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Rel. # 1 on 23/11/2015

## Technical note

### ANTIFREEZE TOP ULTRA LD

#### MAIN FEATURES

The product is an antifreeze based on inhibited ethylene glycol with corrosion inhibitors of an exclusively organic nature, specifically designed for the new generation engines, equipped with aluminum, alloy and cast iron components. The product is free of silicates, boron, amines, nitrites and phosphates, expressly formulated and made for use in all those cases where prolonged replacement intervals are required.

It is one of the most modern protective antifreeze fluids available on the market. It guarantees long-term protection against corrosion of metals (cast iron, aluminum, copper and welding alloys) and a good compatibility with gaskets and non-metallic components in the circuit.

Its special formulation, free of silicates, amines, nitrites, boron and phosphates, emphasizes the attention to the environment. The product maintains its effective performance for uses up to 650,000 km on trucks and buses and up to 250,000 km on cars.

The special formulation allows the product, even if mixed with hard water, to reduce the formation of encrustations and therefore to avoid the consequent decrease of the heat exchange.

The strong anti-foam properties prevent the fluid from retaining the air, a harmful phenomenon that can induce the reduction of the heat removal capacity of the refrigerating fluid, in particular in case of high circulation speed.

This formulation does not cause swelling of the rubber parts that are in contact with the fluid. It avoids cavitation, hardening and breaking of rubber sleeves.

Compatible and miscible with the best radiator fluids on the market. Guarantees corrosion protection of aluminum parts up to 10 times higher than traditional liquids.

#### CORROSION TESTS (laboratory test)

The test measures the weight loss in mg of the sample. Weight loss expresses the degree of corrosion and oxidation of the metal of which the sample is made. The lower the weight loss, the better the resistance to corrosion and oxidation.

METALS // LIMITS ASTM D 3306 // ANTIFREEZE VALUES // LIMITS VW TL 774D

COPPER	//	10 MAX	//	0.6	//	9
WELDING ALLOY	//	30 MAX	//	3.1	//	9
BRASS	//	10 MAX	//	0.7	//	9
STEEL	//	10 MAX	//	0.1	//	9
CAST IRON	//	10 MAX	//	0.1	//	9
ALUMINUM	//	30 MAX	//	1.5	//	3

#### CHEMICAL-PHYSICAL FEATURES

Appearance: Clear red-pink liquid

Odour: Almost odorless - Typical of glycol

pH: 8,5 +/- 0,5

Melting point/freezing point: < -22°C +/- 1 (punto di fusione)

Initial boiling point and boiling range: > 165 °C

Flash point: > 115 °C

Upper/lower flammability or explosive limits: 14,6 % (V) / 4,9 % (V)

Vapour pressure: 0,2 hPa at 20° C

Relative density: 1,125 +/- 0,02 gr/ml at 15°C

Solubility: In water

Water solubility: Complete

Partition coefficient: n-octanol/water: -1,93

Auto-ignition temperature: > 300 °C

Viscosity: 25 mm<sup>2</sup>/s at 20°C

Explosive properties: Not explosive

Oxidising properties: None

VOC content: = 0% (EU, CH)

pH in sol. 50% water: 9 (ASTM D 6210)

Resistance to hard water: clear (ASTM D 6210)

Foaming (ASTM D 1881):

Volume: 50 ml max

Time: 3 sec. max

Ash (ASTM D 1119): 2% max



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#### APPLICATIONS

It is used in the cooling systems of all motor vehicles, particularly those equipped with aluminum engines.

Can also be used in industrial cooling systems, central heating or air-conditioning systems which is prescribed the use of a red monoethylene glycol based cooling fluid with corrosion inhibitors for aluminum.

The thermal behavior of the refrigerating mixture is determined by the percentage of dilution adopted.

#### SPECIFICATIONS AND APPROVALS

The product corresponds to the specifications of the following institutions and manufacturers:

VW / AUDI / SEAT / SKODA TL 774 D/F (G 12 / G 12+ ); MB 325.3 ; MAN 248 , MAN 324 tipo SNF , MAN B&W D36 5600 ; MTU MTL 5048 ; SCANIA ; VOLVO No 260 ; FORD WSS-M97B44-D ; CUMMINS 90T8-4 ; DAF 74002 ; DEUTZ 0199-99-1115/2091 ; OPEL GM 6277M ; RENAULT RVI 41-01-001 / Q tipo D ; FVV Heft R443 ; O-Norm V 5123 ; JOHN DEERE H24B1 & C1 ; NATO S-759 ; BS 6580 ; ASTM D 3306 ; ASTM D 4656 ; ASTM D 4985 ; .

#### TIPS FOR USE

It is miscible with other cooling liquids, even in different colors.

Mixing ratios to determine the freezing / boiling temperature of the antifreeze and water solution.

ANTI-FREEZE concentrated % in Volume	FREEZING POINT	BOILING POINT
20	- 9 °C	+ 102 °C
25	- 12 °C	+ 105 °C
33	- 18 °C	+ 106 °C
40	- 25 °C	+ 115 °C
50	- 39 °C	+ 125 °C
60	- 50 °C	+ 113 °C

#### PRECAUTIONS FOR USE

Do not use the product as it is concentrated.

At dilutions of less than 20%, the corrosion inhibiting action may be unsatisfactory. From the experience gained in the field it has been seen that the best performance is generally obtained by diluting the product in concentration around 50% in demineralized water and in any case never outside the range of values between 40% and 60%. In this regard, the user's attention is called to consider the manufacturer's indications as prevalent.

This product does not present any special risks if used according to our recommendations and applied correctly. A safety data sheet in compliance with the EU legislation is available from your sales advisor.

Store possibly indoors. If it is stored outdoors, keep the kegs in a horizontal position and cover them with a lid to avoid water infiltration. Do not store at temperatures above 60 °C or directly in the sun as it is good to keep them in places not subject to frost.

#### CLASSIFICATION AND LABELLING

UN Number: 0000

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