycol | (CAS-No.) 25322-68-3 (EC-No.) 500-038-2 | 10 - 20 | Not classified |
| Poloxamer | (CAS-No.) 9003-11-6 | 10 - 20 | Not classified |
| Ammonium chloride | (CAS-No.) 12125-02-9 (EC-No.) 235-186-4 (EC Index-No.) 017-014-00-8 | 5 - 10 | Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 |
| 2,6-Di-tert-butyl-4-methylphenol | (CAS-No.) 128-37-0 (EC-No.) 204-881-4 | 0.1 - 0.5 | STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| Oleic acid | (CAS-No.) 112-80-1 (EC-No.) 204-007-1 | 0 - <0.1 | Not classified |
| Sodium hydroxide | (CAS-No.) 1310-73-2 (EC-No.) 215-185-5 (EC Index-No.) 011-002-00-6 | 0 - <0.1 | Skin Corr. 1A, H314 |

Specific concentration limits:

| Name | Product identifier | Specific concentration limits |
|------------------|--|---|
| Sodium hydroxide | (CAS-No.) 1310-73-2 (EC-No.) 215-185-5 (EC Index-No.) 011-002-00-6 | (0.5 =<C < 2) Eye Irrit. 2, H319 (0.5 =<C < 2) Skin Irrit. 2, H315 (2 =<C < 5) Skin Corr. 1B, H314 (5 =<C < 100) Skin Corr. 1A, H314 |

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|---|
| First-aid measures general | : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). |
| First-aid measures after inhalation | : If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| First-aid measures after skin contact | : Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| First-aid measures after eye contact | : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| First-aid measures after ingestion | : Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER/doctor if you feel unwell. |

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

Symptoms/effects : No significant signs or symptoms indicative of any health hazard are expected to occur.

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

All treatments should be based on observed signs and symptoms of distress in the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media

| | |
|--------------------------------|--|
| Suitable extinguishing media | : Carbon dioxide. Dry powder. Foam. Water spray. |
| Unsuitable extinguishing media | : None known. |

5.2. Special hazards arising from the substance or mixture

| | |
|--|--|
| Fire hazard | : No specific fire or explosion hazard. |
| Explosion hazard | : Product is not explosive. |
| Hazardous decomposition products in case of fire | : Carbon monoxide. Carbon dioxide. ammonium oxides. hydrogen chloride. |

5.3. Advice for firefighters

| | |
|--------------------------------|---|
| Firefighting instructions | : Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers. Do not allow run-off from fire fighting to enter drains or water courses. |
| Protection during firefighting | : Do not enter fire area without proper protective equipment, including respiratory protection. Wear fire/flame resistant/retardant clothing. Wear a self contained breathing apparatus. EN469. |

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Wear suitable protective clothing and gloves. Nitrile gloves. Chemical goggles or safety glasses. In case of inadequate ventilation wear respiratory protection.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Wear suitable protective clothing and gloves. Neoprene or nitrile rubber gloves. Chemical goggles or safety glasses. Where excessive vapour, mist, or dust may result, use approved respiratory protection equipment.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Stop the flow of material, if this is without risk. Contain and/or absorb spill with inert material, then place in suitable container.

Methods for cleaning up : Take up in non-combustible absorbent material and shove into container for disposal. On land, sweep or shovel into suitable containers.

6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not eat, drink or smoke when using this product. Provide good ventilation in process area to prevent formation of vapour. Remove all sources of ignition.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool well ventilated place. Keep container closed when not in use.

Incompatible products : Strong oxidizing agents. Strong acids. Strong bases. amines. Acid chlorides. metals. Cyanides and sulfide salts.

Prohibitions on mixed storage : Keep away from incompatible materials.

7.3. Specific end use(s)

Flux.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

2,6-Di-tert-butyl-4-methylphenol (128-37-0)

| | | |
|----------------|---|----------------------|
| Germany | TRGS 910 Acceptable concentration notes | |
| United Kingdom | WEL TWA (mg/m ³) | 10 mg/m ³ |

Ammonium chloride (12125-02-9)

| | | |
|----------------|---|----------------------|
| Germany | TRGS 910 Acceptable concentration notes | |
| United Kingdom | WEL TWA (mg/m ³) | 10 mg/m ³ |
| United Kingdom | WEL STEL (mg/m ³) | 20 mg/m ³ |
| United Kingdom | Remark (WEL) | (fume) |

8.2. Exposure controls

Appropriate engineering controls:

Provide local exhaust ventilation of closed transfer systems to minimize exposures.

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:

It is a good industrial hygiene practice to minimize skin contact. Wear suitable gloves. Impermeable protective nitrile gloves. EN 374

Respiratory protection:

In case of inadequate ventilation wear respiratory protection. Use an approved respirator equipped with oil/mist cartridges. EN 12083

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Other information:

Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|-----------------------------|
| Physical state | : Liquid |
| Appearance | : Paste. |
| Colour | : yellowish to white. |
| Odour | : Faint. |
| Odour threshold | : No data available |
| pH | : 6.5 - 7 |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : No data available |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : > 204 °C (TOC) |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : No data available |
| Vapour pressure | : No data available |
| Relative vapour density at 20 °C | : No data available |
| Relative density | : 1.1 |
| Solubility | : Soluble in water. |
| Log Pow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : Product is not explosive. |
| Oxidising properties | : No oxidizing properties. |
| Explosive limits | : No data available |

9.2. Other information

| | |
|-------------|-------|
| VOC content | : 0 % |
|-------------|-------|

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Contact with incompatible materials. Avoid excessive heat or cold.

10.5. Incompatible materials

Strong oxidizing agents. Strong bases. Strong acids. amines. aluminum and other metals. Cyanides and sulfide salts.

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide. ammonia. hydrogen chloride. Burning produces irritating, toxic and noxious fumes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

| | |
|-----------------------------|---|
| Acute toxicity (oral) | : Not classified (Based on available data, the classification criteria are not met) |
| Acute toxicity (dermal) | : Not classified (Based on available data, the classification criteria are not met) |
| Acute toxicity (inhalation) | : Not classified (Based on available data, the classification criteria are not met) |

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| | |
|----------------------------|------------------------------------|
| LD50 oral rat | > 5000 mg/kg |
| LC50 inhalation rat (mg/l) | > 20 mg/l vapours, 1 hour exposure |

2,6-Di-tert-butyl-4-methylphenol (128-37-0)

| | |
|--------------------|--------------|
| LD50 oral rat | 6000 mg/kg |
| LD50 dermal rabbit | > 2000 mg/kg |

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Polyethylene Glycol (25322-68-3)

| | |
|-----------------|---------------|
| LD50 oral rat | 47000 mg/kg |
| LD50 dermal rat | > 20000 mg/kg |

Ammonium chloride (12125-02-9)

| | |
|-----------------|--------------|
| LD50 oral rat | 1410 mg/kg |
| LD50 dermal rat | > 2000 mg/kg |

Oleic acid (112-80-1)

| | |
|-----------------|---------------------------------------|
| LD50 oral rat | 74000 mg/kg |
| LD50 dermal rat | > 2000 mg/kg (guinea pig >3000 mg/kg) |

| | |
|-----------------------------------|--|
| Skin corrosion/irritation | : Not irritating to skin (Based on available data, the classification criteria are not met) |
| Additional information | : Edema score: 0 |
| Serious eye damage/irritation | : Slightly irritant but not relevant for classification (Based on available data, the classification criteria are not met) |
| Respiratory or skin sensitisation | : Not classified (Based on available data, the classification criteria are not met) |
| Germ cell mutagenicity | : Not classified (Based on available data, the classification criteria are not met) |
| Carcinogenicity | : Not classified (Based on available data, the classification criteria are not met) |

2,6-Di-tert-butyl-4-methylphenol (128-37-0)

| | |
|------------|----------------------|
| IARC group | 3 - Not classifiable |
|------------|----------------------|

| | |
|------------------------|---|
| Reproductive toxicity | : Not classified (Based on available data, the classification criteria are not met) |
| STOT-single exposure | : Not classified (Based on available data, the classification criteria are not met) |
| STOT-repeated exposure | : Not classified |

2,6-Di-tert-butyl-4-methylphenol (128-37-0)

| | |
|----------------------------|---|
| NOAEL (oral, rat, 90 days) | 25 mg/kg bodyweight/day Digestive, live, urogenital, kidneys, glandular, thyroids, adrenal gland. |
|----------------------------|---|

Ammonium chloride (12125-02-9)

| | |
|--|---------------------------------|
| NOAEL (subchronic, oral, animal/male, 90 days) | >= 580 mg/kg bodyweight 56 days |
|--|---------------------------------|

| | |
|-------------------|---|
| Aspiration hazard | : Not classified (Based on available data, the classification criteria are not met) |
|-------------------|---|

SECTION 12: Ecological information

12.1. Toxicity

| | |
|--|---|
| Ecology - general | : Avoid undiluted product to come into sewer or superficial water. |
| Unknown hazards to the aquatic environment (CLP) | : Contains 0.03 % of components with unknown hazards to the aquatic environment |
| Acute aquatic toxicity | : Not classified |
| Chronic aquatic toxicity | : Harmful to aquatic life with long lasting effects. |

2,6-Di-tert-butyl-4-methylphenol (128-37-0)

| | |
|--------------------------------|------------|
| LC50 fish 1 | 0.199 |
| EC50 Daphnia 1 | 0.48 mg/l |
| EC50 other aquatic organisms 1 | 0.758 mg/l |
| NOEC (acute) | 0.15 mg/l |

Polyethylene Glycol (25322-68-3)

| | |
|--------------------------------|------------|
| LC50 fish 1 | > 100 mg/l |
| LC50 other aquatic organisms 1 | 1000 mg/l |

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Ammonium chloride (12125-02-9)

| | |
|----------------|---------------|
| LC50 fish 1 | 209 mg/l 96 h |
| EC50 Daphnia 1 | 101 mg/l 48 h |

12.2. Persistence and degradability

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| | |
|-------------------------------|--|
| Persistence and degradability | Not readily biodegradable. May cause long-term adverse effects in the environment. |
|-------------------------------|--|

2,6-Di-tert-butyl-4-methylphenol (128-37-0)

| | |
|-------------------------------|--|
| Persistence and degradability | Not readily biodegradable. May cause long-term adverse effects in the environment. |
|-------------------------------|--|

Oleic acid (112-80-1)

| | |
|-------------------------------|--|
| Persistence and degradability | Readily biodegradable. |
| Biodegradation | Ref: Official Bulletin of Ministry of International Trade and Industry |

12.3. Bioaccumulative potential

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| | |
|---------------------------|------------------|
| Bioaccumulative potential | Not established. |
|---------------------------|------------------|

2,6-Di-tert-butyl-4-methylphenol (128-37-0)

| | |
|---------------------------|--------------------------------------|
| Log Pow | 5.2 |
| Bioaccumulative potential | This product is not bioaccumulating. |

12.4. Mobility in soil

2,6-Di-tert-butyl-4-methylphenol (128-37-0)

| | |
|----------------|---|
| Ecology - soil | Absorbs to soil particles and will not be mobile. |
|----------------|---|

12.5. Results of PBT and vPvB assessment

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| |
|------------------------|
| PBT: not yet assessed |
| vPvB: not yet assessed |

12.6. Other adverse effects

Additional information : No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|-----------------------------------|--|
| Sewage disposal recommendations | : Do not dispose of waste into sewer. |
| Waste disposal recommendations | : Dispose in a safe manner in accordance with local/national regulations. |
| Ecology - waste materials | : Avoid release to the environment. |
| European List of Waste (LoW) code | : For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used. |

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

| | |
|---------------|------------------|
| UN-No. (ADR) | : Not regulated. |
| UN-No. (IMDG) | : Not regulated. |
| UN-No. (IATA) | : Not regulated. |
| UN-No. (ADN) | : Not regulated. |
| UN-No. (RID) | : Not regulated. |

14.2. UN proper shipping name

| | |
|-----------------------------|------------------|
| Proper Shipping Name (ADR) | : Not regulated. |
| Proper Shipping Name (IMDG) | : Not regulated. |
| Proper Shipping Name (IATA) | : Not regulated. |
| Proper Shipping Name (ADN) | : Not regulated. |
| Proper Shipping Name (RID) | : Not regulated. |

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14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : Not regulated.

IMDG

Transport hazard class(es) (IMDG) : Not regulated.

IATA

Transport hazard class(es) (IATA) : Not regulated.

ADN

Transport hazard class(es) (ADN) : Not regulated.

RID

Transport hazard class(es) (RID) : Not regulated.

14.4. Packing group

Packing group (ADR) : Not regulated.

Packing group (IMDG) : Not regulated.

Packing group (IATA) : Not regulated.

Packing group (ADN) : Not regulated.

Packing group (RID) : Not regulated.

14.5. Environmental hazards

Dangerous for the environment : No

Marine pollutant : No

Other information : No supplementary information available

14.6. Special precautions for user

Overland transport

Not regulated.

Transport by sea

Not regulated.

Air transport

Not regulated.

Inland waterway transport

Not regulated.

Rail transport

Not regulated.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

VOC content : 0 %

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Indication of changes:

Classification. Regulatory information.

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Abbreviations and acronyms:

| | |
|--|---|
| | ACGIH (American Conference of Government Industrial Hygienists) |
| | ATE: Acute Toxicity Estimate |
| | CAS (Chemical Abstracts Service) number |
| | CLP: Classification, Labelling, Packaging. |
| | EC50: Environmental Concentration associated with a response by 50% of the test population. |
| | GHS: Globally Harmonized System (of Classification and Labeling of Chemicals). |
| | LD50: Lethal Dose for 50% of the test population |
| | OSHA: Occupational Safety & Health Administration |
| | PBT: Persistent, Bioaccumulative, Toxic |
| | PNEC: Predicted No Effect Level |
| | STEL: Short Term Exposure Limits |
| | TSCA: Toxic Substances Control Act |
| | TWA: Time Weighted Average |

Data sources : ACGIH 2000. Canadian Centre for Occupational Health and Safety. Accessed at: http://www.ccohs.ca/oshanswers/legisl/whmis_classifi.html. ESIS (European chemical Substances Information System; accessed at: <http://esis.jrc.ec.europa.eu/index.php?PGM=cla>. European Chemicals Agency (ECHA) Registered Substances list. Accessed at <http://echa.europa.eu/>. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition. OSHA 29CFR 1910.1200 Hazard Communication Standard. 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. TSCA Chemical Substance Inventory. Accessed at <http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>.

Other information : None.

Full text of H- and EUH-statements:

| | |
|---------------------|--|
| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4 |
| Aquatic Acute 1 | Hazardous to the aquatic environment — Acute Hazard, Category 1 |
| Aquatic Chronic 1 | Hazardous to the aquatic environment — Chronic Hazard, Category 1 |
| Aquatic Chronic 3 | Hazardous to the aquatic environment — Chronic Hazard, Category 3 |
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Skin Corr. 1A | Skin corrosion/irritation, Category 1A |
| Skin Corr. 1B | Skin corrosion/irritation, Category 1B |
| Skin Irrit. 2 | Skin corrosion/irritation, Category 2 |
| STOT RE 2 | Specific target organ toxicity — Repeated exposure, Category 2 |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation |
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H335 | May cause respiratory irritation. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H412 | Harmful to aquatic life with long lasting effects. |

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

| | | |
|-------------------|------|--------------------|
| Aquatic Chronic 3 | H412 | Calculation method |
|-------------------|------|--------------------|

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.