

# Lab Q&A

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**Q**uestion: What is DEF?

**A**nswer: Diesel Exhaust Fluid (DEF) is a nontoxic, urea-based chemical reactant necessary for the functionality of Selective Catalytic Reduction (SCR) systems, which reduce oxides of nitrogen (NO<sub>x</sub>) emissions. Most major engine manufacturers are using SCR systems to meet 2010 emission regulations

Here's how it works: DEF is injected into the hot exhaust upstream of the SCR catalyst where it vaporizes to form ammonia and carbon dioxide. The ammonia converts the NO<sub>x</sub> to harmless nitrogen gas and water. The results are a significant reduction in diesel exhaust emissions.

SCR consumes DEF at a rate equal to about two percent of diesel fuel used; and its price is comparable to a gallon of diesel fuel. The addition of SCR equipment and DEF will add 200-400 pounds to the weight of the vehicle, but the greatest benefit of a SCR system is a 3-5 percent increase in fuel efficiency.

For more information on SCR systems and DEF, check out this Cummins Filtration FAQ: [http://www.cummins-filtration.com/pdfs/product\\_lit/americas\\_brochures/MB10033.pdf](http://www.cummins-filtration.com/pdfs/product_lit/americas_brochures/MB10033.pdf) 📄