

Diesel Exhaust Fluid FAQs



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What is DEF (Diesel Exhaust Fluid) and why is it used?

DEF is a non-toxic, colorless, and odorless fluid composed of 32.5% high-purity urea and 67.5% deionized water. It's used in diesel engines equipped with Selective Catalytic Reduction (SCR) technology to reduce harmful nitrogen oxide (NOx) emissions into harmless nitrogen and water vapor.

Is DEF hazardous or regulated?

DEF is generally considered non-hazardous and is not DOT regulated for transportation. However, specific local regulations for containment or storage may vary by state, county, or city.

Important Precaution: Before you begin any troubleshooting or cleaning, ensure you are wearing appropriate Personal Protective Equipment (PPE), including gloves and eye protection. DEF is a urea solution and, while not highly toxic, can cause skin and eye irritation.

Can I use my existing chemical or fertilizer pump for DEF?

No. DEF is an ultra-clean fluid that must remain free from contamination to prevent malfunction of the Selective Catalytic Reduction (SCR) systems of vehicles. Using pumps or containers previously used for other chemicals can introduce residues that will contaminate the DEF and potentially damage the SCR systems of vehicles. Use of a closed DEF storage and dispensing system like the GPI DEF Pump System is recommended to maintain product purity.

What happens if I accidentally put DEF in my diesel tank or diesel in my DEF tank?

DEF in Diesel Tank: This is a serious issue. DEF is corrosive to many metals and will rapidly damage fuel system components (pumps, injectors) if it enters the fuel system. The engine will likely stop running very quickly, requiring extensive and costly repairs.

Diesel in DEF Tank: This will contaminate the DEF, rendering it ineffective for the SCR system. It can also cause damage to DEF system components of vehicles and lead to engine derating or shutdown due to emissions non-compliance.

What are common issues or problems with DEF pumping systems?

- **DEF Contamination:** The most frequent problem, often caused by using non-dedicated equipment, poor storage, or exposure to dirt/other fluids. Contamination can lead to crystallization, clogging, and malfunction of vehicle SCR systems. Use of a closed DEF storage and dispensing system like the GPI DEF Pump System is recommended to maintain product purity.
- **Crystallization:** DEF can crystallize if exposed to air or if the dispensing system isn't properly maintained. Crystals clogging DEF equipment can be dissolved with deionized or distilled water.
- **Freezing Issues:** DEF freezes at 12°F (-11°C). While freezing and thawing don't degrade the product, freezing can prevent DEF flow until it thaws. Freezing may also damage the transfer pump and accessories.

How should DEF be stored to maintain its quality?

- **Dedicated, Sealed Containers:** Use only containers specifically designed for DEF, made of non-reactive materials (like HDPE plastic or stainless steel). Keep them sealed to prevent contamination.
- **Cleanliness:** Maintain a clean dispensing area and always use dedicated, clean dispensing equipment.
- **Temperature Control:** Store DEF between 12°F (-11°C) and 86°F (30°C).
- **Avoid Direct Sunlight:** UV light can degrade DEF.
- **Shelf Life:** DEF typically has a shelf life of 1-2 years under ideal storage conditions. Check the manufacturing date and manufacturers storage recommendations.