



Preventing Gelling of Diesel Fuels

How Additives Work

Pour Point Depressants are chemicals, which can lower the natural fuel Gel (Solidification) Point Temperature of fuels. Today's newer pour point depressants work by changing the attraction of wax crystals in addition to modifying the shape and size of the wax crystals as they form. These additives effectively reduce the rate of crystal formation and allow the other flow modifiers to perform as designed.

Flow Improvers Improve Cold Filterability and Lower the Fuel Pour Point

Flow improvers change the wax crystal formation by both forming nuclei and arresting growth. Instead of the larger, flat untreated platelets, a formation of small, multi-axial needle crystals are developed by flow improvers. As the temperature of the fuel drops below the cloud point temperature, small wax crystals begin to grow on the nuclei.

A flow improver's additive molecules attach to crystal surfaces and block further growth. The resultant outcome is smaller crystals. Due to the presence of additive molecules between crystals, the crystals tend not to adhere to each other. By virtue of their small size and multi-axial needle arrangement, these wax crystals pass more easily through fuel filters. These attributes are essential in the formulation of a Premium Diesel Fuel Additive suitable for winter use.

At the proper treat level, a good CFPP additive formulation will provide optimum fuel system protection by modifying the wax forming tendencies of the fuel. This will allow the fuel to perform dependably at ambient temperatures in excess of 12° to 15°F below the cloud point of the fuel. While the fuel will be hazy or cloudy, the equipment will continue to operate satisfactorily with no significant power loss or engine performance change.

De-Emulsifier and De-Icer Agents Break Any Fuel/Water Mixtures and Prevent the Water from Freezing

These items are most important in North America because of the pipeline transportation of fuel products. Unfortunately, as a result of inadequate "housekeeping" many of the fuel handling and storage systems (as well as fuel tanks) in the Canada and the U.S. are plagued with excessive water bottoms and abnormal amounts of free water accumulations.



Cold Weather Additives

1-506-375-6608



Consequently, these additive components are essential if water corrosion (rust) is to be minimized and winter problems are to be avoided when using a premium diesel fuel additive. Unfortunately, although these items are very cost effective, they are quite often not utilized at the required dosage levels to adequately protect the fuels, storage tanks, and delivery systems.

While de-emulsifiers additives are available from various suppliers and can be of different chemical make-up, the only effective de-icer additives are glycol ether type chemicals. These additives chemically combine with the water droplets (and dissolved water accumulations), break the surface connection with the fuel, and lower the freeze point temperature in direct relation to the amount of de-emulsifier additive and de-icer additive present.

The 4Plus Artic and Polar Max products use both of the above technologies to keep your fuel from gelling and freezing. If fuel is already gelled, Diesel Melt should be used.

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