

# AMSOIL Cold Flow Improver Reformulated

New Cold Flow Improver provides superior cold-weather performance.

AMSOIL Cold Flow Improver (ACF) has been reformulated to provide maximum cold-flow capabilities in diesel fuels. The new formulation provides superior performance over the former DFF formulation, which is available while supplies last.

## Cold Weather and Diesel Fuel

As the temperature drops, the wax naturally found in diesel fuel begins to form crystals. The point at which wax crystals form is known as the cloud point. These wax crystals eventually clog the fuel filter and starve the engine of fuel or prevent it from starting.

## #1 Diesel Fuel

One traditional solution to cold-weather problems in diesel engines is the use of #1 diesel fuel, which is diesel fuel diluted with kerosene. While #1 diesel fuel has an advantage in low-temperature operability, there are also several disadvantages. The energy content of #1 diesel fuel is about 95 percent of #2 diesel fuel, resulting in reduced fuel economy and less horsepower. In addition, the kerosene used in #1 diesel fuel provides less lubrication for the fuel pump and fuel distributor, increasing the likelihood for wear on these critical components.

## Cold Weather Performance Parameters

There are several areas of diesel fuel improvement touted by various cold-flow additive manufacturers, including pour point, cloud point and cold filter-plugging point (CFPP). Many claims can be misleading, so it is important to understand this terminology in order to determine which products truly provide superior performance.

It is important to distinguish between CFPP and pour point. Many competitive products make great claims regarding pour point, leading consumers to believe their products are superior when they actually have an inferior CFPP. Once fuel surpasses its cloud point, the wax crystals begin to clog the fuel filter. The CFPP temperature is a more important characteristic than pour point because the engine will not run if fuel cannot pass through the fuel filter.

## AMSOIL Cold Flow Improver

AMSOIL Cold Flow Improver provides superior fuel flow to help prevent filter plugging in cold temperatures. It is formulated for a broad range of diesel fuels, including #1 diesel fuel, #2 diesel fuel, biodiesel and hard-to-treat ULSD fuels. AMSOIL Cold Flow Improver minimizes the need for blending standard #2 diesel fuel with lower-quality #1 diesel fuel, helping maintain fuel economy and keep engines functioning normally. It is also excellent for use with home heating oil and kerosene heat systems.

AMSOIL Cold Flow Improver uses a jet-fuel-type deicer that disperses water to control ice formation throughout the fuel system. It inhibits wax crystal

formation and can improve the pour point in ULSD by as much as 58°F (32°C), easing the flow of fuel to the engine and improving diesel engine reliability in cold temperatures. In addition, AMSOIL Cold Flow Improver lowers the CFPP by as much as 34°F (18°C) in ULSD.

## Concentrated ACF vs. ACF Blended with Fuel

The new formulation of AMSOIL Cold Flow Improver will show no signs of solidifying in its concentrated state in the bottle until the temperature reaches -22°F (-30°C), a great improvement over the previous formulation, which solidified in the bottle at 0°F (-18°C). Cold Flow Improver will only freeze in its concentrated state, and AMSOIL recommends storing it at temperatures above 0°F (-18°C). If ACF is allowed to freeze in the bottle it can be thawed and used. When mixed with diesel fuel, ACF effectively improves diesel fuel cold temperature properties. It is recommended, however, that fuel be treated at temperatures above 32°F (0°C). ACF will not dissolve wax crystals which have already formed in the fuel.

## Application Information

AMSOIL Cold Flow Improver is specifically formulated for improving fuel flow, helping maintain fuel integrity and preventing the clogging of filters and injectors. It is excellent for use with diesel fuels, heating oils and kerosene. Two oz. of AMSOIL Cold Flow Improver treats five gallons of fuel. One 16 oz. bottle treats 40 gallons. The clear bottles feature an easy-to-read graduation label for accurate dispensing, helping ensure proper treat ratios.



### Pour Point (Actual Temperatures)

Sample	Treat Rate	Cost per 5-Gallon Treatment	High Sulfur Diesel		ULSD		B20	
			°C	°F	°C	°F	°C	°F
Untreated	N/A	N/A	-24	-11	-28	-18	-21	-6
Power Service	3.2 oz/5 gal	\$0.99	-24	-11	-60	-76	-45	-49
AMSOIL ACF	2.0 oz/5 gal	\$0.56	-21	-6	-60	-76	-48	-54

### Cold Filter Plugging (Actual Temperatures)

Sample	Treat Rate	Cost per 5-Gallon Treatment	High Sulfur Diesel		ULSD		B20	
			°C	°F	°C	°F	°C	°F
Untreated	N/A	N/A	-9	16	-15	5	-16	3
Power Service	3.2 oz/5 gal	\$0.99	-17	1	-30	-22	-15	5
AMSOIL ACF	2.0 oz/5 gal	\$0.56	-16	3	-34	-29	-30	-22

Test results from September 2007