

# Need-Release for Medium Duty trucks (NF-2091)

Category: Coolants  
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## Introduction:

Many customers have expressed a desire for information and recommendations regarding the use of Pencool Need-Release coolant filters in a Fill-For-Life® program in newer trucks that have low-coolant loss features and will be maintained only with "Fully-Formulated" Antifreeze. Experience has shown that the use of the Need-Release part number 2088 in these systems contributes more than enough nitrite, resulting in a gradual increase in nitrite concentrations. While this phenomenon is not problematic, it is sometimes misinterpreted, triggering an unnecessary coolant change in some maintenance locations. The behavior can be avoided by following the recommendations herein.

## Penray Recommendation for Trucks (1997 or newer) with 8 to 12 Gallon Cooling Systems Filled and Maintained with "Fully-Formulated" Antifreeze

Using and maintaining a properly formulated coolant is one of the most important aspects of engine maintenance. The intent of this bulletin is to provide the information required by diesel engines in heavy-duty trucks to avoid cooling system problems. The reader is referred to Technical Bulletin 01.007 for additional background information.

This recommendation assumes exclusive use of a coolant consisting of 50% "fully-formulated" phosphate-free antifreeze compliant with TMC Recommended Practice 329. "Fully-formulated" antifreeze should be used without the addition of any additional coolant additive. Always verify that the freeze point and nitrite concentrations are correct with a Penray Two-Way Heavy Duty Test Strip (TS 100 or TS 102) to insure engine protection. Many antiquated antifreeze formulations available in the market may not contain all the required additives. Penray recommends against using these types of antifreezes or coolants in the Fill-For-Life program.

## Supplemental Coolant Additive (SCA) for Fully-Formulated Coolant:

- "Fully-formulated" coolants do not require, and should not receive, an initial charge of SCA. Check the nitrite concentration at regular intervals (3 months, 20,000 miles or 250 hours, whichever comes first) with a Penray test strip. Additional SCA must be added to the coolant if it becomes diluted, as indicated by a nitrite concentration less than or equal to 1,200 PPM. If the nitrite concentration is greater than 1,200 PPM, and the system is equipped with a Need-Release (part number NF-2091), do not add additional Pencool SCA. The Penray Need-Release automatically provides extended protection.

## Coolant Test Procedures:

Nitrite concentration is an indication of the overall coolant inhibitor concentration. Penray test strips are recommended. The coolant must be tested for required nitrite levels at intervals of 3 months, 20,000 miles or 250 hours. Nitrite concentration must be at least 1,200 ppm.

## Test Kit Procedures:

Use a Penray Two-Way Heavy Duty Test Strip (TS 100 or TS 102) to measure nitrite and glycol concentrations. Cavitation/corrosion protection is indicated on the strip by the level of nitrite concentration. Freeze/boil-over protection is determined by glycol concentration.

## Summary of Recommendation:

1. Always maintain the engine coolant to meet engine manufacturer's specifications.
2. For topping-up and initial-fill use 50% "fully-formulated" antifreeze, and 50% plain water that meets ASTM water quality standards.
3. In 1997 model year, or newer, trucks using Need-Release filters, part number NF-2091 may be desirable and is acceptable in cooling systems up to 12 gallons system capacity.
4. Test the nitrite concentration with a Penray Test Strip. Add Pencool only if the nitrite concentration is below 1200 ppm.
5. Do not use automotive or other non-nitrite containing coolants.
6. The coolant, maintained in this manner, may be run to engine overhaul. There is no preventative maintenance change interval.