

Fully Formulated (Pre Charged) Antifreeze Benefits

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Introduction:

Many industry and professional organizations involved with heavy duty engines and coolants have been discussing pre-charged or fully-formulated antifreeze/coolants. These products offer convenience, low cost and performance benefits detailed below.

Background:

Most heavy duty fleets use antifreeze formulated for diesel engines. This antifreeze is referred to in the industry as "low silicate", or by some of the specification numbers that were established to define its characteristics such as ASTM D-3306. This type of antifreeze differs from the automotive grades in that it is not ready to use in diesel engines. The D-4985 specification antifreeze, by design, requires addition of a supplemental coolant additive (SCA) such as Pencool® 3000 before it goes into service. The exact chemistries of competing antifreezes that meet the D-4985 specification vary, therefore, SCM must be engineered to be compatible and complementary to many different antifreezes. As a result, some overlap of chemistry is inevitable in the finished coolant. The blending of antifreeze, water and SCA becomes a bit complicated. It is possible for too much or too little of one of the three components to be used, resulting in either inadequate protection or problematic chemical imbalances.

Fully Formulated Antifreeze:

To eliminate the confusion and difficulties of performing coolant blending on the shop floor, as well as to provide an optimum chemical formulation, 'fully formulated' heavy duty antifreeze was developed. This antifreeze, like automotive antifreeze, is simply mixed with water and poured into the cooling system. It contains the necessary 4985 base chemistry and the SCA chemistry needed to provide complete system protection.

Resulting Benefits:

- Better quality control
- Reduced cost compared to mixing components
- Reduced solids in the coolant to improve water pump life