

See the entire line of Biobor® Fuel Additives and available sizes inside...

NGER Microbial Growth in Diesel Fuel and Fuel Lubricity

diesel fuel from...

Microbial Growth:

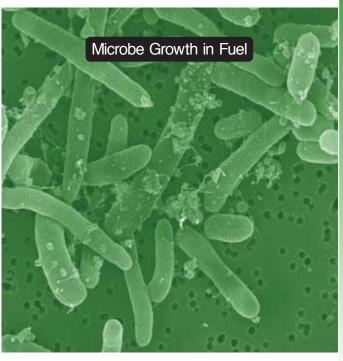
When discussing issues in diesel fuel, microbial growth is widely known as the most common reason for fuel related engine failure. Inherently, diesel fuel and fuel tanks have the tendency to accumulate water whether by tank condensation, entrained water from fuel delivery or just receiving a bad batch of fuel. To compound this issue, today's ULSD can successfully carry much higher concentrations of water providing a breeding ground for HUM Bugs (or Hydrocarbon Utilizing Micro-organisms). Hum-bugs live in the water phase of a fuel tank and feed off of the fuel developing dark, slimy gel-like mats. As these colonies of bacteria and fungi grow (potentially at a rate of doubling every 20 minutes), they can quickly clog fuel filters, plug injectors and lead to excessive sludge accumulation. Additionally, their waste products are one of the leading causes of corrosion in fuel tanks and metal components. With the continued use of Biobor®JF, microbial growth will be eliminated from the fuel system leading to a sterile fuel system, extending the life of fuel filters and preventing corrosion issues.

Lubricity in Ultra-Low Sulfur Diesel:

Since the introduction of ULSD, engine manufactures have recognized and encouraged the need for additional lubrication in today's diesel fuels. Due to the refining process necessary to reduce sulfur levels, the natural lubrication properties of diesel fuel have been greatly reduced. Essential to the protection and life of injection systems and fuel pumps, diesel engine owners are seeing a detrimental effect on these systems. Biobor®JF has been proven to restore these lubricity levels, exceeding ASTM standards and protecting injectors and pumps from premature wear. (ASTM-D6079 HFRR- engine manufacturer and industry standard testing)

Biobor®**JF** has been the worldwide standard for the treatment of microbial growth in diesel fuel since 1965. Originally developed for use in the commercial and military aviation industries, Biobor®JF has continued to provide a tract record of proven reliability and effectiveness in numerous diesel powered industries for over 48 years. To add to this impressive pedigree, **Biobor**®**JF** is the only diesel biocide that is recommended by name by many of the major diesel engine manufacturers across the globe.







growth in diesel fuel. Adds lubricity to ULSD

> **Reduces cylinder** wear by up to

- · Lubricates injectors and pumps
- · Used by militaries-WORLDWIDE
- · Recommended by Major Engine Manufacturers-WORLDWIDE



HFRR - Lubricity Test Results - ASTM D 6079

DIESEL	BIOBOR®JF Added at 135ppm	WEAR SCAR REDUCTION
590	470	120 (20%)



Diesel Biocide and Lubricity Additive

Fuel treated with Biobor®JF will...

 Eliminate microbial growth in the fuel system

- Reduce costly downtime and maintenance
- Dramatically extend fuel filter life
- Provide additional lubrication to injection systems and ULSD
- Increase the reliability and production of your diesel fuel



"All the Fuel...All the Time."

Microbial growth (sludge, slime & algae) is often recognized as the number one cause of engine breakdown and fuel tank contamination. This bacteria and fungi can quickly overtake a fuel system leading to excessive filter changes, costly maintenance and unnecessary downtime. **Biobor**®**JF** is the most widely used diesel biocide and lubricity additive to prevent and kill microbes and ensures reliable fuel and engine operation. Unique to the product, many major diesel engine manufactures themselves recommend the use of **Biobor**®**JF** by name! With consistent use, or fuel delivered and pre-treated with **Biobor**®**JF**, microbial growth is eliminated and fuel filter life will be greatly extended. When your operation relies on diesel fuel, ask for **Biobor**®**JF**.



The Worldwide Standard Biocide and Lubricity Additive SINCE 1965









4oz. Bottle

8oz. Bottle

16oz. Bottle

32oz. Bottle









1gal. Jug

5gal. Pail

55gal. Drum

330 gal. Tote

Part Number	Description	Case Pack	Treat Rate
BB04EZ01US	Biobor®JF 4 oz.	12	4 oz. treats 320 gal.
BB08EZ01US-2	Biobor®JF 8 oz.	12	8 oz. treats 640 gal.
BB16EZ01US-2	Biobor®JF 16 oz.	12	16 oz. treats 1,280 gal.
BB32EZ01US-2	Biobor®JF 32 oz.	6	32 oz. treats 2,560 gal.
BBJUG01US	Biobor®JF 1 gal.	4	1 gal. treats 10,000 gal.
BBPAIL01US	Biobor®JF 5 gal.	ea.	5 gal. treats 46,000 gal.
BBDRUM01US	Biobor®JF 55 gal.	ea.	55 gal. treats 514,000 gal.
BBTOTE01US	Biobor®JF 330 gal.	ea.	330 gal. treats 3,300,000 gal.



COMBATS THE HARMFUL EFFECTS OF ETHANOL IN GASOLINE

- Increases performance and efficiency
- Stabilizes and keeps fuel fresh
- Helps control water and phase separation

Rated "Best Choice" for corrosion protection by...

PRACTICAL SAILOR

MAGAZINE

"Fuel Additives that can Fight Corrosion" —August, 2012



Effective in all gasoline and ethanol blends... E-10 and E-15

Biobor[®]**EB** is a specifically formulated additive for gasoline and ethanol fuel blends which helps combat the negative effects of ethanol in fuel tanks and engines while increasing engine performance, efficiency and fuel stability.





BIRTH

combats the **HARMFULeffects** of ethanol

















32oz. Bottle 1gal. Jug 5gal. Pail 55gal. Drum

Part Number	Description	Case Pack	Treat Rate
BBEB02US	Biobor®EB 2 oz.	24	2 oz. treats 30 gallons
BBEB04EZ01US	Biobor®EB 4 oz.	12	4 oz. treats 60 gallons
BBEB08EZ01US	Biobor®EB 8 oz.	12	8 oz. treats 120 gallons
BBEB16EZ01US	Biobor®EB 16 oz.	12	16 oz. treats 240 gallons
BBEB32EZ01US	Biobor®EB 32 oz.	6	32 oz. treats 480 gallons
BBEBJUG01US	Biobor®EB 1 gal.	4	1 gallon treats 2,000 gallons
BBEBPAIL01US	Biobor®EB 5 gal.	ea.	5 gallons treats 10,000 gallons
BBEBDRUM01US	Biobor®EB 55 gal.	ea.	55 gallons treats 108,000 gallons
BBEBTOTE01US	Biobor®EB 330 gal.	ea.	330 gallons treats 650,000 gallons