



Shell HD *Phosphate Free Antifreeze/Coolant*

Shell HD Phosphate Free Antifreeze/Coolant (AFC) is a phosphate free, fully formulated AFC pre-charged with supplemental coolant additives (SCAs). This product meets key requirements of engine manufacturers such as Detroit Diesel who specify phosphate free AFC as well as meeting the needs where ASTM D6210, conventional, fully formulated AFCs are needed. Shell HD Phosphate Free AFC is amine free. When used with recommended monitoring and maintenance with SCAs, Shell HD Phosphate Free AFC will provide the vehicle manufacturer's recommended service life for conventional fully formulated AFC. This product is not recommended for passenger cars unless specifically recommended by the manufacturer.

DESIGNED TO MEET CHALLENGES

Performance, Features & Benefits

- Effective, long term corrosion protection for aluminum, brass, cast iron, steel, solder, and copper
- Reduced deposits due to low silicate formula
- Reduced hard water scale due to phosphate free formula
- Protects against winter freeze up and minimizes the chance of summer boil over
- Excellent anti-foam characteristics
- Compatible with other commercially available fully formulated coolants
- Compatible with cooling system SCA/chemical filters
- Can be tested with commercially available test strips
- Does not require an initial dose of supplemental coolant additives
- May reduce the number of supplemental coolant additives required when used as a top-up fluid
- Compatible with other fully formulated coolants like Cat DEAC, Fleetguard Compleat®, FLEET CHARGE®, Prestone® Heavy Duty, POWER-COOL®

Main Applications

- Heavy duty diesel engine coolant/antifreeze for use in on-road or off-road vehicles.

Specifications, Approvals & Recommendations

- ASTM D3306, D6210 and D4985 (Meets)
- TMC RP 302B, RP 329, RP 351 (Meets)
- Case/New Holland (Meets)
- CAT EC-1 (Meets performance)
- Cummins CES 14603 (Meets)
- Detroit Diesel DFS 93K217 (Approval)
- John Deere H24A1 and A2 (Meets)
- Navistar MPAPS B-1 (formerly Int CEMS B-1) (Meets)
- Paccar (Meets)
- Volvo/Mack (Meets)
- Waukesha 4-1947D (Meets)

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk.

Compatibility & Miscibility

Please note this product is compatible with commercially available supplemental coolant additives and other conventional and fully formulated coolants. This product should not be added to extended life coolants since over dilution of extended life coolants with conventional coolants may adversely affect their performance.

Typical Physical Characteristics

Properties	Method	Shell HD Phosphate Free Antifreeze/Coolant
Code No.		94083
Appearance		Purple
Specific Gravity	60/60°F	1.13
Freezing Point 50 vol % q.s. Aqueous solution	°F	ASTM D1177 -34
pH 1:2 dilution with water		ASTM D1287 10.5
Reserve Alkalinity, as received		ASTM D1121 10
Silicon	ppm	200
Nitrite	wt %	0.24

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Health, Safety & Environment

• Health and Safety

Shell HD Phosphate Free Coolant/Antifreeze is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

Guidance on Health and Safety is available on the appropriate Safety Data Sheet, which can be obtained from your Shell representative.

• Protect the Environment

Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

• How to Use and Maintain

For top-up a 50/50 dilution of Shell Fully Formulated Phosphate Free Coolant and water or Shell Fully Formulated Phosphate Free Coolant 53/47 should be used.

Freeze point should be checked at every oil change or at least twice per year. For optimum year round protection against freezing, boiling and corrosion, at least a 50/50 mix of Shell Fully Formulated Phosphate Free Coolant and water is recommended. For maximum protection against freezing in extremely cold areas a 60 percent solution (3 parts Shell Fully Formulated Phosphate Free Coolant Concentrate and 2 parts water) can be used. Concentrations greater than 67 percent or less than 40 percent are not recommended.

If doing a complete flush and refill, please note: Shell recommends flushing your system with clean water before you install Shell Fully Formulated Phosphate Free Coolant/Antifreeze. Shell does not recommend chemical flushes, but if significant deposits are visible use a commercial cooling system cleaner designed for your engine. Follow the manufacturer's flushing procedure and dispose of properly. Be sure to flush the system thoroughly with water twice after chemical flushing.

Coolant level should be kept at the proper level to prevent air entrapment, which could lead to corrosion problems.

Shell Fully Formulated Phosphate Free Coolant requires the addition of supplemental coolant additives (SCA's) on a regular basis. To determine when to add SCA's you must use a test strip made for purple colored coolant. Coolant should be checked every 15,000 miles or at every oil change. Follow the recommendations of the SCA supplier to determine how much additive should be used based on the test strip results.

In order to prevent the formation of silicate gel in storage containers, concentrated Shell Fully Formulated Phosphate Free Coolant should not be stored longer than eighteen months without agitation.

- **Handling and Safety Information**

Shell Fully Formulated Phosphate Free Coolant/Antifreeze has a shelf life of about 18 months. Concentrate product should be mixed before use. Always dispose of used coolant in accordance with local, state and federal guidelines. These products are not to be used to protect the inside of potable water systems against freezing.

- **Boiling and Freeze Protection for a 50/50 mix of 94083 Shell Fully Formulated Phosphate Free Coolant/Antifreeze and water**

Boiling protection, °F (°C) (15 lb pressure cap) = 265°F (129.4°C)

Freezing protection, °F (°C) = -34°F (-36.7°C)

Additional Information

- **Advice**

Advice on applications not covered here may be obtained from your Shell representative.