



BLUEMAX

DEF

DIESEL EXHAUST FLUID

MAXIMUM PURITY • MAXIMUM PERFORMANCE

WHAT IS DIESEL EXHAUST FLUID (DEF)?

Diesel exhaust fluid (DEF) is a urea-based solution that reduces harmful nitrogen oxide emissions from diesel engines. DEF is composed of 32.5% high-purity urea and 67.5% deionised water. DEF is clear, odorless and safe to handle.

The solution is added to separate storage tank in diesel-powered vehicles equipped with selective catalytic reduction (SCR) technology. The fluid is injected into the hot exhaust stream of the vehicle and helps break down the nitrogen oxide gases in the exhaust into nitrogen gas and water vapour, both harmless to the environment.

WHY USE DEF?

It is an inexpensive and efficient option for lowering NOx emission. Nitrogen oxide (NOx) is produced from the exhaust of diesel vehicles and is a major contributor to smog and other air pollution. Exposure to NOx can also lead to respiratory and heart diseases. This is why in 2010, the U.S. Environment Protection Agency (EPA) mandated that all new diesel engine vehicles reduce NOx emission levels by 90%.

It improves engine performance and fuel efficiency. The combination of DEF and SCR technology not only reduces NOx emissions, it actually improves a vehicle's horsepower by making diesel engines run more efficiently, resulting in fuel savings of up to 8%.

It is easy to use. Any diesel vehicle with SCR technology can use DEF. There are no special filters or absorbers required. The driver simply fills their DEF tank periodically and the SCR technology handles the rest. A gallon of diesel exhaust fluid costs about the same as a gallon of diesel fuel, but will generally last about 300-500 miles. And since the EPA regulations came into effect, SCR technology is quickly becoming the industry-standard on new diesel vehicles.

It is widely available. Many truck stops now offer diesel exhaust fluid that can be pumped directly into the DEF tank. It can also be bought in easy-to handle 2.5 gallon containers at auto stores, gas stations and other retailers. And fleet owners can purchase DEF in bulk storage with custom dispensing solution.



The Importance of Calculating DEF Consumption

Many truck operators have engines with exhausts with selective catalytic reduction after-treatment systems and have claimed their fuel use is as good or close to what the manufacturers claim. You must also factor in the diesel exhaust fluid that's used in the process. Injecting DEF into your exhaust helps to neutralize nitrogen and oxides, or better known as NOx. This is the action from the SCR which is used by many diesel manufacturers. DEF, much like fuel, is used every day, and for all intents and purposes, should be accounted for in claims or economic reports. Your best bet is using a DEF usage calculator.

DEF Consumption

The thing to figure out is how much DEF are you using. Manufacturers using SCR in over road operations suggest a rate of around 3%, which roughly equals out to about 3 gallons for every 100 gallons of fuel. Some long-haul carriers have seen a 10% improvement in fuel consumption when running identical routes. This is comparing SCR units to older models. There have also been some disappointing reports, claiming poorer fuel economy. The expert opinion is that performance comes down to factors such as road, route, and service. It's recommended that drivers refill DEF at least once in every third time they refill their tanks.

Climate Consideration

One of the challenges facing truck stops is what to do in colder climates. Having a DEF dispenser in an area with low temperatures is an issue because DEF becomes slush at 28 degrees and will freeze at 11 degrees. This is a factor that must be considered in your overall DEF use, depending on your route. However, there are storage solutions available for both large and small-scale fleets, commercial locations, and retail facilities. Insulated bulk storage containers can help install contaminant-free DEF in extreme weather conditions. The containers ensure the approximate shelf life of DEF does not get hindered.

Cost-Effectiveness

With the cost of DEF slowly coming down from where it was when it first hit the market, it's also becoming more attractive. This doesn't mean that DEF's price isn't all over the place, depending on your geographic area and retailer. When and if DEF becomes the same price as diesel fuel, the urea injection economics will merely be about subtracting DEF cost from the truck's fuel improvement.

**APPROVED FOR USE IN
ALL DIESEL SER SYSTEMS**



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Blue Max DEF 32.5

Our diesel exhaust fluid, Blue Max DEF 32.5, is produced from 32.5% high purity synthetic urea, and 67.5% deionized water. It is colorless, nonflammable, and nontoxic. Manufactured for use in trucks, passenger vehicles, construction, and agricultural equipment, it prevents SCR breakdown, improves fuel efficiency, and cuts nitrogen oxide emissions. Full product information is included on the 32.5% Product Data Sheet, along with additional information regarding water solubility, the evaporation rate, and ISO compliance specifications.

Safety data information is essential for any chemical substance, and we provide the 32.5% Safety Data Sheet for our customers to identify hazards, health and safety precautions, and compatibility properties.



Blue Max DEF 40

Manufactured for rail and marine engines, Blue Max 40 is 40% high-grade urea solution used to control emissions in compliance with North American industry standards and environmental laws. You'll find specific details about Blue Max 40 on the 40% Product Data Sheet, including storage and handling information, shipping container information, and physical and chemical properties

High-grade urea is essential in the production of DEF, but it is also safe to use for wastewater treatment and power generation. The 40% Safety Data Sheet offers hazard and precautionary warnings for health and safety of those handling the product, as well as firefighting measures, product handling during an accidental release, first aid procedures, and other pertinent and necessary safety information.

DEF Specifications

PARAMETER	VALUE	UNIT
Urea	32.5 + 0.7	weight %
Density (@77° F)	9.05 - 9.09	lbs/gals
Refractive Index (@77° F)	1.2814 - 1.3843	
Alkalinity as NH ₃	<0.1	weight %
Biuret	<0.3	weight %
Aldehyde	<5	mg/kg
Insolubles	<20	mg/kg
Phosphate (PO ₄)	<0.5	mg/kg
Calcium	<0.5	mg/kg
Iron	<0.5	mg/kg
Copper	<0.2	mg/kg
Zinc	<0.2	mg/kg

Packaging

One size does not fit all. That's especially true for diesel exhaust fluid transfer tanks and diesel exhaust fluid storage tanks. The simple fact is that there's no such thing as DEF packaging that will meet every need all of the time. Luckily, a DEF calculator is a great way to determine your company's requirements. Diesel exhaust fluid packaging should always be adapted to your demands, so that you aren't wasting space, money or time on wasted investments or materials. Not only does this impact profits, but your employees will also be much happier if they have packaging and storage solutions that actually work for their daily usage.

Distribution

Blue Max DEF, the right choice for clean air, has distributors conveniently located throughout the United States.

We understand that being a responsible business is about more than the bottom line. We only have one planet, so we all have a responsibility to do our part to sustain it. That's why we take extra steps to produce minimal waste and to make sure our products are recyclable. We do what we can because every little bit helps.

You need to be able to obtain product when you need it. Our extensive distribution network throughout the US means we can provide a steady supply of DEF. If you need diesel exhaust fluid, contact us and learn why Blue Max DEF is the clear choice for clean air.

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MOTOR STAR

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