

# PRODUCT INFORMATION



## VALVOLINE™ ZEREX™ HEAVY DUTY NITRITE FREE EXTENDED LIFE ANTIFREEZE COOLANT

Valvoline ZEREX Heavy Duty Nitrite Free Extended Life (ELC) Antifreeze Coolant incorporates organic acid technology to protect diesel engines from liner pitting and hard water scale deposits. The silicate and nitrite free extended life chemistry protects all cooling system metals from corrosion including aluminum. ZEREX HD Nitrite Free ELC can also be used in gasoline engines, stationary power, marine, natural gas and light duty applications.

ZEREX HD Nitrite Free ELC provides up to 10 years / 1,000,000 miles / 20,000 hours of service without the need for extenders due to non-depleting organic acid technology. It is backward compatible for all cooling systems using OAT coolants. HD Nitrite Free ELC offers enhanced protection for aluminum cooling system components.

A 50% to 70% concentration range is suggested for optimum performance. HD Nitrite Free ELC is compatible with major long life and conventional brands of ethylene glycol-based coolant. However, long life characteristics may be diminished by mixing with light duty or conventional fully formulated coolants. Applications requiring a water filter should use blank filters (without SCA/DCA) and follow engine manufacturers filter change guidelines. Valvoline recommends filling and always topping off HD Nitrite Free ELC. Keep the cooling system full and check concentration or freeze point regularly.

Call 1-800- TEAM-VAL with questions.

Valvoline ZEREX Heavy Duty Nitrite Free Extended Life (ELC) Antifreeze Coolant is an approved formula for the following specifications:

ASTM D6210

Jenbacher Technical Instruction 1000-0200

*(All engine types and all versions)*

Cummins CES 14603 Registered

Cummins CES 14439 Registered

Deutz DQC-CB14

Valvoline ZEREX Heavy Duty Nitrite Free Extended Life (ELC) Antifreeze Coolant is formulated to meet or exceed the following specifications:

ASTM D3306

ASTM D6210

Case New Holland

CAT EC-1

Detroit Diesel DFS93K217ELC

Federal Spec A-A-970a

Fiat Chrysler MS 12106

Ford Europe WSS-M97B44-D

Ford WSS-M97B57-A1 and A2

Freightliner 48-22880

Isuzu

JIS K 2234

John Deere

Komatsu

Link Belt

Mack Man 324 SNF

Mercedes-Benz DBL 7700

MTU

Navistar MPAPS B-1 Type IIIA

Nitrite Free European OEMS

Paccar

Peterbilt

Scania

Siemens Wind Turbines

Terex

Thermo King

TMC OF ATA RP-329B

TMC OF ATA RP-338

Volvo Construction Equipment

VW

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.

\*US Patent 9328278 and Foreign Patents Pending

<b>ZEREX Heavy Duty Nitrite Free ELC</b> 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.

<b>ZEREX HD Nitrite Free ELC</b> Typical Physical Properties		
Antifreeze Glycols	mass %	92.0
Corrosion Inhibitors	mass %	5
Water	mass %	3
Flash Point	°F/°C	250/121
Weight per gallon @ 60°F/16°C	lbs. / KG	9.407 / 4.267
Borate Free	PPM	10 max.
Silicate Free	PPM	10 max.
Nitrite Free	PPM	10 max.

<b>ZEREX HD Nitrite Free ELC Antifreeze/Coolant</b> Aluminum Water Pump Tests		
ASTM D2809 Pump Cavitation (Extended Test)		
Test Period	Results	Specification
100 hours	10	8

ASTM cavitation corrosion rating: 10 - perfect 1 - perforated

Characteristics	Specifications	Typicals	ASTM Method
Chloride	25 PPM, max.	3 typical	D3634
Specific gravity, 60/60° F	1.110 – 1.145	1.1286	D1122
Freezing point, 50% V/V	-34°F/-36°C	-36.1°F/-37.8°C	D1177
Boiling point, undiluted	325°F/162°C	334.5°F/168.1°C	D1120
Boiling point, 50% V/V	226°F/107°C	227°F/108.3°C	D1120
Effect on engine or vehicle finish	No Effect	No Effect	-
Ash content, mass %	5 max	2.0 typical	D1119
pH, 50% V/V	7.5 – 11.0	9	D1287
Reserve alkalinity*	Report	12	D1121
Water mass %	5 max.	3	D1123
Color	Distinctive	Yellow	-
Effect on nonmetals	No Adverse Effect	No Adverse Effect	-
Storage stability	-	>5 years	-
Foaming	150 ml Vol., max. 5 sec. Break, max.	80 ml 2 sec.	D1881 D1881
Cavitation-erosion rating	8 min	10	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	3	
Brass	10	1	
Steel	10	1	
Cast iron	10	0	
Aluminum	30	1	
Simulated Service Test			
Copper	20	-1	D2570
Solder	60	-1	
Brass	20	0	
Steel	20	0	
Cast iron	20	0	
Aluminum	60	-1	
Hot Surface Corrosion	mg/cm <sup>2</sup> /wk		
Specimen weight loss	1.0	0.1	D4340
John Deere Coolant Cavitation Test	SRI Test 66-39-0302-5	Passed	D7583

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

Part #	Product
846437	ZEREX Heavy Duty Nitrite Free ELC Ready-To-Use AFC 6/1 GAL
846439	ZEREX Heavy Duty Nitrite Free ELC AFC 6/1 GAL
846440	ZEREX Heavy Duty Nitrite Free ELC AFC 55 GAL Drum
846438	ZEREX Heavy Duty Nitrite Free ELC Ready-To-Use AFC 55 GAL Drum
870402	ZEREX Heavy Duty Nitrite Free ELC Ready-To-Use AFC 275 GAL IBC

Effective Date:  
10/6/21

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