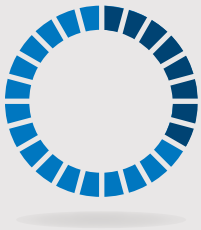
HANDLING DIESEL EXHAUST FLUID

The Basics of DEF



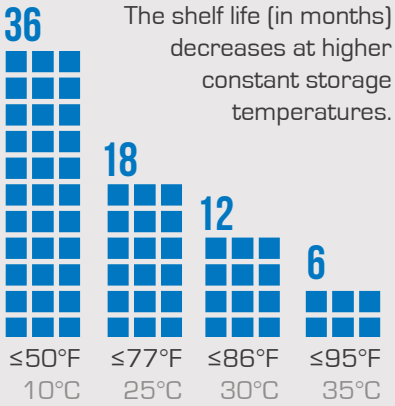
DEF is
32.5%
highly pure
synthetic urea and
67.5%
de-ionized water.

DEF IS NOT DANGEROUS

The colorless fluid is not toxic, hazardous, or flammable. If a small amount should happen to be spilled, it can be rinsed with water or wiped up.

12°F [-11°C]

When DEF is at or below this temperature for prolonged periods, it will freeze. Freezing doesn't hurt DEF, but it does expand when frozen. This can cause a fully filled, closed container to burst.



The shelf life (in months) decreases at higher constant storage temperatures.

DEF Contamination

Manufacturers of high horsepower diesel engines, specifically those in the 174-750hp range, are using Selective Catalytic Reduction (SCR) systems to meet emissions regulations.

SCR technology involves a process where DEF is injected into the engine exhaust. This produces a chemical reaction with nitrogen oxides, converting them to water and nitrogen before releasing them through the equipment's tailpipe.

In order for the SCR system to function effectively, it is imperative that the quality of the fluid is maintained. DEF is sensitive to chemical impurities. Even a small concentration of trace elements which would otherwise be harmless in fuels and other fluids can contaminate an entire tank of DEF.

Contaminated DEF poses some risk to your operation. A system using contaminated DEF will consume more for the fluid and be less effective at reducing emissions from the exhaust.

Over time, this can damage the catalyst in the SCR system, causing the engine to shut down and leaving your team idle in the field. It may damage your machinery too, and a manufacturer could opt to void the warranty if damage is tied back to contaminated DEF.

Maintaining Purity

Because DEF is so easily contaminated and purity is so crucial in the SCR process, the International Organization for Standardization has developed the ISO 22241 Standard for how DEF is manufactured as well as how it should be handled. Here's what you need to know to prevent contamination in off-road environments.

STEP 1
Make sure your fluid is made in accordance with the ISO Standard by looking for the API Diesel Exhaust Fluid Certification Mark.

STEP 2
Use a container made for DEF. It should be constructed with materials approved in the ISO Standard, and rinsed and sealed properly.

STEP 3
Maintain a clean, closed fluid path. The standard does allow for open systems, but they must be cleaned between each use. This isn't practical in off-road environments, so closed loop systems are best here.

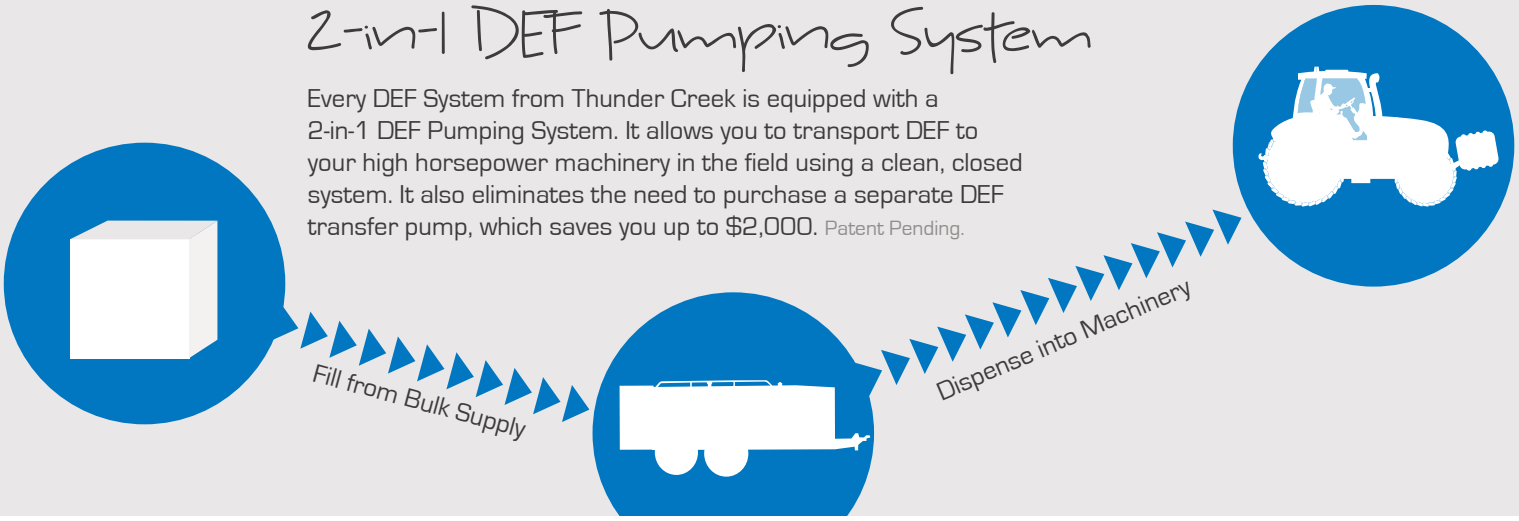
STEP 4
Keep your workspace clean. Dirt and debris near the DEF fill port can also lead to contamination.

DEF DELIVERY SOLUTIONS

INDUSTRY-LEADING
THUNDER CREEK EQUIPMENT

2-in-1 DEF Pumping System

Every DEF System from Thunder Creek is equipped with a 2-in-1 DEF Pumping System. It allows you to transport DEF to your high horsepower machinery in the field using a clean, closed system. It also eliminates the need to purchase a separate DEF transfer pump, which saves you up to $2,000. Patent Pending.



DEF DELIVERY BY THUNDER CREEK

Each is built in accordance with the ISO 22241 Standard and features Thunder Creek's patent-pending 2-in-1 DEF Pumping System to ensure DEF reaches your off-road machinery free from contamination.

DEF Systems for Fuel + Service Trailers

Available on Double Wall Fuel Trailers and Service & Lube Trailers.

100 GALLON
Heater Available

330 GALLON
Heater Available

Bulk DEF Trailers

Available with a self-contained tank and toolbox heating system.

500 GALLON
Heater Available

990 GALLON
Heater Available

DEF Transport Tote

Fits in any standard truck bed.

50 GALLON
Heater Available

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