



# INUGEL OPTIMAL ULTRA

**Concentrated antifreeze**

**Anticorrosion & antifreeze**

**AOT Technology**

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

## TYPE OF USE

MOTUL INUGEL OPTIMAL ULTRA is a concentrated antifreeze 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.**

Optimal protection of cooling systems against freezing and metallic parts against corrosion. AOT technology provides an excellent thermal exchange and therefore improves engine cooling efficiency and prevents from boiling.

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

Seals, rubber pipes, hoses 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	1.11
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	Specification
Cummins	Cummins	IS series & N14
Cummins	Wärtsilä	32-9011
Daimler	Mercedes-Benz	MB 325.3
Detroit Diesel	Detroit Diesel	Power Cool Plus
Deutz	Deutz	0199-99-1115 (2) (5)
Deutz / MWM	Deutz / MWM	0199-99-2091 (4) (8)
Ford	Ford	WSS-M97B44-D
General Motors	Opel - GM	GM 6277M (+B040 1065)
General Motors	Saab	GM 6277M (+B040 1065)
General Motors	Vauxhall	QL 130100
General Motors	Vauxhall	GM 6277M (+B040 1065)
John Deere	John Deere	JDMH5
Komatsu	Komatsu	07.892 (2007)
Liebherr	Liebherr	MD1-36-130
MAK	MAK	A4.05.09.01
MAN	MAN	324 typ SNF
MAN	MAN B&W AG	D36 5600
Mazda	Mazda	MEZ MN 121 D
Mitsubishi	Mitsubishi	JQ07913-014
MTU	MTU	MTL 5048
Paccar	DAF	74002
Paccar	Leyland Trucks	DW03245403
Renault / Nissan	Renault	41-01-001/--S Type D
Tata Motors	Jaguar	CMR 8229
Tata Motors	Jaguar	WSS-M97B44-D
Ulstein Bergen	Ulstein Bergen	2.13.01
Volvo AB	Mack	014 GS 17009
Volvo AB	Renault Trucks	41-01-001/--S Type D
Volvo AB	Volvo Trucks	128 6083 / 002
VW (VAG)	Audi	TL-774 D = G 12
VW (VAG)	Audi	TL-774 F = G 12+
VW (VAG)	Seat	TL-774 D = G 12
VW (VAG)	Seat	TL-774 F = G 12+
VW (VAG)	Skoda	TL-774 D = G 12
VW (VAG)	Skoda	TL-774 F = G 12+
VW (VAG)	Skoda	61-0-0257
VW (VAG)	Volkswagen	TL-774 D = G 12
VW (VAG)	Volkswagen	TL-774 F = G 12+
Wärtsilä	SACM Diesel	DLP799861
Wärtsilä	Wärtsilä	32-9011
BRB		BR 637
ASTM Standards		ASTM D3306 / D4656
British Standards		BS 6580
FVV Standards	Germany	FVV Heft R443
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
NATO Standards		NATO S-759
UNE Standards		UNE 26-361-88/1

## RECOMMENDATIONS

PROTECTION		INUGEL 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

We retain the right to modify the general characteristics of our products in order to offer to our customers the latest technical development

Product specifications are definitive from the order which is subject to our general conditions of sale and warranty. Made in FRANCE

MOTUL - 119 Bd Félix Faure - 93303 AUBERVILLIERS CEDEX - BP 94 - Tel : 33 1 48 11 70 00 - Fax : 33 1 48 33 28 79 - Web Site: www.motul.fr