



# Fuel Profile

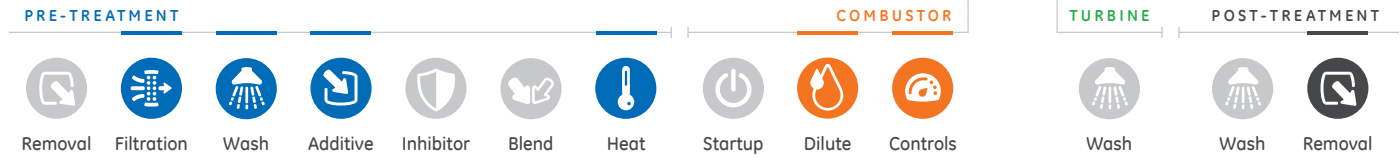
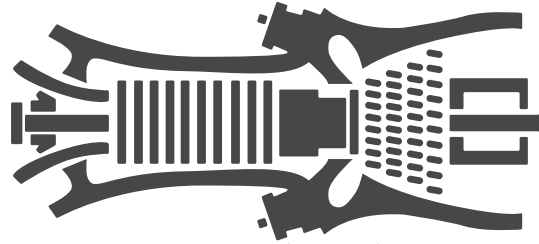
LIQUID

## Distillate Oil #2

DO #2 is a refined liquid fuel oil used for power generation that is also known as 2-GT distillate oil per ASTM D-2800. This fuel has a well-defined distillation curve with little to no contaminants. Also known as light distillate oil #2 or LDO.

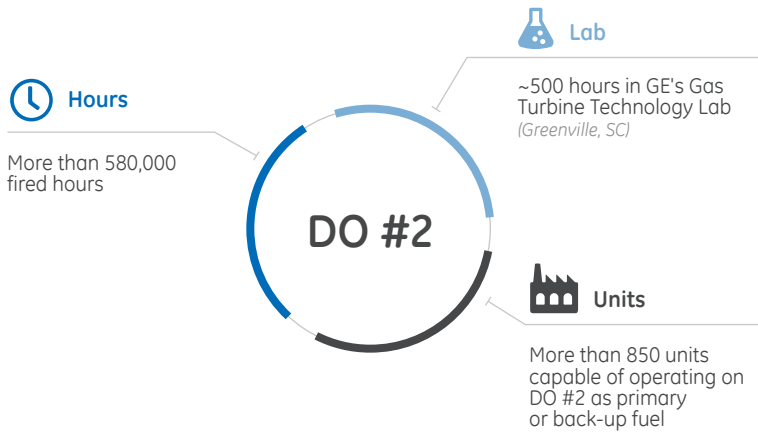
### OPERATING GUIDE

DO #2 should have low levels of water, dirt and trace metals (calcium [Ca], lead [Pb], potassium [K], sodium [Na], and vanadium [V]). However, contamination during transport or storage could allow low levels of sodium and potassium to be present. A detailed fuel analysis is required to determine any specific fuel conditioning processes needed.

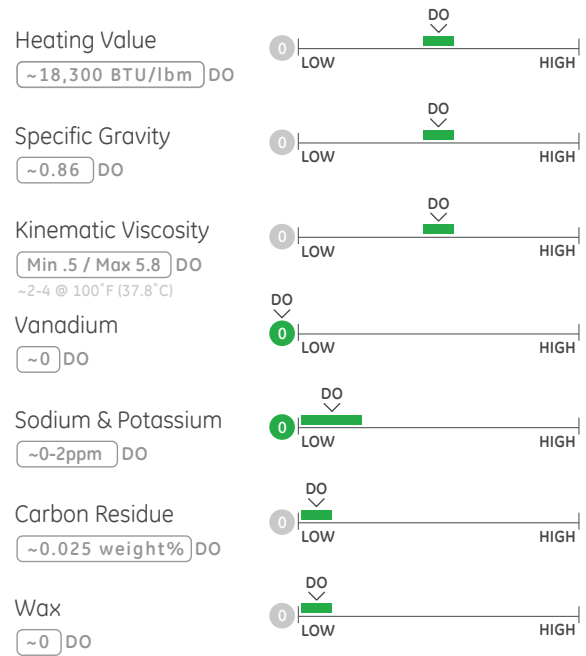


Gray icons indicate processes not required for this fuel

### GE EXPERIENCE



### CHARACTERISTICS



### LOCATIONS AVAILABLE

Available in all locations



### MAINTENANCE FACTOR

DO #2 carries a higher maintenance factor (MF) than natural gas (NG). Follow maintenance recommendations in GER-3620 (GE Heavy-Duty Gas Turbine Operating and Maintenance Considerations). Additional details on recommended liquid fuel system configurations are listed in GEK-116946 (Recommendations for Handling and Treating Liquid Fuels).

### OUTPUT



### HEAT RATE



### EMISSIONS



## POWER PLANT SCOPE IMPACT

- If being used as a back-up fuel with a gas fuel as primary, requires dual fuel combustor
- If using water as diluent, GE recommends using demineralized water as specified in **GER-101944** (Requirements for Water/Steam Purity in Gas Turbines)
- Use of water for diluent requires appropriate infrastructure and accessory system
- If fuel has high sulfur (S) level, review level of inlet filtration to block sodium (Na) from entering the gas turbine

### KEY



PRE-TREATMENT



COMBUSTOR



TURBINE



POST-TREATMENT



#### Filtration

Follow GE fuel filtration recommendations in **GEK-116946** (Recommendations for Handling and Treating Liquid Fuels). In addition, follow GE's recommendations for appropriate liquid fuel tank configurations per **GEK-28163** (Recommendations for Storage of Liquid Fuels).



#### Wash

May be required if level of sodium plus potassium (K) exceeds GE's specification of 1 part per million (ppm) as listed in **GEI-41047** (Heavy-Duty gas Turbine Liquid Fuel Specifications).



#### Additive

In locations with severely cold winters, DO #2 could require pour point depressants, which allow the fuel to be used at temperatures below the normal pour point. The pour point is the temperature at which a liquid fuel will start to freeze (solidify) and lose normal flow characteristics.



#### Heat

If ambient temperatures are below the cold filter plugging point (CFPP) or the pour point of DO #2, heating may be required. For reference, the CFPP for DO #2 is approximately -5 °C (23 °F).



#### Dilute

GE's liquid fuel system requires water or steam injection to meet nitrogen oxide (NO<sub>x</sub>) emissions at or below World Bank NO<sub>x</sub> levels (74ppm). This can be done alone or in conjunction with an selective catalytic reduction (SCR). Water used as a diluent should meet the recommendations specified in **GEK-101944** (Requirements for Water/Steam Purity in Gas Turbines).



#### Controls

Advanced controls are required for rapid switching between primary and back-up fuels, or when needing to control the amount of diluent injected into the combustor.



#### Removal

Use of SCR to reduce NO<sub>x</sub> emissions may be required to meet local and/or national environmental emission regulations. This could be used alone or in conjunction with water or steam injection. A separate catalyst can be added to reduce carbon monoxide (CO) emissions levels as required by environmental regulations.

## TURBINE OPTIONS

