

Biobor® JF Microbicide

Product Description Sheet

Biobor® JF eliminates growth of harmful slime producing fungi and algae that clog filters and fuel lines, attacks rubber fuel system components and whose waste products aid in the corrosion of metal surfaces.

How do I know if I have a fungi problem?

Evidence of the problem is usually seen first on the filters, as **slimy**, un-filterable **blobs**, that may be **brown**, **black** or **greenish** in color. The cap may show similar signs, or the fuel may have a sulfur smell. The physical presents of microorganisms is usually made known by the presents of one or more of these damaging characteristics.

Biobor® JF combats fungus and other microbial life in hydrocarbon fuels such as Home Heating, Off-road Diesel, and Jet fuels, but is also effective in light oils and transmission fluid.

It works by eliminating the growth of Hydrocarbon Utilizing Micro-organisms (HUM-bugs) which is the cause of this type of fuel tank contamination, and does not adversely effect fuel performance in any way.

HUM-bugs live in the region of the tank where fuel and water meet. Biobor® JF is very effective due the fact that it mixes with both the water and fuel, there is nowhere for the HUM-bugs to hide. Clinical tests found it simple to use and harmless to a wide variety of fuel system parts, top coatings, sealants, and elastomeric materials.

Biobor® JF has been successfully used by airlines, marine, heavy equipment, stationary engines such as pumps and generators, and railroads. Bulk storage terminals, fuel suppliers, hydrocarbon fuels and oils that are exposed to possible fungal, algae or bacterial contamination can benefit from it's use.

For best results and the proper use of
Biobor® JF:

Drain all water bottoms from the fuel tank. Water bottoms in storage tanks should be kept to a minimum. Good housekeeping is important in proper treatment of fungus / algae problems, but is not the cure.

Biobor® JF is initially used at 220ppm in fuel to effect sterilization, and subsequently at 135ppm to maintain fungus-free fuel system.

Ideally, Biobor® JF should be metered. However, in the absence of metering equipment, it may be manually batch-blended.

When batch-blending, Biobor® JF should be introduced when the tank is half full, and while the tank is being filled. This will ensure faster and more complete dispersion.

Summary of Hazards

Keep of the reach of children and animals. Corrosive. Causes severe eye damage and skin irritation. Do not get in eyes, on skin, or clothing. Wear rubber gloves, goggles or face shield when handling. Harmful of swallowed or absorbed through the skin.



Biobor JF Microbicide combats bacterial growth

Bulleted Highlights

- Control and eliminate the formation and growth of bacteria and microorganisms
- Reduce and eliminate fuel and fuel tank biological contamination
- Maintain clean filters by minimizing filter and fuel line clogging
- Sterilizes the fuel, fuel tank and fuel system to remain free of water-borne bacteria and algae
- Safe for use in all hydrocarbon and Biodiesel fuels

Used by:

Home Owners ▲ Vehicle Owners ▲ Boat Owners ▲ Truck Owners

EPA Approval #652217-1 ▲ On-road and off-road use

Approved by the FAA for use in Aviation Fuel

Biobor[®] JF Microbicide

Technical Data Sheet

DESCRIPTION

Biobor JF is an effective liquid fuel additive that combats fungus and other microbial life in hydrocarbon fuels such as Home heating, Diesel, Jet fuels, and light oils.

With proper use Biobor JF eliminates growth of harmful slime-producing fungi and algae that clog filters and fuel lines, attack rubber fuel system components and whose waste products aid in the corrosion of metal surfaces.

Biobor JF is easy to use and harmless to the wide variety of fuel system parts, top coatings, sealants and elastomeric materials used.

COMPOSITION

Biobor JF is a Microbicide for Hydrocarbon Utilizing Micro-organisms (or, HUM Bugs) specially formulated for Home heating and Jet fuels. It is a Flammable Liquid. It does not adversely affect fuel performance in engines.

PHYSICAL & CHEMICAL PROPERTIES

pH	: Not Applicable
ODOR	: Aromatic
EVAP RATE	: <1 (n-Butyl Alcohol)
FLASH POINT	: 102°F 38.8°C
APPEARANCE	: Yellow, Liquid
BOILING POINT	: 529°F (276.1°C)
SPECIFIC GRAVITY	: 1.05

APPLICATION

Biobor JF is best used with a fuel management plan. There are two levels of addition: (1) a shock dose for contaminated or at risk systems and (2) the maintenance dose for clean, less risky fuel systems. The most reliable way to get Biobor JF into the fuel system is by metered injection; if the use of an injection system is not possible, a batch may be made to pre-dilute the product. Another method is direct addition to the top of the tank. If this method is used, the tank should be half full before the addition to the fuel tank, then continue to Apply while filling the tank. Protect Biobor JF from any water contamination and keep all containers closed from the atmosphere.

BENEFITS

- Reduces filter and fuel line clogging.
- Eliminates the growth of Micro-Organisms
- Reduce fuel and fuel tank contamination.
- Sterilizes fuel enabling it to remain algae free.

AVAILABILITY

Biobor JF is readily available in;
8-oz Bottles packed 12 per case,
16-oz Bottles packed 12 per case,
Quart Bottles packed 6 per case,
Gallon Bottles packed 4 per case,
5-Gallon Pails,
55-Gallon drums.



Biobor JF Microbicide

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Rules & Regulations
 Revision: 10/01/2015 Issued: 01/01/2005 Supersedes: 03/01/2006

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT FORM: Liquid Substance
 TRADE NAME: **Biobor JF Microbicide**
 CHEMICAL NAME: Substituted Dioxaborinanes
 COMPANY: Technol Fuel Conditioners, Inc.
 145 Wyckoff Road
 Eatontown, NJ 07724
 Phone: 1.800.645.4033

EPA REGISTRATION: #652217-1 - Approved for On-Road and Off-Road Fuel Consumption
 EMERGENCY PHONE: Chemtrec: 1.800.424.9300 - within USA and Canada
 Chemtrec: 1.703.527.3887 - outside USA and Canada

SECTION 2. HAZARDS IDENTIFICATION

GHS SIGNAL WORD: **DANGER!**

GHS HAZARD PICTOGRAMS:



GHS CLASSIFICATIONS:

PHYSICAL: H226: Flammable liquid and vapor
 HEALTH: H302: Harmful if swallowed
 H312: Harmful in contact with skin
 H320: Can cause eye irritation
 H336: May cause drowsiness or dizziness
 H373: May cause damage to organs through prolonged or repeated exposure
 ENVIRONMENTAL: H402: Harmful to aquatic life

GHS PRECAUTIONARY STATEMENTS:

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P233: Keep container tightly closed.
 P261: Avoid breathing dust/fumes/gas/mist/vapors/spray [As modified by IV ATP].
 P262: Do not get in eyes, on skin, or on clothing.
 P273: Avoid release into the environment.
 P301+P331: IF SWALLOWED, Do NOT induce vomiting.
 P410+P411: Protect from sunlight. Store at temperatures between 45°F [7.2°C] and 85°F [29.4°C].

SECTION 3. COMPOSITION AND INGREDIENTS INFORMATION

Chemical Name	Hazard Date	% By Weight	CAS Number	SARA 311	SARA 312	SARA 313
Dioxaborinanes	Not Known	95%	8063-89-6	YES	YES	NONE
Naphtha	Not Known	4.5%	8030-30-6	NONE	NONE	NONE
Arsenic	CA Prop 65	Trace (<0.01%)	7440-38-2	YES	YES	NONE
Coneg	CA Prop 65	No Data	No Data	NONE	NONE	NONE



Biobor JF Microbicide

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Rules & Regulations

Revision: 10/01/2015 Issued: 01/01/2005 Supersedes: 03/01/2006

SECTION 4. FIRST AID MEASURES

- INHALATION:** Overexposure can cause dizziness, lack of coordination, and breathing complications, unlikely to occur under normal usage conditions. Handlers should always wear a self-contained breathing apparatus in the positive mode with a full face-piece due to the likelihood of fumes, smoke, and hazardous component decomposition. Remove to fresh air and deploy artificial respiration if not breathing. Get medical attention.
- SKIN CONTACT:** Can cause irritation of exposed skin due to defatting of skin tissue. Handlers should always wear rubber gloves. Wash exposed skin vigorously with general soap and water. Get medical attention if skin irritation persists.
- EYE CONTACT:** Can cause irritation of exposed eye tissue. Handlers should always wear splash-proof goggles. Rinse eyes with cool flowing water for at least 15 minutes and get immediate medical attention.
- INGESTION:** Can cause irritation of the gastrointestinal tract and possible fatal kidney liver damage. **IMMEDIATELY INDUCE VOMITING.** Deploy artificial respiration if not breathing. Get immediate medical attention.

SECTION 5. FIREFIGHTING MEASURES

Special Hazards and Procedures:

This product poses no unusual fire fighting problems. It will burn if involved in a fire. Oxides of sulfur (SO₂) will be given off while burning. Combustion may produce oxides of carbon and oxides of calcium. Water may be used to cool fire-exposed containers and structures but is not a suitable extinguishing media.

Protective Equipment:

As in any fire, firefighters must be equipped to prevent breathing of vapors or products of combustion. Wear an approved self-contained goggled breathing apparatus, protective gloves and clothing.

Extinguishing Media:

Dry chemical, CO₂ and foam are suitable. Water jets or any water-based fluid are not suitable. Closed containers may be cooled with water. Treat large fires as an oil fire. Oil will float on water and can cause fire to spread. Heat from fire can generate flammable vapor.

SECTION 6. ACCIDENTAL RELEASE PRECAUTIONS

- PERSONAL:** Wearing suitable protective equipment, eliminate sources of ignition and open nearby windows to ventilate the problem area.
- ENVIRONMENTAL:** Product has very low solubility in water. Prevent from entering sewer system, surface water or soil.
- FOR SPILL CLEAN-UP:** Shut off leak and dike up large spills. Absorb with an inert material such as sand, soil or vermiculite. Sweep up absorbent and dispose in accordance with regulatory requirements.

SECTION 7. PRODUCT HANDLING & STORAGE

- HANDLING:** This product is best stored in its original container. Steel or HDPE containers are recommended replacements and electrically bond and ground all containers and equipment. Avoid contact with eyes, skin and clothing. Avoid breathing vapors, aerosol and mists. Use with adequate ventilation and wash thoroughly after handling. Never use pressure to empty drums.
- STORAGE:** Full or partially-filled containers should always be kept upright and away from strong oxidizing agents. This product will pump down to 10°F [-12.2°C]. Nonetheless, it is recommended that full or partially-filled containers be stored in a cool dry place between 45° - 85°F [7.2° - 29.4°C]. Store in original container if possible, and keep all chemical containers away from direct sunlight and tightly closed when not in use.



Biobor JF Microbicide

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Rules & Regulations

Revision: 10/01/2015 Issued: 01/01/2005 Supersedes: 03/01/2006

SECTION 8. EXPOSURE CONTROL/PERSONAL PROTECTION

VENTILATION: None normally required. Use additional ventilation if needed to control vapor concentrations particularly if a mist is generated or fumes from hot material are present.

RESPIRATORY: None required if area adequately ventilated. Use appropriate respiratory protection if used in confined areas. If used in an application where a mist may be generated, observe a TWA/PEL of 5 mg/m³ (OSHA, ACGIH) for a mineral oil mist. Use a respirator with dual organic vapor/mist and particulates cartridge if vapor concentration exceeds permissible exposure limit.

SKIN PROTECTION: Use neoprene-type gloves and apron.

EYE PROTECTION: Wear chemical safety goggles or a full-plate face shield. Contact lenses should not be worn.

SECTION 9. PHYSICAL & CHEMICAL PROPERTIES

Appearance:	Yellow Liquid	Odor:	Aromatic Characteristic
Boiling Point:	> 529°F [$> 276^{\circ}\text{C}$]	Density at 25°C (gm/cm ³):	1.05
Vapor Pressure:	> 1 @ 20°C (mm Hg)	Vapor density (Air = 1):	> 1
Solubility in Water:	Moderately Soluble	Solubility in Organic Solvents:	Soluble
pH:	Not Determined	Flash point, COC (ASTM D-93):	102°F
Pounds per Gallon:	8.7	Evaporation Rate:	< 1 (Butyl Alcohol =1)
Freeze Point:	10°F (-12.2°C)	Volatiles By Volume @ 68°F (20°C):	Not Determined

SECTION 10. STABILITY AND REACTIVITY

This product is stable and not subject to hazardous polymerization.

Hazardous Decomposition Products: Oxides of carbon (carbon monoxide and carbon dioxide), oxides of hydrogen (contaminated and hazardous water), and oxides of Nitrogen can occur when exposed to heat at 350°F (176.7°C).

Incompatible materials: Strong oxidizers such as hydrogen peroxide, oxidizing chlorine, and bromine compounds (e.g. chlorine bleach) and chromic acid should be avoided.

Conditions to avoid: Extreme heat and sources of fire or ignition.

SECTION 11. TOXICOLOGICAL INFORMATION

ROUTES OF EXPOSURE: Eye contact, skin contact, inhalation of vapors, and ingestion.

ACUTE TOXICITY: The handling procedures and safety precautions in this SDS should be followed to minimize employee exposure.

CHRONIC EFFECTS: Can cause eye, skin and gastrointestinal irritation. Irritation of tissue, defatting of skin, gastrointestinal irritation, Kidney and Liver damage.

SYMPTOMS: Irritation of exposed tissue and organs, blurriness of vision, dizziness, fainting, and lack of physical coordination.

LD50: Not Established.

NTP/IARC/OSHA: This product and none of its components are listed as a carcinogens, mutagens, or teratogens.

SECTION 12. ECOLOGICAL INFORMATION

No specific aquatic data is available. This product should be kept away from all bodies of water, and prevented from entering sewer streams. It may be necessary to extract soil where large spills have occurred. No specific Bioaccumulation data is available. No specific Terrain Migration data is available.



Biobor JF Microbicide

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Rules & Regulations
Revision: 10/01/2015 Issued: 01/01/2005 Supersedes: 03/01/2006

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: This product should be incinerated as a waste oil, at a certified and registered waste disposal site, in compliance with all federal, state and local regulations and requirements.

RCRA STATUS OF UNUSED PRODUCT: Dispose of this product in permitted hazardous wastes sites. Keep this product away lakes, streams, rivers, ponds, sewer systems, and any other body of water.

SECTION 14. TRANSPORTATION INFORMATION

US DOT Classification:



NA 1993 - Not Applicable

Proper Shipping Name: Not Applicable
Shipping Class: Not Applicable
Packing Group: Not Applicable
NMFC Rating: Not Applicable



UN 1993 - Flammable Liquid, NOS (placard required on ground carriers) regardless of container size.

Proper Shipping Name: Flammable Liquid, N.O.S.
NMFC Rating: Class 65 (regardless of package or container size)
Hazard Label: Class 3 (regardless of package or container size)
Packing Group: III (regardless of package or container size)

IMDG Classification:

This product is not known to be a marine pollutant according to the International Marine Dangerous Goods Codes, however it can cause harm to aquatic life.

WHMIS Label: F152

ICAO Classification:

Proper Shipping Name: Flammable Liquid, N.O.S.
Class: 3
UN/NA ID #: UN1993
Packing Group: III

IBC Classification:

Guidance on transporting this product in bulk by ocean freight can be obtained from Annex II of Marpol 73/78 and the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk.

All Transportation Methods:

Keep packages and containers upright and tightly sealed at all time during transportation. Do not expose packages and containers to direct sunlight, extreme heat, or any source of ignition. All product should be transported in their original packaging and containers. Rubber, plastic or other lined containers should not be used.

SECTION 15. REGULATORY INFORMATION

There are no other national and/or regional statutes or information on this product, including OSHA, Department of Transportation, Environmental Protection Agency, Consumer Product Safety Commission, and Right-To-Know Act not previously addressed in this document.

Chemical Name _____

CAS # _____

NJ TS Number _____

None



Biobor JF Microbicide

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Rules & Regulations

Revision: 10/01/2015 Issued: 01/01/2005 Supersedes: 03/01/2006

SECTION 16.

OTHER INFORMATION

This product has not been tested in long term, chronic exposure, therefore, the handling procedures and safety precautions in the SDS should be followed to minimize employee exposure.

Label Information for the United States: CAUTION: May cause skin and eye irritation. Do not swallow. Avoid eye and skin contact. Wash thoroughly after handling. Avoid contact with clothing. Wash clothing before reuse. Keep out of reach of children. Keep containers tightly closed when not in use. Avoid breathing mists or sprays of this product or its solutions.

EMPLOYER RESPONSIBILITY

Employers must ensure that these Material Safety Data Sheets are readily accessible and available to all their employees responsible for the storage, handling, and manipulation of this product. This can be done in many ways, such as organizing all chemicals SDS in freely available binders kept in areas where the chemicals are stored, or on computers the handling employees have access to without the inconvenience of leaving the work or storage area. We strongly recommend the binder method which keeps them available in the event of a power outage or other emergency inhibiting computer use. Employers may want to consider designating two persons (primary and backup) responsible for obtaining and maintaining SDS records. If the employer does not have a particular SDS for a chemical commodity, the employer or responsible designate should contact the chemical manufacturer to obtain one prior to product use.

REFERENCES

OSHA, 29 CR 1910.1200(g) and Appendix D.

United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS), 3rd Revised Edition, United Nations, 2009. These references and other information related to the revised Hazard Communication Standard can be found on OSHA's Hazard Communication Safety and Health Topics web site at: <http://www.osha.gov/dsg/hazcom/index.html>.

DISCLAIMER

This brief provides a general overview of the Material Safety Data Sheet requirements as mandated by the Hazard Communication Standard 29 CFR 1910.1200(g) and Appendix D of 29 CFR 1910.1200. It does not alter or determine compliance responsibilities in the standard or the Occupational Safety and Health Act of 1970. Since interpretations and enforcement policy may change over time, the reader should consult current OSHA interpretations, decisions by the Occupational Safety and Health Review Commission, and the courts for additional guidance on OSHA compliance requirement. Please note that states with OSHA-approved state plans may have additional requirements for chemical safety data sheets, outside of those outlined above. For more information on those standards, please visit: <http://www.osha.gov/dcsp/osp/statestandards.html>.

The information contained in this document has been derived from analysis of published data freely available and supplied components. While the recommendations contained herein are offered in good faith and believed to be accurate and correct as of the date hereof, manufacturer makes no warranty, expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature regarding this data or the results to be obtained from use thereof. In no event will the manufacturer be liable or responsible for damages of any nature whatsoever resulting from the use or reliance upon the information and recommendations.



Biobor JF Microbicide Application Chart

Fuel Type: Standard Lbs./Gal.: Apply OZS For:	Gasoline		Jet A1, JP4		Distillate Fuel		Diesel Fuel		Heavy Fuels		
	6.10		6.84		7.31		7.08		8.31		
	Shock	Maintain	Shock	Maintain	Shock	Maintain	Shock	Maintain	Shock	Maintain	
G A L O N S	20	1	1	1	1	1	1	1	1	1	1
	40	1	1	1	1	2	1	2	1	2	1
	60	2	1	2	1	2	1	2	1	2	1
	80	2	1	2	1	3	1	3	2	3	2
	100	3	2	3	2	3	2	3	2	4	2
	125	4	2	3	2	4	2	4	2	5	3
	150	4	2	4	2	5	2	5	3	5	3
	175	5	3	5	3	6	3	5	3	6	3
	200	5	3	5	3	6	3	6	3	7	4
	225	6	3	6	3	7	3	7	4	8	4
O F	250	7	4	7	4	8	4	8	4	9	5
	275	7	4	7	4	9	4	8	4	10	5
	300	8	4	8	4	9	5	9	5	10	5
	325	8	4	9	5	10	5	10	5	11	6
	350	9	5	9	5	11	5	10	5	12	6
F U E L	375	10	5	10	5	11	6	11	6	13	7
	400	10	5	11	6	12	6	12	6	14	7
	425	11	6	11	6	13	6	13	7	15	8
	450	11	6	12	6	14	7	13	7	15	8
	475	12	6	13	7	14	7	14	7	16	8
T O	500	13	7	13	7	15	7	15	8	17	9
	600	15	8	14	7	18	8	17	9	20	10
	700	18	9	17	9	21	9	20	10	24	12
	800	20	10	20	10	24	11	23	12	27	14
	900	22	11	22	11	27	12	26	13	30	15
D I T I O N	1,000	25	13	25	13	30	14	29	15	34	17
	2,000	49	25	28	14	59	15	57	29	67	34
	3,000	74	37	55	28	88	30	85	43	100	50
	4,000	98	49	83	42	117	44	114	57	133	67
	5,000	122	61	110	55	147	59	142	71	167	84
	6,000	147	74	137	69	176	74	170	85	200	100
	7,000	171	86	165	83	205	88	199	100	233	117
	8,000	196	98	192	96	234	103	227	114	266	133
	9,000	220	110	219	110	264	117	255	128	299	150
	10,000	244	122	247	124	293	132	284	142	333	167

Packaging & Shipping: 12 8oz bottles/case, 6 quart bottles/case, 4 gallons/case, 20 pails/skid, 4 drums/skid, one 275-gallon HDPE tote bin per skid. All containers and skids are non-returnable. Please recycle in accordance with local statutes.