



# Technical Bulletin



Valvoline™ ZEREX™ G-05® antifreeze coolant is a long life, fully formulated, ethylene glycol-based fluid suitable for passenger cars, light trucks and heavy duty vehicles. The formulation is designed for both gasoline and diesel engines. Its lower-silicate, reduced pH, phosphate free European technology protects all cooling system metals, including aluminum, from corrosion. ZEREX™ G-05 is a nitrite containing coolant designed to protect diesel engine cylinder liners from cavitation. It contains deposit control additives for protection from hard water deposits and scale. The ASTM and other test data shown on this sheet reflect the high performance corrosion inhibitor package.

When diluted 50% with water, ZEREX™ G-05 protects modern engine components from winter freezing and summer boil over. The chart at the top right provides mixing information. A 50% to 70% concentration range is suggested for optimum corrosion protection. ZEREX™ G-05 is compatible with other premium brands of coolant commonly available. It contains a high quality defoamer system and will not harm hoses, plastics or original vehicle finishes.

ZEREX™ G-05 is approved by DaimlerChrysler for worldwide applications. It is also suitable for use in Cummins Deere, Detroit Diesel, Mercedes, MTU, CAT, Navistar, Isuzu and Yanmar diesel engines. ZEREX™ G-05 is approved by Ford North America for newer models.

Call 1-800- TEAM-VAL with questions.

ZEREX™ G-05 antifreeze coolant is approved, meets or exceeds the performance requirements of the following antifreeze specifications and/or is recommended:

ASTM D3306	Cummins 14603 Approved
ASTM D6210	TMC of ATA RP-329B
GM 1899M	Federal Specification A-A-870A
GM 1825M	Chrysler MS 9769 Approved
MTU / DDC Approved	Ford WSS-M97B51-A1 Approved
Mercedes Benz Approved	Detroit Diesel 7SE298 Approved
Perkins Diesel	John Deere & Co. Approved
CAT EC-1	GE Wind Turbines Approved
Mack	Navistar
Paccar	

## ZEREX™ G-05® Antifreeze / Coolant

5 Years / 150,000 miles Light Duty Application  
3 Years / 300,000 Miles Heavy Duty Application  
Phosphate Free, Long Life Hybrid

ZEREX™ G-05 Antifreeze/Coolant Boil/Freeze Protection		
% Antifreeze	Freezing Point, °F/°C	Boiling Point**, °F/°C
40	-12/-24	260/126
50	-34/-36	265/128
60	-54/-48	271/133
70*	-90/-67	277/135

\* Maximum freeze protection is at 70%.

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

ZEREX™ G-05 Typical Physical Properties		
Antifreeze Glycols	mass %	94.0
Corrosion Inhibitors	mass %	5.4
Water	mass %	2.0
Flash Point	°F/°C	250/121
Weight per gallon @ 60°F/16°C	lbs / KG	9.4642 / 4.267
Silicon	PPM	252-308
Phosphates	PPM	30 max

ZEREX™ G-05 Aluminum Water Pump Tests		
ASTM D2809 Pump Cavitation (Extended Test)		
Test Period	Results	Specification
100 hours	9	8

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.

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.



Characteristics	Specifications	Typicals	ASTM Method
Chloride	25 PPM, max.	<25	D3634
Silicon	220-250 PPM.	<240 ppm	-
Specific gravity, 60/60° F	1.110 – 1.145	1.1375	D1122
Freezing point, 50% V/V	-34°F/-36°C	-34°F/-36°C	D1177
Boiling point, undiluted	325°F/162°C	330°F/164°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	<2	D1119
pH, 50% V/V	7.5 – 11.0	8.0	D1287
Reserve alkalinity*	Report	17.9	D1121
Water mass %	5 max.	1.93	D1123
Color	Distinctive	Yellow	-
Effect on nonmetals	No Adverse Effect	No Adverse Effect	-
Storage stability	-	3 years	-
Foaming	150 ml vol., max.	35 ml	D1881
	5 sec. break, max.	2.1 sec.	D1881
Cavitation-erosion rating	8 min.	9	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	0	D1384
Solder	30	0	
Brass	10	1	
Steel	10	-3	
Cast iron	10	1	
Aluminum	30	-2	
Simulated Service Test			
Copper	20	2	D2570
Solder	60	2	
Brass	20	1	
Steel	20	-1	
Cast iron	20	-1	
Aluminum	60	-2	
Hot Surface Corrosion	mg/cm <sup>2</sup> /wk		
Specimen weight loss	1.0	0.15	D4340

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

Material/Product :

<i>Part #</i>	<i>Product</i>	<i>Unit UPC</i>	<i>Carton UPC</i>
ZXG051	ZEREX G-05 AFC 6/1 GAL	0 28882-50143 9	0 28882-60143 9
ZXG052	ZEREX G-05 AFC 55 GAL Drum		
688337	ZEREX G-05 AFC 275 GAL Tote		
ZXG050	ZEREX G-05 Bulk		
ZXG05RU1	ZEREX G-05 Ready-To-Use AFC 6/1 GAL	0 28882-50127 9	0 28882-60127 6
ZXG05RU2	ZEREX G-05 Ready-To-Use 55 GAL Drum		
808136	ZEREX HD G-05 Ready-To-Use 275 GAL Tote		
815927	ZEREX HD G-05 Ready-To-Use AFC 55 GAL Drum		
815926	ZEREX HD G-05 Ready-To-Use AFC Bulk		
809046	ZEREX HD G-05 Ready-To-Use AFC 55 GAL Drum		
809047	ZEREX HD G-05 Ready-To-Use AFC 275 GAL Tote		
809045	ZEREX HD G-05 Ready-To-Use AFC Bulk		

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