

## Diesel Fuel Conditioner (DFC) Premium Aftermarket Diesel Fuel Additive

### Description

Nemco Diesel Fuel Conditioner (DFC) is designed for all-season use in low sulphur diesel fuels. Formulated with an award-winning additive, this all-season diesel fuel conditioner provides exceptional deposit control and minimizes injector fouling. DFC also provides effective anti-gel protection during cold weather operation.

Our Diesel Fuel Conditioner exhibits an outstanding ability to clean up latest technology diesel fuel injectors and provides excellent control of diesel fuel foaming tendencies. It has proven performance in both regular diesel and biodiesel fuels. Cetane improvement provides enhanced power and fuel economy.

### Advantages

- Lower treatment ratio compared to conventional deposit control additives
- Deposit control; increases power and delivers outstanding engine performance
- 3X more effective in prevention and gradual clean-up of fuel injector system deposits than current technology additives

### Application

Diesel engines; observed benefits for typical heavy duty vehicles and fleets under recommended

treatment ratio and great emission control in new Tier IV engines. See Trial Tests\*\* and Treatment Ratio\*\*\* on next page.

### Use and Storage

Always check your vehicle manufacturer's Always read and follow your vehicle manufacturer's specifications for diesel engine additive use. Diesel Fuel Conditioner typically has a shelf life of 5 years under ideal storage conditions; keep packages closed while not in use, store in a cool and dry area.

### Health, Safety, & Environment

GHS compliant Safety Data Sheets are available at [nemco.ca](http://nemco.ca) under the Safety Data Sheets. For SDS in French, please contact [info@nemco.ca](mailto:info@nemco.ca). This material is WHMIS 2015 and TDG classified. The SDS contains valuable information critical to the safe handling and proper use of the product. Always take used chemicals to an authorized collection point. Avoid discharge into drains, soil, or water. As with any chemical, keep out of reach of children and animals.

### Quality

Nemco works with respected industry suppliers. Nemco Resources Limited manufacturing facility in Winnipeg, Manitoba is proud to be certified to ISO9001. For questions regarding quality, please contact your local sales representative.

### Typical Characteristics - Nemco Diesel Fuel Conditioner

Properties	Method	Performance	Properties	Method	Performance
Colour	Appearance	Red	Freeze point, °C(°F)	ASTM D1177	-76(-104)
SPG, 20°C	Internal	0.816	Flash point, °C(°F)	ASTM D56	15(59)

*These characteristics are typical of current production, variations in these characteristics may occur.*

### Availability and product codes

Pack size	12x1L case	4x4L case	20L pail	205L drum
DFC	CHCPZ0013	CHCPZ0024	CHCPZ0042	Special Order
Availability	To order, contact us toll free 855-755-6737 or at <a href="mailto:orderdesk@nemco.ca">orderdesk@nemco.ca</a>			

DFC Function	Ratio (L Fuel)	DFC Function	Ratio (L Fuel)
IDI Engine deposit control or clean up	1:1000	Maintain HSDI engine "as-new"	1.2:1000
HSDI Engine deposit control	1:1000	Improve diesel fuel lubrication	1.2:1000
Mineral-biodiesel engine deposit control or clean up	1:1000	HSDI Engine fully clean up or power restore	1.6:1000
Improve cetane number by 3-5 units	1:1000	Prevent injector fouling/sticking	1.6:1000

### Comparison with major competitor brand (John Deere Fuel-Protect\*)

Feature	Benefit	Nemco DFC	Summer*	Winter*
Conditioning	Extend fuel shelf-life	X	X	X
Deposit control	Diesel engine power improvement	X	X	X
	Biodiesel engine power improvement	X	-	-
Water Control	Sheds water/ Prevent icing	X	X	X
Prevent gelling	Cold flow improver	X	-	X
Anti-corrosion	Metal protection	X	N/A	N/A
Prevent power loss	Reduce engine power loss	X	X	X
Detergent	Tank power restore	X	-	-
Cetane improver	CN Increase	X	X	X
Lubricant	Improves diesel fuel lubrication	X	X	X
Solvent	Cleaning	X	-	-

### \*\*Trial Tests - DW10 and Injector Clean Up Study:

#### About test DW10:

- Difficult, costly installation
- Special Euro 5 injectors and modified ECU can take up to 3 to 6 months to arrive after placing order
- Requires stainless steel fuel system -no zinc, copper, brass or galvanized parts
- Fuel consumption: 800L per test, plus 400L of DF-79-07 fuel (@ \$4 litre) for injector running-in
- Test engine lasts from 300-1000 hrs (6-20 tests)
- At approx. \$22k per test (cfXUD9 @ \$4k), this is the most expensive CEC fuels test
- The XUD9 should continue to be used to confirm deposit control additive effectiveness even when DW10 performance is good
- Zn-doped fuels may respond to certain non-deposit control chemistry in the DW10

#### Test results for DW10:

- DW10 Deposit Control in DF-79-07 Fuel: can completely prevent power loss at recommended treat rates in latest technology industry test
- DW10 Deposit Control in RF-93-T-95 Fuel: can completely prevent power loss at recommended treat rates in latest technology industry test
- 5 Tank Injector Clean Up: gradual restoration of engine power through injector clean up with Nemco's DFC

#### Conclusions:

- The real capability of Nemco's DFC detergent to remove deposits from fouled DW10 injectors with longer term use
- Clean up with Nemco's DFC is at least equivalent to mechanical sonication of injectors in this testing
- 97% clean up after 8 tanks of fuel treated with Nemco's DFC deposit control additive

**Trial Program 1: Vehicle performance demonstration in VW 1.9L TDi 5-tank Clean up**

- Carbon Dioxide reduced by up to 3%
- Fuel Economy saving of up to 3.6%
- Power increased by up to 2.5%
- Emissions reduced: Non Methane Hydrocarbons up to 78%, Carbon Monoxide up to 38%, Nitrogen Oxide up to 3%

**Trial Program 2: Kenworth Class 8 Truck On-Road Clean Up**

- 3.6% improvement in fuel economy calculated using the manual fuel additions log. -on-board instrumentation showed a consistent 2.8% improvement in fuel economy
- Injector flows improved based on the actual flow results. -Increases ranged from 2.1% at full load (1500 rpm) to 9.6% at cranking speed (150 rpm)
- The chassis dynamometer results overall showed a 1.7% increase in output horsepower and torque measured at the rear wheels
- These improvements in injector flows, fuel economy and vehicle performance following treatment with Nemco's DFC are consistent with fuel injector deposit reduction

**\*\*\*Treatment Ratios**

Technical Claim: Based on Dynamometer Engine Testing	Marketing Claim	Ratio L/1000L	Test
Prevents buildup of fuel injector coking in IDI engines ('keep clean')	Completely prevents fuel injector deposit build up, keeps older engines completely clean	1	CEC F-23-01 XUD9
Reduces level of injector coking deposits in IDI engines ('clean up')	Reduces level of fuel injector deposits, clean up older engines	1	
Prevents buildup of fuel injector coking in HSDI engines ('keep clean')	Prevents fuel injector deposit build up, keeps latest technology engines clean	1	
Proven injector deposit control performance in mineral- biodiesel fuel blends up to B10	Advanced fuel additive system designed to benefit biodiesel blends	1	CEC F-98-08 DW10
Prevention of power loss due to injector coking in HSDI engine ('keep clean')	Completely prevent deposits, maintains latest technology diesel engines in 'as-new' condition.	1.2	
Complete elimination of existing fuel injector deposits in HSDI engines (full clean up')	Total deposit removal demonstrated, completely restore lost engine power	1.8	
Complete restoration of lost engine power due to injector deposit fouling in HSDI engines	Cleans latest technology engines for optimum emissions performance	1.8	
Prevent and remove internal diesel injector deposits	Prevent and cure poor starting and rough engine running. Prevent fuel injector sticking and failure	1.8	House CRDI test

### \*\*\*Treatment Ratios

Technical Claim: Based on Light Duty Vehicle Road and Dyno Testing ( following 5 tank treatment)	Marketing Claim	Ratio L/1000L	Test
Reduced regulated emissions (FTP / HWFET)	Cleans engines for environmental impact and reduced emissions by up to 78%.	1	VW Jetta on road trial
Restoration of lost engine power up to 2.5%	Improved vehicle operation with constant additive use	1	
Vehicle CO2 emissions reduced up to 3	Cleaner engines for reduced emissions and environmental impact.	1	
Vehicle fuel economy improved up to 3.6%	Cleans engines for improved fuel consumption by up to 3.6%	1	

Technical Claim: Based on Heavy Duty Vehicle Road and Dyno Testing (use following treatment)	Marketing Claim	Ratio L/1000L	Test
Improved fuel injector flow rates indicating deposit reduction	Measured reduction of fuel injector deposits following use of additive	1	2008 Kenworth T800
3.6% improvement in fuel economy following constant	Improved fuel economy through fuel injector deposit reduction	1	
1.7% increase in engine power and torque on chassis dyno	Improved power and torque resulting from injector deposit reduction	1	
At least 4% reduction in fuel consumption	Improved fuel economy through fuel injector deposit reduction	1	Bus Fleet Trial

Technical Claims: Based on Laboratory Testing	Marketing Claim	Ratio L/1000L	Test
Improvement of diesel fuel lubricity using pump rig test	Contains anti-wear additive for high pressure fuel pump protection	1.2	Bosch Pump Test Rig
Demonstration of improved fuel lubricity using HFRR test	Contains anti-wear additive for high pressure fuel pump protection	1.2	HFRR CEC F-06-A-96
Prevention of steel corrosion tendency	Prevention of corrosion within fuel injection system	1	ASTM D665A
Improves diesel fuel cetane number by typical 3.0-5.0units	Improves combustion for improved cold starting and reduced emissions	1	ASTM D613