



# INUGEL OPTIMAL ULTRA

**Pure condensed anti freeze - Anticorrosion & antifreeze,**

## **AOT Technology**

**Nitrite free / Amine free / Phosphate free / Borate free / Silicate free**

### **TYPE OF USE**

MOTUL INUGEL OPTIMAL ULTRA is a pure condensed anti freeze that should be mixed with soft water for immediate use as a cooling liquid, based on monoethyleneglycol, using organic additives (AOT).

Strongly recommended for all cooling systems : passenger cars, heavy duty, construction and agriculture vehicles, gardening, ships, stationary engines ...

### **PERFORMANCES**

STANDARDS AND MANUFACTURER SPECIFICATIONS : Refer to chart.

**Contains a bitterness agent to prevent from drinking : coolants and antifreezes have a sweet taste but are harmful.**

Cooling system optimal protection from freezing and metallic parts from corrosion.

AOT technology provides an excellent thermal exchange and then engine cooling efficiency and prevents from boiling.

This organic technology provides anti-corrosion properties that remain while high temperature and ageing. Low corrosion inhibitors consumption allows extended drain intervals. Water pump protection, avoid cavitation.

Seals, durits and plastic parts friendly.

### **RECOMMENDATIONS**

Do not use pure product. Mix with soft water according to the required freezing protection : refer to chart  
To maintain anti corrosion properties, do not dilute below 33%.

Water for dilution : If possible use soft water : Maximum hardness 35°F and chlorides and sulfates maximum contain 500 ppm.

Drain intervals : Refer to the manufacturers' recommendation.

Do not mix with non organic products.

This product should not be used to protect drinking water systems against freezing.

### **PROPERTIES**

Nitrite free, amine free, phosphate free, borate free, silicate free.

Color	Visual	Orange fluo
Density at 20°C/68°F	ASTM D4052	1.112
Boiling Temperature	ASTM D1120	180°C/356°F
Alkalinity Reserve	ASTM D1121	6.2 mg KOH/g
Sulfated ashes	ASTM D1119	1.1% weight

# MOTUL INUGEL OPTIMAL ULTRA

OEM Group	OEM	Spec
Cummins	Cummins	IS Series & N14
Cummins	Cummins/Wärtsilä	32-9011
Daewoo	Daewoo/Ssangyong	
Daimler-Chrysler	Mercedes-Benz	325.3
Detroit Diesel	Detroit Diesel	Powercool Plus
Deutz/MWM	Deutz-MWM	0199-99-1115 / 0199-99-2091
Fiat	Fiat - Lancia	NC 956-16
Fiat	Iveco	18-1830
Ford	Ford/Jaguar	CMR 8229/WSS-M97B44-D
General Motors	Opel - GM - Saab	GM 6277M
General Motors	Vauxhall	QL 130100/GM 6277M
Honda	Honda	HES D 2009-75
Hyundai	Hyundai	
Isuzu	Isuzu	
John Deere	John Deere	JDMH5
Kubota	Kubota	
Komatsu	Komatsu	07.892 (2001)
Leyland-DAF	Leyland Trucks	DW03245403
MAN	MAN/Steyr	324 Typ SNF/MAN 324
MAN B&W	MAN B&W AG	D36 5600
Mazda	Mazda	MEZ 121C
Mitsubishi	Mitsubishi	
MTU	MTU	MTL 5048
Porsche	Porsche	TL-VW 774 D = G 12
PSA	Peugeot Citroën	
Renault	Mack	014GS17009
Renault	Nissan	10120 NDS00
Renault	Renault + RVI	41-01-001/- -Q Type D
Santana Motors	Suzuki	
Scania	Scania	TB 1451/TI 2-98 08 13 TB
Skoda	Liaz	61-0-0257
Volvo	Mack	014 GS 17009
Volvo	Renault Trucks	41-01-001/- -S Type D
Volvo	Volvo	128 6083 / 002
VW	VAG Group	TL-VW 774 D/F = G 12 / G12 +
ASTM Standards		ASTM D3306/D4656/D4985
British Standards		BS 6580
French Standards		NFR 15-601
FVV Standards	Germany	FVV Heft R443
Japanese Standards		JASO M325/JIS K2234
Korean Standards		KSM 2142
MIL Standards	MIL-Belgium	BT-PS-606 A
MIL Standards	MIL-France	DCSEA 615/C
MIL Standards	MIL-Italy	E/L-1415b
MIL Standards	MIL-Sweden	FSD 8704
NATO Standards		NATO S-759
SAE Standards		SAE J1034
UNE Standards		UNE 26-361-88/1

## RECOMMENDATIONS

PROTECTION		INUHEL OPTIMAL ULTRA
T°C / T°F	T°C / T°F*	%
-22°C / -8°F	132°C / 269°F	33%
-30°C / -22°F	134°C / 273°F	40%
-41°C / -42°F	136°C / 277°F	50%
-54°C / -65°F	139°C / 282°F	60%

\* +1,5 Bar