

HOW TO AVOID DEF MIS-FILLING

As the EPA's 2010 engine emissions standard approaches, the last thing truckers and fleet owners need is more confusion and potential maintenance costs

When the Environmental Protection Agency (EPA) set its 2010 emissions standards for heavy-duty diesel engines, several things needed to occur in order for the trucking industry to be prepared to meet this new regulation that goes into effect on Jan. 1, 2010. First and foremost, the engine manufacturers needed to look at the technologies available, integrate and test that new technology, and then educate the industry on why their engines will not only meet the 2010 standard, but also provide fleets and drivers with improved performance.

Leading up to the deadline, the majority of engine manufacturers have put their trust in Selective Catalytic Reduction (SCR), an advanced emission-control technology that can help light-, medium-, and heavy-duty diesel vehicles meet the EPA's stringent regulations on nitrogen oxides (NOx) emissions. In an SCR system, a liquid reducing agent composed of urea and water—known as Diesel Exhaust Fluid (DEF)—is sprayed directly into the exhaust stream to chemically neutralize about 90% of harmful NOx emissions.

SCR is currently being used with heavy-duty highway vehicles throughout Europe, where it enables trucks to meet the Euro 4 and Euro 5 emissions regulations. In Europe, the DEF is marketed as AdBlue.

Diesel Exhaust Fluid (DEF) and Mis-Filling Concerns

One of the primary components in the SCR solution is DEF, an organic, non-toxic compound made of 32.5% urea and 67.5% de-ionized water. Urea is a nitrogen-containing compound that transforms into ammonia when heated. It occurs naturally or is synthesized from natural gas and is used in various industries, including as a fertilizer in agriculture.

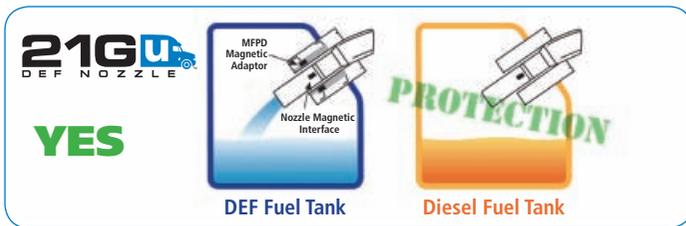
DEF is carried onboard a truck in a separate tank that must be refilled periodically. The frequency of fill-ups depends on the miles traveled. As an example, if a truck averages 120,000 annual miles and gets roughly 6 miles per gallon, the driver will end up purchasing 20,000 gallons of diesel per year. Experts in the industry estimate DEF usage rate to be around 2% of fuel consumption, meaning the truck driver in this example would use 400 gallons of DEF per year and need to fill up his DEF tank about 20 times per year (with a 20-gallon tank).

DEF will be available through most dealers, distributors and major truck stops. It will be packaged many ways including:

2.5-gallon jugs, 275-gallon IBC, and bulk storage at truck stops and fleet locations. As the demand for DEF grows throughout the industry, so too will the need for more frequent purchases at the truckstops. In July, Pilot Travel Centers announced that it would install “at the pump” DEF dispensers at 100 of its 350 total locations. Other truckstop/travel center chains will likely add DEF dispensers as well. As the DEF dispenser infrastructure grows, so too will the issue of the possible mis-filling of DEF into a truck's diesel fuel tank.

“By using different nozzle sizes, EPA has ensured that diesel will not wind up in the DEF tank; however, they've not done anything to address the problems that will arise if DEF is mistakenly put in the diesel tank,” said Rich Moskowitz, Vice President and Regulatory Affairs Counsel, American Trucking Association, Arlington, VA. “If you





WITH the OPW 21Gu nozzle and Mis-Filling Prevention Device (MFPD) your investment is safe.



WITHOUT the OPW 21Gu nozzle and Mis-Filling Prevention Device (MFPD) your investment is at risk.

do (mistakenly put DEF in a diesel tank), the fuel/water separator will probably handle a quart or two, but if you don't catch it and you put in more than that, you could cause some serious and expensive engine repairs."

Randy Reif has been trucking since 1978 and believes that mis-filling DEF into a diesel tank could be a serious problem. "Absolutely, with the truck drivers that are on the road now, there will be a lot of first timers that could easily mis-fill their rigs," said Reif, owner of Overdrive Trucking, Inc., Huber Heights, OH. "There are people everyday that accidentally put gasoline into diesel tanks, so I can see a similar problem with this. Especially the new drivers...they were flipping hamburgers 6 weeks ago and now they're out on the road."

In addition to the maintenance cost incurred by the drivers and fleet companies, there are additional environmental concerns if a mis-filling does take place.

"If that happens, you have two problems. For one, you have a contaminated product that you have to dispose of as a HAZMAT material. The charge for disposing that is going to be hefty. Pumping the tank out would only take a little time, but the larger problem is paying someone to dispose of the HAZMAT material," said Dave Fast, Vice President of Maintenance and Fleet Manager for Dayton Freight Lines, Inc., Dayton, OH.

Proven Solution

OPW Fueling Components, Cincinnati, OH, recently debuted its DEF nozzle technology that provides the trucking and fueling industries with a cost-effective solution against the risks of DEF mis-filling. The OPW DEF nozzle solution—which includes the 21Gu DEF nozzle and Mis-Filling Prevention Device—is a proven

technology that has been standardized by the European trucking and fueling industries. OPW recently partnered with Hamburg, Germany-based ELAFLEX, to bring Europe's proven solution to the United States.

The OPW solution is a fail-safe way to alleviate any mis-filling concerns by truckers and fleet owners. The 21Gu Mis-Filling Prevention Device (MFPD) is inserted into the fill pipe of the DEF tank onboard a truck. If a driver inadvertently tries to fill their diesel tank with DEF, the 21Gu nozzle will not open. After noticing that nothing is being dispensed, the driver will realize the error and fill DEF into the DEF tank. The 21Gu nozzle includes a magnetic device that, when inserted into a MFPD, activates and allows product to flow freely.

"Volvo has always fully supported the OPW magnetic interlock technology. All of our EPA '10 trucks for North America will have the OPW magnetic interlock standard on all the trucks we manufacture," said Ed Saxman, Product Manager for Volvo Trucks North America, Greensboro, NC. "We would encourage the commercial retailers to use nozzles for the DEF that have the interlock on the nozzle. You solve all the potential problems if we can get the commercial retailers and the large truckstops to each use the interlock on the nozzle that OPW has."



The 21Gu Mis-Filling Prevention Device (MFPD) offers an affordable insurance policy to protect your investment.

Several in the industry are interested in standardizing on the magnetic interlock nozzle/adaptor solution. By standardizing on this technology, the drivers and fleet owners will avoid any mis-filling issues. However, the process of standardization is not that easy.

"One of the biggest battles in the trucking industry is getting all the OEMs on board to standardize anything," said Dave Fast. In addition to being Vice President of Maintenance and Fleet Manager for Dayton Freight Lines, Inc., Fast is also a member of the Truck Maintenance Counsel with the American Trucking Association. "We're always looking at making improvements and improving standards. But you wouldn't believe the amount of flak we get from manufacturers. That's always a hassle. But if you make one standard tank and nozzle system across the board, that would alleviate a lot of problems."

"We're prepared for the industry to standardize on this type of technology. There's nothing more that we need to do, but for it to work we need the truckstops on board," said Saxman for Volvo Trucks North America.



For more information on OPW's 21Gu Nozzle and Mis-Filling Prevention Device solution for the trucking and fueling industries, please go to www.opw21Gu.com.

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