



Safety Data Sheet according to Regulation (EC)

No. 1907/2006 (REACH)

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elma redux

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Name of product

elma redux

Manufacturer/distributor

ELMA Hans Schmidbauer GmbH & Co KG

Recommended intended purpose(s)

Evaporator liquid reducing the flame temperature of the combustion of hydrogen-oxygen gas mixtures.

2. HAZARDS IDENTIFICATION

Classification

F; R11

Xi; R36

R-phrases

11 Highly flammable.

36 Irritating to eyes.

67 Vapours may cause drowsiness and dizziness.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS No 67-63-0

propan-2-ol

EC No 200-661-7

Index No 603-117-00-0

Classification F R11; Xi R36; R67

4. FIRST AID MEASURES

General information

Remove contaminated soaked clothing immediately.

In the event of persistent symptoms receive medical treatment.

Take affected person into fresh air.

In case of inhalation

Ensure of fresh air.

In the event of symptoms refer for medical treatment.

In case of skin contact

In case of contact with skin wash off immediately with plenty of water.

In case of eye contact

In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice.

In case of ingestion

Do not induce vomiting.



Refer to medical treatment.

If swallowed seek medical advice immediately and show the doctor packing or label.

Rinse out mouth and give plenty of water to drink.

Physician's information / possible dangers

Risk of the aspiration of the lung.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Alcohol-resistant foam

Dry powder

Carbon dioxide

Water spray jet

Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases

In case of fire formation of dangerous gases possible.

Special protective equipment for fire-fighters

Do not inhale explosion and/or combustion gases.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Ensure adequate ventilation.

Use personal protection.

Keep away sources of ignition.

Pay attention to extension of gas especially at ground (heavier than air) and in direction of the wind.

Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

Do not discharge into the subsoil/soil.

Methods for cleaning up

Send in suitable containers for recovery or disposal.

Take up with absorbent material (e.g. kieselguhr).

7. HANDLING AND STORAGE

Advice on safe handling

Open and handle container with care!

Keep container tightly close.

Use only in well-ventilated areas.

Use solvent-resistant equipment.

Keep limited supplies at workplace.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking

The product is easy combustible.

Vapours can form an explosive mixture with air.

Take precautionary measures against static discharges.

Requirements for storage rooms and vessels

Keep only in unopened original container.

Advice on storage compatibility

Do not store together with oxidizing agents.

Further information on storage conditions

Keep container tightly closed.

Keep locked up, out of reach of children

Protect from heat and direct solar radiation.



Store at cool and aired place.
Product is hygroscopic.

Information on storage stability

Storage time: 24 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Additional advice on system design**

Technical exhaustion if there is a long-term exposition

Additional advice**Eye protection**

tightly fitting goggles

General protective measures

Avoid contact with eyes and skin

Do not inhale gases/vapours/aerosols.

Hygiene measures

Provide washing facilities at place of work.

Keep away from food and drink.

9. PHYSICAL AND CHEMICAL PROPERTIES**Form**

liquid

Colour

colourless, clear

Odour

alcoholic

Important health, safety and environmental information

	Value	Temperature	at	Method	Remark
boiling point	82 °C				
melting point	-88 °C				
Flash point	12 °C			closed cup	
Ignition temperature	425 °C				
Lower explosion limit	2 Vol-%				
Upper explosion limit	ca. 12 Vol-%				
Vapour pressure	ca. 42 hPa	20 °C			
Density	0,785 g/cm ³	20 °C			
Rel. vapour density	2,07				
Solubility in water					multimiscible
Partition coefficient (log p_{OW})	0,05	20 °C			
Solvent concentration	100 %				

Oxidizing properties

no

**Additional information**

Product effects hygroscopic.

10. STABILITY AND REACTIVITY**Conditions to avoid**Formation of explosive gas/air mixtures.
Heat and direct solar radiation.**Materials to avoid**Reactions with strong acids.
Reactions with oxidising agents.
Reactions with alkali metals.
Reactions with earth alkali metals.**Hazardous decomposition products**

no

11. TOXICOLOGICAL INFORMATION**Acute toxicity/Irritability/Sensitization**

	Value/Validation	Species	Method	Remark
LD 50 acute oral	4396 - 5500 mg/kg	rat		IUCLID
LD 50 acute dermal	12800 mg/kg	rabbit		IUCLID
LC 50 acute inhalation	72,6 mg/l (4 h)	rat		IUCLID
Irritability skin	non-irritant			IUCLID
Irritability eye	irritant			IUCLID
Skin sensitization	non-sensitizing	Guinea pig		IUCLID

Toxicity test (Additional information)No experimental indication of genotoxicity in vitro (Ames-test negative) (IUCLID).
No experimental indication of genotoxicity in vivo (micronucleus test negative) (IUCLID).
No experimental indication of teratogenic effects (IUCLID).
No experimental indications of toxic effects were observed in reproduction (IUCLID).
No experimental indications of carcinogenic effects (IUCLID).**Experiences made from practice**May be absorbed through the skin.
Has a degreasing effect on the skin.**12. ECOLOGICAL INFORMATION****Data on elimination (persistence and degradability)**

	Elimination rate	Method of analysis	Method	Validation
Biological degradability	95 % (21 d)		OECD 301 E	readily degradable

**Ecotoxicological effects**

	Value	Species	Method	Validation
Fish	LC50 8970 mg/l (48 h)	Leuciscus idus		IUCLID
Daphnia	EC50 13299 mg/l (48 h)	Daphnia magna		IUCLID
Algae	EC50 > 1000 mg/l (72 h)	Desmodesmus subspicatus		IUCLID
Bacteria	EC0 1050 mg/l (16 h)	Pseudomonas putida		IUCLID

Additional ecological information

	Value	Method	Remark
COD	2,4 gO ₂ /g	calculated	
AOX	The product does not contain any organically bound halogens according to the recipe.		

General regulation

Do not allow uncontrolled leakage of product into the environment.

Product is not allowed to be discharged into aquatic environment.

13. DISPOSAL CONSIDERATIONS

Waste code No.	Name of waste
14 06 03*	other solvents and solvent mixtures

Wastes marked with an asterisk are considered to be hazardous waste pursuant to Directive 91/689/EEC on hazardous waste.

Recommendations for the product

For recycling consult manufacturer.

Material recycling possible.

Incinerate in suitable incineration plant, but care for official regulations.

Recommendations for packaging

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

Recommended cleansing agent

Water

14. TRANSPORT INFORMATION**Land and inland navigation transport ADR/RID**

UN 1219 ISOPROPANOL, 3, II

Marine transport IMDG

UN 1219 ISOPROPANOL, 3, II

Air transport ICAO/IATA-DGR

UN 1219 ISOPROPANOL, 3, II



15. REGULATORY INFORMATION

Remarks for classification

The product is classified and labelled in accordance with EC directives/German regulations on dangerous substances.

EC-labelling

Classification

F Highly flammable

Xi Irritant

R-phrases

11 Highly flammable.

36 Irritating to eyes.

67 Vapours may cause drowsiness and dizziness.

S-phrases

16 Keep away from sources of ignition - No smoking.

2 Keep out of the reach of children.

24/25 Avoid contact with skin and eyes.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

7 Keep container tightly closed.

Hazardous ingredients for labeling

propan-2-ol

VOC standard

VOC content 100 %

16. OTHER INFORMATION

Further information

These data are given according to our actual knowledge about this product. This data sheet does not correspond to an assurance by virtue of a contract for properties of the product.

Wording of the R-phrases specified in chapter 3 (not the classification of the formulation!)

R 11 Highly flammable.

R 36 Irritating to eyes.

R 67 Vapours may cause drowsiness and dizziness.

elma redux

READY-FOR-USE FOR THE REDUCTION OF FLAME TEMPERATURE OF HYDROGEN-SOLDERING AND -WELDING EQUIPMENT

Description

elma redux is a ready-for-use evaporator liquid reducing the flame temperature of the combustion of hydrogen-oxygen gas mixtures. The flame temperature of maximum 2850°C (for ideal combustion, without *elma redux*) can be reduced by passing the gas mixture through *elma redux* down to 1800°C (dependent on the gas flow rate).

The size of the flame will be increased and it will be better recognizable by its luminous blue colour. Further on droplets of electrolyte and water vapour accompanying a gas mixture produced from an electrolyte of a hydrogen-soldering or -welding equipment will be separated out of the gas mixture.

Application and dosage

Ready-for-use. For the hydrogen soldering equipments „Elmaflame“ (EF) 140, 240, 300 as well as „Hot Flame“ (HF) Eco HF 10, HF 50, HF 100, HF 150, HF 300, HF 350 and HF 500. Observe the manuals for the device types EF and HF: For the EF-devices fill into the evaporator glass, for HF-devices into the flux-container.

Safety recommendations

elma redux is classified as Irritant and Highly flammable (Xi, F, R36-67-11) according to the German regulations on dangerous substances / EC directives. Observe the hints indicated in the Safety Data Sheet. Always handle chemicals with care.

Physical-chemical characterisation

Density: 780 – 790 g/l, flash point: 12°C. Contains propan-2-ol.

Disposal:

1. Dispose via specialised disposal companies: European waste code: 14 06 03*, “other solvents and solvent mixtures”.
2. Incinerate in suitable incineration plant, but care for official regulations. Do not discharge into the drains/surface waters/groundwater. Do not discharge into the subsoil/soil. Do not discharge product unmonitored into the environment. Recommended for recycling or disposal. Transport in appropriate suitable containers.

Volumes and storage:

Available volumes: 1 L PE-bottle.

Store in tightly closed original container only at a cool and ventilated place and protected from heat and direct solar radiation. Do not store together with oxidizing agents. Keep away from ignition sources.

Shelf life: 2 years in original, unopened bottle from the date of production (see stamp on label).

Classification for all means of transport: class 3, UN 1219.

