VALVOLINE™ ZEREX™ ASIAN VEHICLE BLUE ANTIFREEZE COOLANT

Valvoline ZEREX Asian Vehicle (Blue) is a patented formula designed to meet the specifications of original equipment manufacturers (OEMs) requiring a blue / green, silicate free, hybrid organic acid technology formulation (HOAT). This formula has a service life of up to five years or 150,000 miles. It incorporates premium state-of-the-art phosphated organic acid additive technology in an ethylene glycol base for complete protection of today's modern cooling system and engine components.

ZEREX Asian Vehicle contains no silicates, borates, 2-ethylhexanoic acid (2-EHA), amines or nitrites. It is compatible with premium long life Asian vehicle coolants, both for service and factory fill. Valvoline recommends ZEREX Asian Vehicle for all late model Asian vehicles requiring a blue or green HOAT chemistry.

ZEREX Asian Vehicle meets both ASTM and JIS specifications. In the ready to use formula, it is premixed with deionized water to protect all modern engine components from winter freezing and summer boiling. The chart below provides detailed mixing and boil/freeze protection information for concentrate. ZEREX Asian Vehicle is storage stable for up to five years as both a concentrate or diluted with water. It contains a high quality defoamer and will not harm gaskets, hoses, plastics or original vehicle paint. ZEREX Asian Vehicle is hard water compatible.

ZEREX™ Asian Vehicle (Blue) is an approved formula for the following specifications:

Hyundai/Kia MS591-08

ZEREX™ Asian Vehicle (Blue) is formulated to meet or exceed the following antifreeze specifications:

ASTM D3306
ASTM D4985
Dae Woo
Daihatsu
Federal Specification A-A-870A
Ford WSS-M97B55-A
Honda/Acura
JIS K 2234-1994
Mazda
Mitsubishi ES 64-217
Nissan/Infiniti
Subaru
Suzuki
Toyota/Scion/Lexus
Isuzu

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.

ZEREX ASIAN VEHICLE 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.

Typical Physical Properties		
Antifreeze Glycols	mass %	91.0
Corrosion Inhibitors	mass %	7.0
Water	mass %	2.0
Flash Point	°F/°C	250/121
Weight per gallon @ 60°F/16°C	lbs / KG	9.54 / 4.33
Silicon as Si	PPM	<10 max
Borates as B	PPM	<10 max

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.	<10	D3634
Silicon as Si	250 PPM, max.	<1	-
Specific gravity, 60/60° F	1.110 – 1.145	1.1450	D1122
Freezing point, 50% V/V	-34°F/-36°C	-34°F/-36°C	D1177
Boiling point, undiluted	325°F/162°C	347°F/175°C	D1120
Boiling point, 50% V/V	226°F/107°C	227°F/108°C	D1120
Effect on engine or vehicle finish	No Effect	No Effect	-
Ash content, mass %	5 max	<5	D1119
pH, 50% V/V	7.5 – 11.0	8.4	D1287
Reserve alkalinity*	Report	12	D1121
Water mass %	5 max.	2.3	D1123
Color	Distinctive	Blue	-
Effect on nonmetals	No Adverse Effect	No Adverse Effect	-
Storage stability	-	5 years	-
Foaming	150 ml Vol., max.	80 ml	D1881
Cavitation-erosion rating	8 min.	10	D2809
JIS K2234	Max. 4	Max. 4	N/A

**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	2	
Solder	30	1	D1384
Brass	10	1	
Steel	10	1	
Cast iron	10	3	
Aluminum	30	0	
Simulated Service Test			
Copper	20	2	
Solder	60	4	D2570
Brass	20	4	
Steel	20	0	
Cast iron	20	1	
Aluminum	60	1	
Hot Surface Corrosion	$mg/cm^2/wk$		
Specimen weight loss	1.0	0.1	D4340
Repassivation of Aluminum Surfaces	**Minimum, mV**		
Average of 3 Tests	>-400	+447	

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

Material/Product

Part #	*Product*
861398	ZEREX ASIAN VEHICLE BLUE AFC RTU 6/1 GA
874908	ZEREX ASIAN VEHICLE BLUE AFC RTU DR 55 GA
862143	ZEREX ASIAN VEHICLE BLUE AFC RTU BULK
865309	ZEREX ASIAN VEHICLE BLUE AFC DR 55 GA
862142	ZEREX ASIAN VEHICLE BLUE AFC BULK

Effective Date:	Expiration Date:	Replaces:	Author's Initials:	Pages:
07/27/2017	07/27/2022	02/11/2016	DET	3