

PROTEX3 ULTRA

READY MIX COOLANT

100% DI-CARBOXYLATE (OAT) / COLOR: ORANGE

DESCRIPTION:

PROTEX3 ULTRA is an advanced antifreeze coolant formulated with 100% Organic Acid Technology (OAT). This premium blend incorporates pure mono ethylene glycol, deionized water, and a patented additive package from ARTECO, a joint venture between Chevron and TotalEnergies. Excluding silicates, amines, and borates, it ensures compatibility with a wide array of automotive systems. PROTEX3 ULTRA is specially designed to provide robust protection against freezing, overheating, and corrosion. It operates efficiently across a broad temperature spectrum, maintaining stability from -37°C to +128°C at operational 2 bar pressure. A key characteristic of PROTEX3 ULTRA is its exceptionally long life, attributed to the use of virtually non-depleting corrosion inhibitors. This feature allows this coolant to last for the entire life of the engine or vehicle, making it a cost-effective and reliable solution for modern engine maintenance.

BENEFITS:

PROTEX3 ULTRA presents a multitude of advantages for automotive applications:

- Extended Life:** PROTEX3 ULTRA is designed with a durable formula, offering an extended lifespan. This ensures consistent, long-lasting performance, reducing the need for frequent coolant changes.
- Reduced Repairs:** The formulation helps in minimizing common repairs related to the thermostat, radiator, and water pump, enhancing vehicle reliability.
- Reliable and Stable:** The coolant is characterized by a depletion-free and stable inhibitor, ensuring consistent performance over time.
- Improved Hard Water Stability:** The absence of silicates and phosphates in PROTEX3 ULTRA enhances its stability in hard water conditions.
- Cost and Time Efficient:** As a maintenance-free coolant, it helps save both time and money, eliminating the need for frequent coolant changes.

PROTEX3 ULTRA's silicate-free aliphatic additive technology offers exceptional long-life corrosion protection for all engine metals, including aluminium and ferrous alloys. Extensive fleet testing has demonstrated that the mono- and di-carboxylates in PROTEX3 ULTRA can protect for at least 250,000 km (approximately 2,000 hours) in passenger cars. The recommended coolant change interval is every five years or upon reaching the specified mileage or operating hours, whichever occurs first. This innovative product provides comprehensive corrosion protection using optimized organic corrosion inhibitors. It ensures excellent and lasting high-temperature corrosion protection for aluminium heat transfer surfaces found in modern engines. Additionally, the unique inhibitor package in PROTEX3 ULTRA delivers superior cavitation protection without the need for nitrite or nitrite-based supplemental coolant additives (SCAs).

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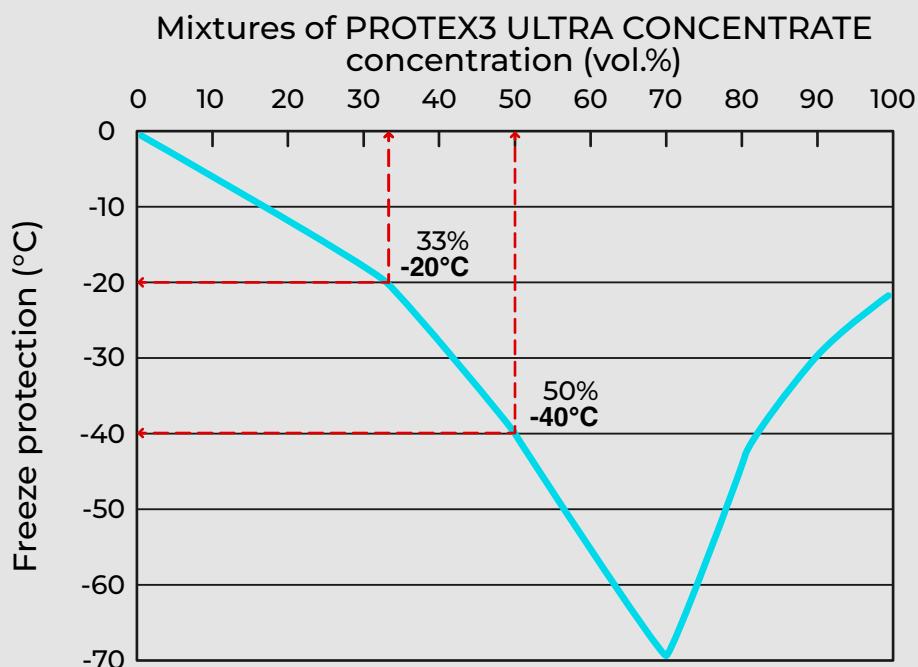
APPLICATION:

PROTEX3 ULTRA is expertly designed for versatile use across a wide range of engine types. It is suitable for engines constructed from cast iron, aluminium, or a combination of these metals. Additionally, its formulation is compatible with cooling systems made from aluminium or copper alloys. This makes PROTEX3 ULTRA particularly advantageous for high-tech engines, where robust protection against high temperatures in aluminium components is critical. Its comprehensive compatibility and protective qualities make it an ideal coolant choice for a variety of engine configurations and cooling system materials.

COMPATIBILITY AND MIXABILITY:

PROTEX3 ULTRA is formulated to be compatible with most other coolants based on ethylene glycol, offering flexibility in various automotive applications. However, for optimal corrosion protection and effective sludge control, the exclusive use of PROTEX3 ULTRA is strongly recommended. This ensures that the full benefits of its advanced formula are realized.

When using PROTEX3 ULTRA CONCENTRATE, it is advisable to mix it with deionized or distilled water to achieve the best performance and maintain controlled quality in the ready-to-use dilutions. Laboratory tests have shown that PROTEX3 ULTRA still delivers acceptable corrosion protection when mixed with water of 20°dH hardness, containing up to 500 ppm chlorides or 500 ppm sulphates. For detailed guidance on water quality and mixing ratios, refer to our comprehensive information leaflet on water quality recommendations. For further assistance or specific inquiries, please contact your local Area Sales Manager.



PROTEX3 ULTRA
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PROTEX3 ULTRA boasts official approval as a rebranded product by numerous car manufacturers, showcasing its adherence to high-quality standards and compatibility with various automotive cooling systems.

- **CHEVROLET:** GMW 3420
- **FORD:** WSS-M97B44-D
- **JAGUAR:** CMR 8229, STJLR 651.5003
- **LAND ROVER:** STJLR 651.5003
- **MERCEDES-BENZ:** MB-APPROVAL 325.3, 326.3
- **OPEL:** GMW 3420
- **VOLKSWAGEN:** TL-774 D (G12), TL-774 F (G12+) color RL02, RL04

For those interested in obtaining a comprehensive and current list of all such approvals, this information is readily available upon request. You are encouraged to contact your local Area Sales Manager to access this detailed list.

STANDARDS:

- **ASTM D3306-20**
- **BS 6580.1992 (obsolete)**
- **GB 27943.1-2022**
- **ASTM D6210-17**
- **FVV HEFT R530**
- **BS 6580.2010**
- **FVV HEFT R443**
- **KS M 2142:2014**
- **GB 29743-2013**

STORAGE REQUIREMENTS:

The storage of PROTEX3 ULTRA requires specific conditions to maintain its quality and performance. The product should ideally be stored at temperatures above -20 °C, with ambient temperatures being the most preferable. It is important to minimize exposure to temperatures exceeding 35 °C to preserve the integrity of the coolant. Special attention should be given to the storage of PROTEX3 ULTRA in translucent packages. Direct sunlight exposure should be avoided as it can lead to degradation of the color dyes in the coolant, resulting in fading or discoloration over time. This reaction is further accelerated under high ambient temperatures. Therefore, to prevent such issues, it is advisable to store coolant in translucent packages indoors.

PROTEX3 ULTRA, boasts a long shelf life, remaining stable and effective for at least 8 years when stored in unopened containers. This longevity ensures that the product retains its quality and performance characteristics over time. For optimal preservation, it is strongly recommended to store the product in new containers rather than recycled ones. Additionally, it is important to note that galvanized steel should not be used for pipes or any part of the storage/mixing installation for PROTEX3 ULTRA, as is standard with any antifreeze coolant. The use of appropriate materials in the storage and handling infrastructure is crucial to maintain the quality and efficacy of the product.

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TOXICITY AND SAFETY:

For comprehensive information regarding the toxicity and safety aspects of PROTEX3 ULTRA, we direct users to the Safety Data Sheet (SDS). The SDS provides detailed information and advice that should be carefully observed. It is crucial to adhere to the recommended precautions necessary for handling chemicals safely and effectively.

It is important to note that PROTEX3 ULTRA is not intended for use in protecting the interior of drinking water systems against freezing. The formulation is specifically designed for automotive cooling systems and should not be used in applications involving potable water.

Regarding transportation, PROTEX3 ULTRA does not fall under regulated transport categories. However, standard practices for the safe and secure transportation of chemical products should still be followed to ensure the product's integrity during transit. These practices are part of our commitment to safety and environmental responsibility.

TECHNICAL INFORMATION

Chemical and physical properties of PROTEX3 ULTRA CONCENTRATE.

	PROTEX3 ULTRA CONCENTRATE	ASTM 3306 REQUIREMENTS	METHOD
Ethylene glycol	93 % w/w glycol	Base	
Other glycols	0.5 % max.	5 % w/w max.	
Inhibitor content	5 % w/w		
Water content	5 % w/w max	5 % w/w max	ASTM D1123
Ash content	1.1 % w/w typ.	5 % w/w max	ASTM D1119
Nitrite, amine, phosphate, borate, silicate	No		
Specific gravity, 15°C	1.116 typ.	1.110 to 1.145	ASTM D5931
Specific gravity, 20°C	1.113 typ.		ASTM D5931
Equilibrium boiling point	180°C typ.	> 163°C	ASTM D1120
Reserve alkalinity (pH 5.5)	6.2 typ.	Report	ASTM D1121
pH, 20°C	8.6 typ.		ASTM D1287
Refractive Index, 20°C	1.430 typ.		ASTM D1218

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TECHNICAL INFORMATION

Chemical and physical properties of diluted ready mix product.

	50% DILUTION	40% DILUTION	33% DILUTION	ASTM 3306	METHOD
pH	8.6	8.4	8.3	7.5 to 11.0	ASTM D1287
Foaming properties at 25°C ⌚ break time	50 ml typ. 5 sec. typ.	-	-		ASTM D1881
Foaming properties at 88°C ⌚ break time	50 ml typ. 5 sec. typ.	-	50 ml typ. 5 sec typ.	150 ml max.	ASTM D1881
Initial crystallization	<-37°C	<-24°C	< -18°C	< - 37 °C	ASTM D1177
Freezing protection	-40°C typ.	- 27°C typ.	- 20 °C typ.		
Specific gravity, 20°C	1.068 typ.	1.056 typ.	1.046 typ.		ASTM D5931
Reserve alkalinity (pH 5.5)	3.0 typ.	2.4 typ.	2.1 typ.		ASTM D1121
Refractive Index, 20°C	1.385 typ.	-	1.369 typ.		ASTM D1218
Equilibrium boiling point	108°C typ.	-	104°C typ.		ASTM D1120
Effect on non-metals	No effect	No effect	No effect		GME60 255
Staining characteristics	-	-	No effect	No effect	ASTM D 1882
Hard water stability	No precipitate	-	-		VW PV 1426

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ASTM D1384 GLASSWARE CORROSION TESTS

	BRASS	COPPER	SOLDER	STEEL	CAST IRON	ALUMINIUM
ASTM D3306 (max)	10	10	30	10	10	30
PROTEX3 ULTRA CONCENTRATE	1.6	1.9	0.1	-0.5	-1.4	4.6
Weight loss in mg/coupon						
Weight loss AFTER chemical cleaning acc. to ASTM procedure. Weight gain is indicated by a - sign.						

ASTM D4340 ALUMINIUM HEAT REJECTION TEST, 25 %

WEIGHT LOSS IN MG/CM ² /WEEK ¹	
ASTM D3306 (max)	1.0
PROTEX3 ULTRA CONCENTRATE	< 0.2
1Weight loss AFTER chemical cleaning acc. to ASTM procedure. Weight gain is indicated by a - sign.	

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**MODIFIED MTU HIGH TEMPERATURE CORROSION TEST
 (2000 W)**

CAST IRON				ALUMINIUM		
Test duration hrs.	48	69	116	48	69	116
REFERENCE COOLANT¹						
Hot coupon	-30.0	-13.1	4.3	-18.2	284.2	-
Top coupon	-20.0	1.6	5.7	6.2	152.2	-
PROTEX3 ULTRA CONCENTRATE						
Hot coupon	-0.2	-2.1	-0.5	20.2	24.6	35.1
Top coupon	3.4	0.1	1.9	20.1	42.1	18.5
Weight loss in mg/coupon Weight loss AFTER chemical cleaning acc. to (shortened) MTU procedure. Weight gain is indicated by a - sign.						
¹ Reference coolant is a conventional, high quality, silicate-based coolant						

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AGING TEST

To emphasize the corrosion protection offered by PROTEX3 ULTRA CONCENTRATE, the aging test is conducted under more severe conditions compared to those commonly used in the industry.

TYPICAL INDUSTRY		PROTEX3 ULTRA CONCENTRATE
Test duration hrs.	169 hrs.	504 hrs.
Fluid content	5.0 L	6.0 L
Pressure	1.5 bar	2.5 bar
Flow	3.0 l/min	3.5 l/min
Heat input	5500 W	5000 W
Temperature in heating vessel	95° C	115° C
Temperature in cooling vessel	75° C	95° C
Concentration of coolant in water	40 vol. %	20 vol. %

	Al ¹	AlMn	Cast iron	Steel	Cu	CuZn	Solder CB
REFERENCE COOLANT²							
After initial cleaning	82.10	64.02	-2.19	-1.68	3.62	2.90	21.45
After final cleaning	125.01	94.33	-0.36	0.11	4.99	5.66	25.83
PROTEX3 ULTRA CONCENTRATE							
After initial cleaning	9.77	0.71	-0.07	0.17	1.44	1.62	0.43
After final cleaning	23.58	4.14	0.0	0.24	2.63	2.53	0.55

Weight loss AFTER chemical cleaning acc. to (shortened) MTU procedure. Weight gain is indicated by a - sign.

¹Aluminium SAE 329.

²Reference coolant is conventional, high quality, silicate-based coolant.