



Technical Bulletin

MaxLife

ANTIFREEZE/COOLANT

Universal Formula for Higher Mileage Engines

*US Patents 4,548,787 and 6,203,719

Valvoline's® Zerex® MaxLife® coolant is designed to meet the special needs of higher mileage applications, new cooling systems can also benefit from its unsurpassed freeze protection, enhanced corrosion protection, and excellent anti-boil performance. Valvoline's Zerex MaxLife antifreeze coolant is an ethylene glycol based formulation which can be used in all makes and models of vehicles. It is formulated with Alugard® compatibility additive to improve performance when mixing with other coolant types. The patented* chemistry protects all cooling system metals from corrosion including aluminum. The ASTM test data shown on this sheet reflects the high performance corrosion inhibitor package.

When diluted 50% with water, MaxLife protects modern engines from winter freezing and summer boil over. The chart at the top right provides mixing information. Clean tap water or demineralized water is recommended for dilution. A 40% to 70% concentration range is suggested for optimum corrosion protection. MaxLife with Alugard is compatible with major American brands of ethylene glycol based coolant. It contains a high quality defoamer and will not harm gaskets, hoses, plastics or original vehicle finishes.

MaxLife engine coolant has been dyed yellow to assure color compatibility with a wide range of coolants. It has unsurpassed freeze and boil protection. Valvoline recommends the universal use of MaxLife coolant for all makes and all models of vehicles designed to use an ethylene glycol based engine coolant after ASTM D3306. MaxLife coolant can be used in gasoline and diesel engines.

Valvoline has conducted in-house testing to support MaxLife coolant performance for this application. However, it is important to note that, other than where we have formal approvals, vehicle manufacturers have neither evaluated nor approved MaxLife Coolant. Valvoline stands behind all of its products, including MaxLife Coolant. The universal use of MaxLife Coolant in automotive applications is recommended and supported by Valvoline. Many consumers have chosen to take advantage of this level of performance in newer applications.

The information contained herein is correct to the best of our knowledge. The recommendations or suggestions contained in this bulletin are made without guarantee or representation as to results. We suggest that you evaluate these recommendations and suggestions in your own laboratory prior to use. Our responsibility for claims arising from breach of warranty, negligence or otherwise is limited to the purchase price of the material. Freedom to use any patent owned by Ashland or others is not to be inferred from any statement contained herein.

MaxLife Antifreeze/Coolant Boil/Freeze Protection		
% Antifreeze	Freezing Point, °F/°C	Boiling Point**, °F/°C
33	0/-17	256/123
40	-12/-24	260/126
50	-34/-36	265/128
70*	-90/-67	277/135

* Maximum freeze protection is at 70%.

** Boiling point shown using conventional 15 psig radiator cap.

MaxLife Typical Physical Properties		
Antifreeze Glycols	mass %	96
Corrosion Inhibitors	mass %	2
Water	mass %	2
Flash Point	°F/°C	250/121
Weight per gallon @ 60°F/16°C	lbs./KG	9.363/4.247

Aluminum Water Pump Tests		
ASTM D2809 Pump Cavitation (Standard Test)		
Test Period	Results	Specification
100 hours	8	meets

ASTM cavitation corrosion rating: 10 - perfect 1 - perforated

Valvoline recommends that spent coolant never be disposed of by dumping into a septic system, storm sewer or onto the ground. Instead, contact your state or local municipality for instructions on where to and how to properly dispose of this coolant and protect our environment.

If any coolant is spilled onto the ground, contain the spill and call the state authorities and ask for proper instruction on how to clean up the spill.

Characteristics	Specifications	Typicals	ASTM Method
Chloride	25 ppm, max.	<25	D3634
Silicon	250 ppm, max.	<250	-
Specific gravity, 60/60° F	1.110 – 1.145	1.1305	D1122
Freezing point, 50% V/V	-34°F/-36°C	-34°F/-36°C	D1177
Boiling point, undiluted	325°F/162°C	325°F/162°C	D1120
Boiling point, 50% V/V	226°F/107°C	226°F/107°C	D1120
Effect on engine or vehicle finish	No Effect	No Effect	-
Ash content, mass %	5 max	1.1	D1119
pH, 50% V/V	7.5 – 11.0	10.4	D1287
Reserve alkalinity*	10 min.	11.4	D1121
Water mass %	5 max.	2	D1123
Color	Dinstinctive	Yellow	-
Effect on nonmetals	No Adverse Effect	No Adverse Effect	-
Storage stability	-	> 2 years	-
Foaming	150 ml vol., max.	75 ml	D1881
	5 sec. Break,max.	2 sec.	D1881
Cavitation-erosion rating	8 -10	8	D2809

**Reserve alkalinity (RA) is a term used to indicate the amount of alkaline inhibitors present in an antifreeze formulation. It is incorrect to relate a high RA with a high-quality antifreeze. Present state-of-the-art antifreeze formulations contain many new inhibitors which give added protection to certain metals but do not raise the RA number.*

Typical ASTM Corrosion Test Results			
	Weight Loss Mg/Specimen		
Glassware Corrosion Test	Spec.	Actual	ASTM Method
Copper	10	1	D1384
Solder	30	2	
Brass	10	1	
Steel	10	0	
Cast iron	10	2	
Aluminum	30	0	
Simulated Service Test			
Copper	20	2	D2570
Solder	60	3	
Brass	20	3	
Steel	20	1	
Cast iron	20	4	
Aluminum	60	2	
Hot Surface Corrosion	mg/cm ² /wk		
Specimen weight loss	1.0	0.1	D4340

This information only applies to products manufactured in the following location(s): USA, Canada, Mexico, China, India

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