



PRORADFLU CONCENTRATE LL

14/08/2013

PRODUCT CATEGORY: ANTIFREEZE/COOLANT

The **PRORADFLU CONCENTRATE LL** is concentrated antifreeze liquid and anticorrosion protective for the preparation of diluted solutions in cooling systems.

It is based on mono-ethylene glycol with organic additives to ensure prolonged change intervals (2000 hours or 250,000 km in light vehicles, and 8,000 hours or 650,000 km in heavy vehicles). The formulation is totally free of borates, silicates, nitrates, nitrites, amines and phosphates.

The **PRORADFLU CONCENTRATE LL** is characterized by the following properties:

- **Excellent antirust properties (prevent rust and scale to any ferrous metals)**
- **Long life and stable fluid**
- **Does not cause swelling in rubber components**

Its considerable alkalinity reduces any tendency to corrosion, even after long periods of service and, being not acidic, does not damage metals, even those most readily affected, such as aluminum, copper and soldering/light alloys.

INTERNATIONAL SPECS COMPLIANCE:

AFNOR R 15/601 (F) *
ASTM D3306 & D4985
BS 6580 (GB)
CUNA NC 956-16 (I)
E/L 1415c (mil ITALY)
EMPA (CH)

FVV HEFT R 443 (D)
JIS K 2234 (J) *
KSM 2142 (K)
NATO S 759
SAE J1034 *
UNE 26361-88 (E)

O.E.M. SPECS COMPLIANCE:

Chrysler MS 9176
Cummins 85T8-2*
Cummins 90T8-4
Ford ESD M97 B49-A
Ford ESE M97B49-A
Ford WSS-M97B44-D
GM 1899M *
GM US 6277 M
John Deere H 24 B1 and C1
Leyland Trucks LTS 22 AF 10

MACK 014GS17004
MAN 248 e 324
MAN B&W D 36 5600
MB 325.3
Navistar B-1 Type III
Opel GM QL 130100
Pegaso
Porsche/VW/Audi/Seat/Skoda TL 774 D
Renault 41-01-001*
Volvo

* Except for alkaline reserve.



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CHARACTERISTICS (TYPICAL FIGURES):

<i>PROPERTIES</i>	<i>U.M.</i>	<i>VALUE</i>	<i>ASTM D-3306 Limit</i>
Density (at 15 °C)	[kg/dm ³]	1.122	1.110 ÷ 1.145
Color		pink	
Water	[%]	3.2	5 max
Alkaline reserve (HCl 0.1N)	[ml]	5.2	
pH (aqueous solution 50%)		8.2	7.5 ÷ 11.0
Hard water resistance		pass	

ANTI-CORROSION PROPERTIES EVALUATION:

ASTM-D-1384 – Corrosion test for engine coolants in glassware.

<i>METAL</i>	<i>WEIGHT LOSS [mg/specimen]</i>	<i>ASTM D-1384 Limit</i>
Copper	0.8	10 max
Solder	1.4	30 max
Brass	1.6	10 max
Steel	1.1	10 max
Iron	1.9	10 max
Aluminum	1.3	30 max

ASTM-D-1384 – Additional corrosion test for engine coolants on light alloys.

<i>METAL</i>	<i>WEIGHT LOSS [g/m²]</i>	<i>Limits VW TL 774 Type D</i>
AlSi12	0,5	2 max
AlMn	0,7	2 max
AlSi10Mg(Cu) For V8 engines	0,5	2 max



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ASTM D-4340 – Corrosion of cast aluminum alloys in engine coolants under heat rejecting conditions.

<i>Metal</i>	<i>WEIGHT LOSS [mg/cm²/7 gg]</i>	<i>ASTM D-4340 Limit</i>
Aluminum	0.5	1 max

ASTM D-2570 – Simulated service corrosion testing of engine coolants.

<i>METAL</i>	<i>WEIGHT LOSS [mg/specimen]</i>	<i>ASTM D-2570 Limit</i>
Copper	1.8	20 max
Solder	3.2	60 max
Brass	1.6	20 max
Steel	1.9	20 max
Iron	0.7	20 max
Aluminum	4.6	60 max

ASTM D-2809 – Cavitation corrosion and erosion characteristics of aluminum pimps with engine coolants.

<i>METAL</i>	<i>VISUAL RATING</i>	<i>ASTM D-2809 Limit</i>
Aluminum	9	8 min

TYPICAL TABLE FOR DILUTION IN WATER:

<i>FREEZING POINT [°C]</i>	<i>BOILING POINT [°C]</i>	<i>PRORADFLU LL Pure [weight]</i>	<i>PRORADFLU LL Pure [volume]</i>
-10	105	22 %	20 %
-15	105	29 %	27 %
-20	106	33 %	30 %
-25	106	40 %	37 %
-37	108	50 %	47 %
-40	109	54 %	51 %
-48	109	58 %	56 %

All the above data are not specific and are subject to normal manufacturing tolerances.