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Product	Type
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Summer+ Formula	Multifunctional Diesel Fuel Additive
	New Generation Performance Diesel Fuel Additive

Application

Designed to improve the quality characteristics of diesel fuel.

Recommended for use at: 462—1890 ppm v/v

Physical Characteristics

	Minimum	Target	Maximum
BASE NUMBER (MGKOH/G)		11.62	
FLASH POINT, C, PMCC		69.8	
LBS PER U.S. GAL @ 15.6 C		7.79	
LBS PER IMP GAL @ 15.6 C		9.36	
POUR POINT, C		-52.2	
SPECIFIC GRAVITY @ 15.6 C	0.915	0.935	0.955
VISCOSITY @ 40 C, CST		15.1	

Chemical Characteristics

	Minimum % Weight	Typical	Maximum % Weight
NITROGEN	0.92	3.56	1.13

Benefits

Opti-Lube Summer+ Formula diesel additive contains a revolutionary deposit control additive, which delivers market leading performance in new common rail direct injection systems, as well as outstanding nozzle cleanliness in older engine designs. Opti-Lube Winter Formula allows the fuel marketer to dial in a range of performance levels based on market requirements, using a single

benefits imparted to diesel fuel quality by Opti-Lube Summer+ Formula can be summarized as follows.

- Flextreat support for range of performance levels using a single product increasing customer flexibility and reducing inventory logistics costs for multiple products.
- Increases the cetane number of the fuel for improved performance.
- Increases the lubricity of fuel.
- Able to keep clean and clean up injector deposits in both legacy vehicles and the latest engine designs in both the light duty and heavy duty markets.
- Outstanding performance in the Peugeot DW10 test procedure with the capability to completely prevent loss of engine power and even restore lost power due to fouled injectors at higher product treats.
- Very high levels of deposit control in standard CEC XUD-9 injector fouling test, with capability to achieve 100% flow remaining at extremely competitive product treat rate.
- Clean up XUD-9 indirect injection fuel injectors.
- Elimination of steel corrosion in treated fuel as demonstrated in ASTM D665A procedure.
- Proven performance in mineral-biodiesel blends, including injector keep clean in XUD-9 and DW10 methods.
- Comprehensive no-harms credentials.

When used at the recommended treat rates, Summer+ Formula helps diesel fuels meet the National Conference on Weights and measures (NCWM), Engine Manufacturer's Association (EMA) and Truck Maintenance Council (TMC) requirements for:

- Injector cleanliness as measured by:
 - *Cummins L10 Injector Depositing Test (Keep Clean)
 - *Peugeot XUD0 Test (Keep Clean)
- Improved fuel thermal and storage stability
- Dispersion of insoluble gums
- Corrosion protection
- Prevention of formation of stable fuel-water emulsions

Additionally, fuels containing Summer Formula at the higher treat rates demonstrate:

- Multiple Cummins L10 Injector Depositing Test (Keep Clean) Passes
- Multiple Peugeot XUD9 Test (Keep Clean)
- Cummins L10 Injector Depositing Test Clean Up
- Cummins L10 Steady State Clean Up
- Peugeot XUD9 Clean UP
- Fuel Economy Improvement
- Reduce Exhaust Emissions

Opti-Lube Summer+ Formula Unloading, storage and blending instructions

General handling instructions– In general, Opti-Lube recommends, as a minimum, the use of neoprene or nitrile rubber gloves and safety glasses or chemical splash goggles. The Material Safety Data Sheet should be consulted for specific information and for information on health and safety when handling this product.

Fire and explosion hazard data

Flash Point (method)	Classification
69.8°C PMCC	Combustible

Temperature Recommendations

UNLOADING	Plumping Temperature	Ambient°C	°F
	Maximum Temperature*	54°C	129.2°F

STORAGE

Maximum Temperature for Long-Term Storage	45°C	113°F
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BLEANDING

Maximum Base Oil Temperature for Mechanical or In-Line Mixing	54°C	129.2°F
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EQUIPMENT RECOMMENDATIONS

Type of Pump	Centrifugal
Type of Transfer Line	Ball Launched
Transfer Line Size	2-3 inch / 5-8 cm.

HEAT SOURCE

Type	N/A
Storage Tanks	N/A

NOTES

POUR POINT	-52.2°C, -61.9°F
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Low Flash Point:	Use caution when handling this material
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Additional Recommendations

*Holding the material in excess of this temperature may cause chemical degradation. Use steam for heating and tracing only when the material is in motion to avoid localized overheating. Cold Temperature Storage - If product has been stored below its pour point temperature it should be heated to 21°C/20°F before using.