



SAFETY DATA SHEET

ORCA® HARDENER RFE



1. DESIGNATION OF PRODUCT AND COMPANY

Trade name: ORCA® HARDENER RFE
Supplier : Pennel & Flipo 384 Rue d'Alger 59052 Roubaix Cedex
Tel : +33 3 20 11 36 00 Fax : +33 3 20 11 36 71 Email : orca@pennel.fr

2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components within the meaning of EEC directive 67/548 and corresponding classification:

Quantity	N.67/458/CEE	CAS	EINECS	Name / Classification
abt. 70%	607-022-00-5	141-78-6	205-500-4	ethyl acetate
abt.27%		4151-51		Thiophosforic acid tris(p-Isocyanato- phenylester) Xn Harmful R42 May cause sensitization by inhalation. Chlorobenzene Xn Harmful R20 Harmful by inhalation, R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
<1%	602-033-00-1	108-90-7	203-626-5	

3. HAZARDS IDENTIFICATION

Contains Isocyanates. Follow the supplier's suggestions. The product easily catches fire if it is exposed to an ignition source. If inhaled, the product may cause sensitisation.

4. FIRST -AID MEASURES

Contact with skin:

To remove the product in contact with the parts of the body, use gauze or lint soaked in vegetable oil.

Immediately take off all contaminated clothing.

Areas of the body that have or are only even suspected of having come into contact with the toxin must be rinsed immediately with plenty of running water and possibly with soap.

Contact with eyes:

Do not use eyewash or ointment of any kind before obtaining an examination or advice from an ophthalmologist.

Wash immediately with water for at least 10 minutes.

In the event of persistent irritation, a doctor should be consulted.

Swallowing:

Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

A suspension of activated charcoal in water, or liquid petrolatum may be administered

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5. FIRE FIGHTING MEASURES

Recommended extinguishers:

Fire extinguishing powder, CO₂, or halogenated hydrocarbons. Use foam and water jets only in case of extensive fire outbreak. Forbidden extinguishers: DO NOT USE WATER EXTINGUISHERS.

Combustion risks:

During combustion the preparation may release toxic or highly toxic gases.

Exposure Controls:	TLV-1WA	Avoid inhaling	TLV-STEL	the fumes. Protective
Name	400 ppm 1440 mg/m ³	equipment: Use		protection for the
ethyl acetate		airways.		

6. MEASURES IN CASE OF ACCIDENTAL RELEASE

Measures for personal safety:

The use of protective solvent-resistant gloves is recommended.

Environmental measures:

Retain and cover leaks with non-flammable absorbent material for example sand, clays etc. Eliminate all unguarded flames and possible sources of ignition. Do not smoke. If the product has escaped into a water course, into the drainage system, or has contaminated the ground or vegetation, notify the competent authorities. Cleaning methods: Collect the substance in open containers for disposal (carbon dioxide is released). Keep the containers open under control for several days. Final disposal by incineration. If the product is in liquid form, stop it from entering the drainage system.

7. HANDLING AND STORAGE

Handling precautions:

Avoid contact and inhalation of the vapours. See, too, paragraph 8 below. Do not eat or drink while working. Do not smoke while working.

Incompatible materials:

Keep away from water or from damp surroundings.

Storage conditions:

Keep this product in a dry place.

Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight. Keep away from flame and sparks. Avoid accumulating electrostatic charge. Instructions as regards storage premises: Cool and adequately ventilated. Safety electric system.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Precautionary measures:

Give adequate ventilation to the premises where the product is stored and/or handled. Respiratory system protection:

Required where ventilation is insufficient or exposure is prolonged.

Use adequate protective respiratory equipment. The use of tractor fan equipment is required during spraying.

Protection for hands:

The use of protective solvent-resistant gloves is recommended.

Eye protection: Safety goggles. Protection for skin: Use clothing that provides comprehensive protection to the skin.

Any existing national regulations for handling of isocyanates and solvents must be observed

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and colour:	liquid/Yellow
Odour:	of solvent
Viscosity (@ 23°C):	abt 3mPas
Flash point:	-4°C
Explosiv limit LOWER :	2.2% vol
Explosive limit UPPER :	11% vol
Vapour pressure:	97mbar at 20°C
Relative density:	1g/cm ³
Solubility in water:	Insoluble, REACTS WITH WATER
Vapour density :	>1

10. STABILITY AND REACTIVITY

Conditions to avoid:

Avoid accumulating electrostatic charge.

Substances to avoid:

Avoid accidental contact with water, alcohols, amines and strongly alkaline substances because they react.

Avoid contact with combustible materials. The product could catch fire.

Dangerous reactions in contact with other materials:

It may generate flammable gases on contact with elementary metals (alkalis and alkaline earth, alloys in powder or vapours) and powerful reducing agents.

It may generate toxic gases on contact with oxidising mineral acids, and powerful oxidising agents. It may catch fire on contact with oxidising mineral acids, and powerful oxidising agents.

11. TOXICOLOGICAL INFORMATION

Prolonged or repeated contact with the product may cause removal of the natural grease from the skin and non allergic dermatitis.

There is an irritation hazard to the eyes, nose, throat and respiration system in case of long exposure resulting from prolonged spraying without adequate protection.

Asthma and chronic bronchitis sufferers should refrain from handling the product.

Set out below is the toxicological information relating to the main substances in the preparation. The concentration of each substance should be borne in mind in assessing the toxicological effects deriving from the preparation.

ethyl acetate	LD50 (RABBIT) ORAL: 4935 mg/Kg
chlorobenzene	LD50 (RABBIT) ORAL: 2830 mg/Kg
	LD50 (RAT) ORAL: 2390 mg/Kg BW
	LD50 (RABBIT) ORAL: 2250 mg/Kg BW

12. ECOLOGICAL INFORMATION

Adopt sound working practices, so that the product is not released into the environment.

Do not allow to escape into waters, wastewater or soil

The product reacts with water at the interface forming CO₂ and a solid insoluble product with high melting point (polyurea).

This reaction is accelerated by surfactants (e.g. detergents) or by water-soluble solvents.

13. DISPOSAL CONSIDERATIONS

Empty containers shall be disposed of only after neutralization of the residual product adhering to the walls with an isopropanol-ammonia-water mixture and after having eliminated the identification labels.

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

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14. TRANSPORT INFORMATION

Road :Class3,5° b

Air (ICAO/IATA):Class 3 UNno:1173 Packing Group: II

Sea (IMOG/IMO) :Class 3.2 Pag.3278 UNn° 1173(RE SIN SOLUTION) EmS=3-05 MFAG=310

15. REGULATORY INFORMATION

Ministerial Decree DM 28/1/92 (Classification and Labelling):

Symbols:	Xn	Harmful
	F	Highly flammable
R Phrases:	R11	Highly flammable.
	R42	May cause sensitization by inhalation.
S Phrases:	S16	Keep away from sources of ignition -No smoking.
	S23	Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).
	S29	Do not empty into drains.
	S33	Take precautionary measures against static discharges.
		In case of fire. Use fire extinguishing powder, CO ₂ or halogenated cabons.
	S51	Use only in well-ventilated areas.
	S61	Avoid release to the environment. Refer to special instructions/safety datasheet
	S37/37	wear suitable protective clothing and gloves

Special provisions :contains iscyanates. See informationsupplied by the manufacturer

16. OTHER INFORMATION

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended. This MSDS cancels and replaces any preceding release.