

TO: ALL ISUZU POWERTRAIN DISTRIBUTORS AND DEALERS: SALES, SERVICE & PARTS PERSONNEL

SUBJECT: COOLANT REQUIREMENTS AND MAINTENANCE

Isuzu Motors America, LLC, (ISZA) takes pride in the durability of our engines and is providing this bulletin so that the service life of engines sold can be maximized. This bulletin outlines the proper usage and maintenance of coolant for Isuzu off-highway and marine diesel engines. The term "coolant" is referring to the mixture of water and antifreeze used in diesel engine cooling systems.

Water Quality Requirements

- High levels of dissolved chlorides, sulfates, magnesium and calcium in tap / ground water cause scale deposits and corrosion, which may result in water pump failures, poor heat transfer and overheating.
- It is recommended to use distilled or deionized water and the water must be below the following maximum element levels.
 - pH 6.0~8.0
 - Cl⁻ Less than 30ppm (max)
 - SO₄²⁻ Less than 30ppm (max)
 - HCO₃³⁻ Less than 30ppm (max)
 - Mg²⁺ Less than 10ppm (max)
 - Ca²⁺ Less than 30ppm (max)
 - Hardness Less than 116

Antifreeze

- **Isuzu PowerTrain's recommended coolant can be purchased on ICS (Distributors) or from the Isuzu Distributor. Please order Part Number: 8-12346-290-0**
- Antifreeze lowers the freezing point of coolant as well as raises the boiling point. A 50 / 50 mixture of antifreeze and water provides optimum freezing and boiling point protection.
- An Extended Life Coolant meeting ASTM D6210 (supplemental coolant additive (SCA) required) or ASTM D4985 (fully formulated) is required.
 - Fully formulated antifreeze is recommended rather than antifreezes requiring SCA, as antifreeze requiring SCA involves another step and opportunity of human error.
- Coolant concentrations less than 40 percent antifreeze increases the possibility of coolant freezing and increases the chances of liner pitting in wet liner applications.
- Coolant should never exceed 60 percent antifreeze, except in arctic climates but never exceed 65 percent.

Maintenance

- Coolant to be tested yearly or every 4000 hours - whichever occurs first.
 - The use of coolant test strips or laboratory coolant testing is recommended.
 - If out of specification after one year or 4000 hours, replace the coolant.
 - If out of specification before one year or 4000 hours, improve the coolant quality with SCA or replace the coolant and retest.
- If 15 percent or more coolant is lost, the cooling system should be refilled with an appropriate coolant mixture and retested.
 - Caution - the addition of 100 percent water or 100 percent antifreeze may lower the cooling or freezing properties of the coolant.
 - Top-off cooling systems with a fully formulated antifreeze / coolant.
 - Extended Life Coolant can be contaminated by over-dilution with water or conventional coolant. If Extended Life Coolant becomes contaminated, the performance of the corrosion inhibitors may be reduced.
- It is important that routine cooling system maintenance is recorded. The following information should be recorded:
 - Date of service and service performed
 - Hours on engine and coolant
 - Freezing point
 - Coolant top-off amount
 - SCA level when measured
 - Laboratory coolant test results (if applicable)

Marine Applications

- A Long Life OAT coolant meeting ASTM D6210 (SCA required) or ASTM D4985 (SCA required) is recommended.
- Coolants with less than 30 percent antifreeze must never be used in marine engines.

Unacceptable Practices

- Use of methyl alcohol base antifreeze.
- Use of silicate or borate antifreeze.
- Use of cooling system sealing additives.
- Use of coolants with less than 30 percent antifreeze in marine applications.
- Over or under-concentration of SCAs.
- Use of coolants with less than 40 percent antifreeze on engines with EGR.



Coolant Recommendations For All Emissions Tier Levels and Operation:

Supplier	Items	LLC Concentration	
		Warm Area	Cold Area
Isuzu PowerTrain Coolant	Part Number: 8-12346-290-0	50	50
Arteco Chevron Texaco Caltex	Caltex Extended Life Coolant	50	50
	Havoline XLC (OF02)		
	Havoline Extended Life Anti-Freeze/Coolant Concentrate		
	Texaco Ursa ELC NF Concentrado		
	Havoline Dex-Cool Extended Life Antifreeze		
	Havoline Dex-Cool Extended Life AF/C-B		
	Chevron Dex-Cool extended Life Antifreeze/Coolant		
	Chevron Dex-Cool Extended Life AF/C-B		
	Texaco Extended Life Coolant/Antifreeze-NF		
Chevron Delo Extended Life Coolant/AF-NF			
Total	Glacelf Auto Supra	50	50
BP Castrol	Castrol Antifreeze SF	50	50
Shell	Dex-Cool Antifreeze/Coolant	50	50
	ShellZone Dex-Cool Antifreeze/ Coolant	50	50
AC Delco	Dex-Cool Extended Life	50	50
PENNZOIL	Dex-Cool Extended Life Antifreeze and Summer Coolant	50	50
Valvoline	Zerex Dex-Cool Antifreeze/Coolant	50	50
Prestone	Dex-Cool Extended Life Antifreeze/Coolant	50	50

Warning: Dispose of used coolant in a manner adhering to local environmental regulations. Coolant is toxic and can be fatal to children and pets.

If you should have any questions or concerns, please contact your Service Representative.

Best Regards,

Daniel Luke

Service Instructor Specialist