



**SOLDER FLUX EXEL LF7 - FLUX EXEL LF7**

**SAFETY DATA SHEET**

(REACH regulation (EC) n° 1907/2006 - n° 2015/830)

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

**1.1. Product identifier**

Product name : SOLDER FLUX EXEL LF7

Product code : FLUX EXEL LF7.

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

Soft soldering

**Use descriptor system (REACH) :**

SU 3 Industrial uses : uses of substances as such or in preparations at industrial sites

PC 38 Welding and soldering products (with flux coatings or flux cores), flux products

**1.3. Details of the supplier of the safety data sheet**

Registered company name : MBO.

Address : Rue de la Fonderie.21800.Chevigny-Saint-Sauveur.FRANCE.

Telephone : 00 33 3 80 46 12 58. Fax : 00 33 3 80 46 66 59.

admin@mbosolder.com

www.mbosolder.com

**1.4. Emergency telephone number : +33 (0)1 45 42 59 59.**

Association/Organisation : INRS / ORFILA <http://www.centres-antipoison.net>.

**SECTION 2 : HAZARDS IDENTIFICATION**

**2.1. Classification of the substance or mixture**

**In compliance with EC regulation No. 1272/2008 and its amendments.**

Flammable liquid, Category 2 (Flam. Liq. 2, H225).

Eye irritation, Category 2 (Eye Irrit. 2, H319).

Specific target organ toxicity (single exposure), Category 3 (STOT SE 3, H336).

This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

**2.2. Label elements**

**In compliance with EC regulation No. 1272/2008 and its amendments.**

Hazard pictograms :



GHS07



GHS02

Signal Word :

DANGER

Product identifiers :

EC 200-661-7 PROPAN-2-OL

Hazard statements :

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

Precautionary statements - Prevention :

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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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.

Precautionary statements - Storage :

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

**2.3. Other hazards**The mixture does not contain substances classified as 'Substances of Very High Concern' (SVHC)  $\geq 0.1\%$  published by the European Chemicals Agency (ECHA) under article 57 of REACH: <http://echa.europa.eu/fr/candidate-list-table>

The mixture satisfies neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.

It is recommended to wear safety glasses, protective gloves, to wash hands after use and to work with a good ventilation of area, and suitable fumes extraction system locally installed.

**SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS****3.2. Mixtures****Composition :**

Identification	(EC) 1272/2008	Note	%
CAS: 67-63-0 EC: 200-661-7 REACH: 01-2119457558-25-XXXX PROPAN-2-OL	GHS07, GHS02 Dgr Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336	[1]	> 95.00 %
CAS: 124-04-9 EC: 204-673-3 REACH: 01-2119457561-38-0000 ADIPIC ACID	GHS07 Wng Eye Irrit. 2, H319	[1]	< 5.00 %

**Information on ingredients :**

[1] Substance for which maximum workplace exposure limits are available.

**SECTION 4 : FIRST AID MEASURES**

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

**4.1. Description of first aid measures****In the event of exposure by inhalation :**

In the event of massive inhalation, remove the person exposed to fresh air. Keep warm and at rest.

If the person is unconscious, place in recovery position. Notify a doctor in all events, to ascertain whether observation and supportive hospital care will be necessary.

If breathing is irregular or has stopped, effect mouth-to-mouth resuscitation and call a doctor.

**In the event of splashes or contact with eyes :**

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open.

If there is any redness, pain or visual impairment, consult an ophthalmologist.

**In the event of splashes or contact with skin :**

Immediately wash with water and soap and rinse thoroughly.

If skin irritation persists, get medical attention.

If burns should occur from molten metal, treat for burn and get medical assistance if necessary.

Beware of products that may remain between the skin and clothes , the watch , the shoes...

**In the event of swallowing :**

In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water and consult a doctor.

Keep the person exposed at rest. Do not force vomiting.

Seek medical attention, showing the label.

If swallowed accidentally, call a doctor to ascertain whether observation and hospital care will be necessary. Show the label.

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

No data available.



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

No data available.

**SECTION 5 : FIREFIGHTING MEASURES**

Flammable.

Chemical powders, carbon dioxide and other extinguishing gas are suitable for small fires.

**5.1. Extinguishing media**

Keep packages near the fire cool, to prevent pressurised containers from bursting.

**Suitable methods of extinction**

In the event of a fire, use :

- sprayed water or water mist
- foam
- multipurpose ABC powder
- BC powder
- carbon dioxide (CO<sub>2</sub>)

Prevent the effluent of fire-fighting measures from entering drains or waterways.

**Unsuitable methods of extinction**

In the event of a fire, do not use :

- water jet

**5.2. Special hazards arising from the substance or mixture**

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)
- carbon dioxide (CO<sub>2</sub>)

**5.3. Advice for firefighters**

Fire-fighting personnel are to be equipped with autonomous insulating breathing apparatus.

Wear full body protective clothing and appropriate self-contained breathing apparatus.

Cool adjacent containers with water spray.

**SECTION 6 : ACCIDENTAL RELEASE MEASURES**

**6.1. Personal precautions, protective equipment and emergency procedures**

Consult the safety measures listed under headings 7 and 8.

Keep away from heat and sun. Keep away from flames and sources of ignition.

Avoid skin and eyes contact and inhalation of vapors.

**For non first aid worker**

Because of the organic solvents contained in the mixture, eliminate sources of ignition and ventilate the area.

Avoid inhaling the vapors.

Avoid any contact with the skin and eyes.

If a large quantity has been spilt, evacuate all personnel and only allow intervention by trained operators equipped with safety apparatus.

**For first aid worker**

First aid workers will be equipped with suitable personal protective equipment (See section 8).

**6.2. Environmental precautions**

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

**6.3. Methods and material for containment and cleaning up**

Clean preferably with a detergent, do not use solvents.

Absorb or retain the liquid with sand, earth or other non-combustible material limiting spreading.



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**6.4. Reference to other sections**

No data available.

**SECTION 7 : HANDLING AND STORAGE**

Requirements relating to storage premises apply to all facilities where the mixture is handled.

**7.1. Precautions for safe handling**

Always wash hands after handling.

Remove and wash contaminated clothing before re-using.

Ensure that there is adequate ventilation, especially in confined areas.

The workplace must be ventilated and fumes must be captured at the emission source.

Wear protective shoes and gloves.

**Fire prevention :**

Handle in well-ventilated areas.

Vapours are heavier than air. They can spread along the ground and form mixtures that are explosive with air.

Prevent the formation of flammable or explosive concentrations in air and avoid vapor concentrations higher than the occupational exposure limits.

Prevent the accumulation of electrostatic charges with connections to earth.

The mixture can become electrostatically charged : always earth during decanting operations. Wear antistatic shoes and clothing and floors should be electrically conductive.

Use the mixture in premises free of naked flames or other sources of ignition and ensure that electrical equipment is suitably protected.

Keep packages tightly closed and away from sources of heat, sparks and naked flames.

Do not use tools which may produce sparks. Do not smoke.

Prevent access by unauthorised personnel.

**Recommended equipment and procedures :**

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Avoid inhaling vapors. Carry out any industrial operation which may give rise to this in a sealed apparatus.

Provide vapor extraction at the emission source and also general ventilation of the premises.

Also provide breathing apparatus for certain short tasks of an exceptional nature and for emergency interventions.

In all cases, recover emissions at source.

Avoid eye contact with this mixture.

Packages which have been opened must be reclosed carefully and stored in an upright position.

**Prohibited equipment and procedures :**

No smoking, eating or drinking in areas where the mixture is used.

**7.2. Conditions for safe storage, including any incompatibilities**

No data available.

**Storage**

Keep the container tightly closed in a dry, well-ventilated place.

Keep away from all sources of ignition - do not smoke.

Keep well away from all sources of ignition, heat and direct sunlight.

Avoid accumulation of electrostatic charges.

The floor must be impermeable and form a collecting basin so that, in the event of an accidental spillage, the liquid cannot spread beyond this area.

On spool, in original cardboard, at room temperature, keep away from inclemency, in a dry and well ventilated place. During 12 months.

**Packaging**

Always keep in packaging made of an identical material to the original.

**7.3. Specific end use(s)**

No data available.

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- ACGIH TLV (American Conference of Governmental Industrial Hygienists, Threshold Limit Values, 2010) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
67-63-0	200 ppm	400 ppm	-	-	-
124-04-9	5 mg/m <sup>3</sup>	-	-	-	-

- Germany - AGW (BAuA - TRGS 900, 21/06/2010) :

CAS	VME :	VME :	Excess	Notes
67-63-0	200 ml/m <sup>3</sup>	500 mg/m <sup>3</sup>	2(II)	DFG, Y

- France (INRS - ED984 :2008) :

CAS	VME-ppm :	VME-mg/m <sup>3</sup> :	VLE-ppm :	VLE-mg/m <sup>3</sup> :	Notes :	TMP No :
67-63-0	-	-	400	980	-	84

- UK / WEL (Workplace exposure limits, EH40/2005, 2007) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
67-63-0	400 ppm	500 ppm	-	-	-

**Derived no effect level (DNEL) or derived minimum effect level (DMEL):**

ADIPIC ACID (CAS: 124-04-9)

**Final use:**

Exposure method:  
Potential health effects:  
DNEL :

**Workers.**

Inhalation.  
Short term local effects.  
5 mg of substance/m<sup>3</sup>

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

**Final use:**

Exposure method:  
Potential health effects:  
DNEL :

**Workers.**

Dermal contact.  
Long term systemic effects.  
888 mg/kg body weight/day

Exposure method:  
Potential health effects:  
DNEL :

Inhalation.  
Long term systemic effects.  
500 mg of substance/m<sup>3</sup>

**Predicted no effect concentration (PNEC):**

ADIPIC ACID (CAS: 124-04-9)

Environmental compartment:  
PNEC : Soil.  
0.0228 mg/kg

Environmental compartment:  
PNEC : Fresh water.  
0.126 mg/l

Environmental compartment:  
PNEC : Sea water.  
0.0126 mg/l

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

Environmental compartment:  
PNEC : Soil.  
28 mg/kg

Environmental compartment:  
PNEC : Fresh water.  
140.9 mg/l

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Environmental compartment: PNEC :	Sea water. 140.9 mg/l
Environmental compartment: PNEC :	Intermittent waste water. 140.9 mg/l
Environmental compartment: PNEC :	Fresh water sediment. 552 mg/kg
Environmental compartment: PNEC :	Marine sediment. 552 mg/kg
Environmental compartment: PNEC :	Waste water treatment plant. 2251 mg/l

**8.2. Exposure controls****Personal protection measures, such as personal protective equipment**

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :



Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

**- Eye / face protection**

Avoid contact with eyes.

Use eye protectors designed to protect against liquid splashes

Before handling, wear safety goggles with protective sides accordance with standard EN166.

In the event of high danger, protect the face with a face shield.

Prescription glasses are not considered as protection.

Individuals wearing contact lenses should wear prescription glasses during work where they may be exposed to irritant vapours.

Provide eyewash stations in facilities where the product is handled constantly.

**- Hand protection**

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN374.

Gloves must be selected according to the application and duration of use at the workstation.

Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.

Type of gloves recommended :

- Nitrile rubber (butadiene-acrylonitrile copolymer rubber (NBR))

- Butyl Rubber (Isobutylene-isoprene copolymer)

Recommended properties :

- Impervious gloves in accordance with standard EN374

**- Body protection**

Suitable type of protective clothing :

- protective work clothing

- protective shoes

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

**- Respiratory protection**

Avoid breathing vapours.

If the ventilation is insufficient, wear appropriate breathing apparatus.

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When workers are confronted with concentrations that are above occupational exposure limits, they must wear a suitable, approved, respiratory protection device.

Anti-gas and vapour filter(s) (Combined filters) in accordance with standard EN14387 :

- AX (Brown)

Independent breathing apparatus for respiratory protection :

It is recommended to set up a fumes exhaust system closer to their emission. In case of insufficient ventilation, wear suitable respiratory equipment. In case of formation of vapors, wear suitable respiratory equipment with filter.

**SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES****9.1. Information on basic physical and chemical properties****General information :**

Physical state : Fluid liquid.

Color : colorless

**Important health, safety and environmental information**

pH : Not relevant.

Boiling point/boiling range : > 35°C

Flash Point : 12.00 °C.

Vapour pressure (50°C) : Below 110 kPa (1.10 bar).

Density : < 1

Water solubility : Dilutable.

Melting point/melting range : -89 °C.

Self-ignition temperature : 425 °C.

Decomposition point/decomposition range : Not specified.

**9.2. Other information**

Acid number (EXEL LF7) : 30 mgKOH/g

Chloride content (EXEL LF7) : no chlorine

**SECTION 10 : STABILITY AND REACTIVITY****10.1. Reactivity**

The product is stable under normal conditions of use and storage, but reacts with strong oxidisers.

**10.2. Chemical stability**

This mixture is stable under the recommended handling and storage conditions in section 7.

**10.3. Possibility of hazardous reactions**

When exposed to high temperatures, the mixture can release hazardous decomposition products, such as carbon monoxide and dioxide, fumes and nitrogen oxide.

Reaction with strong oxidizers.

**10.4. Conditions to avoid**

Any apparatus likely to produce a flame or to have a metallic surface at high temperature (burners, electric arcs, furnaces etc.) must not be allowed on the premises.

Avoid :

- accumulation of electrostatic charges.
- heating
- heat
- flames and hot surfaces

**10.5. Incompatible materials****10.6. Hazardous decomposition products**

The thermal decomposition may release/form :

- carbon monoxide (CO)
- carbon dioxide (CO<sub>2</sub>)



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**SECTION 11 : TOXICOLOGICAL INFORMATION**

**11.1. Information on toxicological effects**

May have reversible effects on the eyes, such as eye irritation which is totally reversible by the end of observation at 21 days.

Splashes in the eyes may cause irritation and reversible damage

Narcotic effects may occur, such as drowsiness, narcosis, decreased alertness, loss of reflexes, lack of coordination or dizziness.

Effects may also occur in the form of violent headaches or nausea, judgement disorder, giddiness, irritability, fatigue or memory disturbance.

**11.1.1. Substances**

**Acute toxicity :**

ADIPIC ACID (CAS: 124-04-9)

Oral route : LD50 = 5560 mg/kg  
Species : Rat

Dermal route : LD50 > 7940 mg/kg  
Species : Rabbit

Inhalation route : LC50 > 7.7 mg/l  
Species : Rat

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

Oral route : LD50 = 4570 mg/kg  
Species : Rat

Dermal route : LD50 = 12800 mg/kg  
Species : Rabbit

Inhalation route : LC50 = 30 mg/m<sup>3</sup>  
Species : Rat

**Respiratory or skin sensitisation :**

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

Buehler Test : Non-sensitiser.  
Species : Others

**Germ cell mutagenicity :**

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

No mutagenic effect.

**Carcinogenicity :**

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

Carcinogenicity Test : Negative.

No carcinogenic effect.

**11.1.2. Mixture**

**Acute toxicity :**

Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, fatigue, nausea and vomiting.

The product massive ingestion can cause liver damage.

**Monograph(s) from the IARC (International Agency for Research on Cancer) :**

CAS 67-63-0 : IARC Group 3 : The agent is not classifiable as to its carcinogenicity to humans.





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**SECTION 12 : ECOLOGICAL INFORMATION**

**12.1. Toxicity**

Do not allow product to reach ground water, water source or sewage system.

**12.1.1. Substances**

ADIPIC ACID (CAS: 124-04-9)

Fish toxicity :

LC50 > 1000 mg/l

Species : Brachydanio rerio

Duration of exposure : 96 h

Crustacean toxicity :

EC50 = 46 mg/l

Species : Daphnia magna

Duration of exposure : 48 h

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

Fish toxicity :

LC50 > 100 mg/l

Species : Leuciscus idus melanotus

Duration of exposure : 48 h

Crustacean toxicity :

EC50 > 100 mg/l

Species : Daphnia magna

Duration of exposure : 48 h

Algae toxicity :

ECr50 > 100 mg/l

Species : Scenedesmus subspicatus

Duration of exposure : 72 h

**12.1.2. Mixtures**

No aquatic toxicity data available for the mixture.

**12.2. Persistence and degradability**

**12.2.1. Substances**

ADIPIC ACID (CAS: 124-04-9)

Biodegradability :

Rapidly degradable.

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

Biodegradability :

no degradability data is available, the substance is considered as not degrading quickly.

**12.3. Bioaccumulative potential**

**12.3.1. Substances**

ADIPIC ACID (CAS: 124-04-9)

Octanol/water partition coefficient :

log K<sub>ow</sub> = 0.093

**12.4. Mobility in soil**

No data available.

**12.5. Results of PBT and vPvB assessment**

No data available.

**12.6. Other adverse effects**

No data available.

**SOLDER FLUX EXEL LF7 - FLUX EXEL LF7****SECTION 13 : DISPOSAL CONSIDERATIONS**

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

**13.1. Waste treatment methods**

Do not pour into drains or waterways.

**Waste :**

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

**Soiled packaging :**

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

**SECTION 14 : TRANSPORT INFORMATION**

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2015 - IMDG 2014 - ICAO/IATA 2015).

**14.1. UN number**

1993

**14.2. UN proper shipping name**

UN1993=FLAMMABLE LIQUID, N.O.S.

(propan-2-ol)

**14.3. Transport hazard class(es)**

- Classification :



3

**14.4. Packing group**

II

**14.5. Environmental hazards**

-

**14.6. Special precautions for user**

ADR/RID	Class	Code	Pack gr.	Label	Ident.	LQ	Provis.	EQ	Cat.	Tunnel
	3	F1	II	3	33	1 L	274 601 640D	E2	2	D/E

IMDG	Class	2°Label	Pack gr.	LQ	EMS	Provis.	EQ
	3	-	II	1 L	F-E,S-E	274	E2

IATA	Class	2°Label	Pack gr.	Passager	Passager	Cargo	Cargo	note	EQ
	3	-	II	353	5 L	364	60 L	A3	E2
	3	-	II	Y341	1 L	-	-	A3	E2

For limited quantities, see part 2.7 of the OACI/IATA and chapter 3.4 of the ADR and IMDG.

For excepted quantities, see part 2.6 of the OACI/IATA and chapter 3.5 of the ADR and IMDG.

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

No data available.



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**SECTION 15 : REGULATORY INFORMATION**

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

**- Classification and labelling information included in section 2:**

The following regulations have been used:

- EU Regulation No. 1272/2008 amended by EU Regulation No. 487/2013.
- EU Regulation No. 1272/2008 amended by EU Regulation No. 758/2013.
- EU Regulation No. 1272/2008 amended by EU Regulation No. 944/2013.
- EU Regulation No. 1272/2008 amended by EU Regulation No. 605/2014.

**- Container information:**

No data available.

**- Particular provisions :**

No data available.

**15.2. Chemical safety assessment**

No data available.

**SECTION 16 : OTHER INFORMATION**

We cannot anticipate any and all conditions and situations under which the information and our products or the combination of both with others will be used. We do not assume any liability in the safety and suitability of our products alone or in combination with others. Users must make their own tests to determine the safety and suitability of each product used alone or with other products for their own use.

Except any previous written agreement, our products are sold without guarantee and customers must assume all liability for any loss or damage suffered by themselves or by third parties, either from handling or use of our products alone or with others. In case of any difference or variation seen during the use of the products we request that you contact our technical department.

**Wording of the phrases mentioned in section 3 :**

- |      |                                     |
|------|-------------------------------------|
| H225 | Highly flammable liquid and vapour. |
| H319 | Causes serious eye irritation.      |
| H336 | May cause drowsiness or dizziness.  |

**Abbreviations :**

DNEL : Derived No-Effect Level

PNEC : Predicted No-Effect Concentration

ADR : European agreement concerning the international carriage of dangerous goods by Road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association.

ICAO : International Civil Aviation Organisation

RID : Regulations concerning the International carriage of Dangerous goods by rail.

GHS02 : Flame

GHS07 : Exclamation mark