



Technol[®] DJR 3000 S1 **Emulsion Stabilizer[©]**

Product Description Sheet

Technol DJR 3000 S1[©] the ONLY patented high performance oil emulsion stabilizer scientifically formulated to provide a “water-in-oil” emulsion with the optimum water droplet size range for combustion enhancement.

Technol DJR 3000 S1[©] has been specifically developed to provide stable emulsions of water in hard-to-emulsify Residual Fuel Oils.

When used in conjunction with most emulsification equipment, it will effectively improve combustion, clean all boiler heat transfer surfaces, and reduce both particulate and harmful gaseous exhaust emissions.

It produces high quality emulsions in Residual Fuels Oils with typically 10% water content.

Technol DJR 3000 S1[©] is easy to use. It must be used in conjunction with an “emulsifier injection system” at the boiler front, or simply run through a bulk emulsification system to existing fuel storage tanks.

Dispersible in water and completely non-hazardous, Technol DJR 3000 S1[©] will promote long-term emulsion stability and is

ideal for use in equipment burning heavy industrial-grade fuel oils.

Benefits

Technol DJR 3000 S1[©]:

- ◆ Effectively improves combustion
- ◆ Cleans boiler heat transfer surfaces
- ◆ Reduces emissions & soot blowing
- ◆ Provides long-term emulsion stability
- ◆ Reduces atomizing steam
- ◆ Reduces cold-end deposits, corrosion

Usage directions:

Calibrating the appropriate feed or injection system, apply 1 gallon of Technol DJR 3000 S1[©] is for every 6,000 gallons of fuel.

Technol DJR 3000 S1[©] is readily available in 5-gallon pails, 55-gallon drums, bulk tote bins, and tanker, and railcars for bulk applications.

Technol DJR 3000 S1[©] is patented in three countries, including the United States, and Mexico.

For more information, please contact your local Technol distributor representative.



For HFO and Residual Fuel Oils

Bulleled Highlights

- Provides long-term stability of stored residual fuel oil emulsions
- Cleans boiler heat exchanger surfaces
- Reduces emissions and soot-blowing
- Reduces atomizing steam
- Reduces cold-end deposits and corrosion
- Provides strong water emulsion in “hard-to-emulsify” residual fuel oils
- Prevents excessive shear reduction of droplets
- Revolutionary patented technology

Used by or in:

Industrial Utility Companies ▲ Power Plants

Heavy Generators ▲ Industrial Boilers



Technol[®] DJR 3000 S1 **Emulsion Stabilizer[©]**

Technical Data Sheet

DESCRIPTION

Technol DJR 3000 S1[©] is a high performance oil emulsion stabilizer scientifically formulated to provide a stable water-in-oil emulsion with the optimum water droplet size range for combustion enhancement. It is dispersible in water and will promote long term emulsion stability when used with most mechanical emulsification equipment and will provide maximum stability.

BENEFITS

Technol DJR 3000 S1[©]:

- Reduces particulates and carbon buildup
- Allows for the reduction of excess air, smoke and soot blowing
- Provides higher average evaporation rates
- Cleans firesides
- Improves heat transfer
- Reduces thermal NO_x
- Less acid smut
- Reduces cold-end deposits and corrosion
- Reduces atomizing steam and plume opacity

Technol DJR 3000 S1[©] stabilized emulsion fuels provide improved combustion efficiency, controlled deposit formation and reduced maintenance costs while reducing emissions.

COMPOSITION

Technol DJR 3000 S1[©] is a proprietary water-based slurry of surfactant emulsion stabilizers. It is designed to provide stable emulsions in Residual Fuels with up to 10% water content.

PHYSICAL & CHEMICAL PROPERTIES

Technol DJR 3000 S1[©] :

FLASH POINT	: None
APPEARANCE	: Dark-brown Liquid
FREEZE POINT	: +22°F
VISCOSITY @ 80°F	: < 200 SSU
DENSITY, LBS/GAL @ 65°F	: 8.92
SPECIFIC GRAVITY @25°C (77°F)	: 1.07

HANDLING

Technol DJR 3000 S1[©] is stable under normal conditions. Emulsions made with Technol DJR 3000 S1[©] should be stored in mild steel tanks and used with other normal fuel oil handling equipment. Since the prepared emulsions have a long storage life, emulsions can be transferred to other storage sites for later use. Technol DJR 3000 S1[©] itself should be stored only in plastic or lined or stainless steel containers.

APPLICATION & RATIOS

Typical conditioning application is; **1 gallon to 6,000** gallons of Residual Fuel for long term storage. Leaner doses can be used for less stringent storage requirements. Harmful if swallowed. Normal precautions in the handling of industrial chemicals of low toxicity should be exercised. Skin and eye contact should be avoided. Keep this and all other chemical products away from children and animals.

Usage

Technol DJR 3000 S1[©] is to be used only with an emulsifier unit. This product is readily available in 5-gallon pails, 55-gallon drums, bulk totes, tanker, and railcars.



DJR 3000 S1 Emulsion Stabilizer

Safety Data Sheet

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

Revision: 08/05/2015 Issued: 08/01/1992 Supersedes: 10/01/2005

SECTION 1.

PRODUCT AND COMPANY IDENTIFICATION

PRODUCT FORM: Liquid Substance
 TRADE NAME: **Technol DJR 3000 S1 Emulsion Stabilizer**
 CHEMICAL NAME: Water slurry of polymers and surfactant emulsion stabilizers
 COMPANY: Technol Fuel Conditioners, Inc.
 145 Wyckoff Road
 Eatontown, NJ 07724
 Phone: 1.800.645.4033

US PATENT NUMBER: 7,868,048
 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: **WARNING!**

GHS HAZARD PICTOGRAMS:



GHS CLASSIFICATIONS:

PHYSICAL: Non-Hazardous
 HEALTH:
 H303: May be harmful if swallowed
 H313: May be 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: None: Degradable with low toxicity

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: IF SWALLOWED, drink cold water and 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

<u>Chemical Name</u>	<u>Hazard Date</u>	<u>% By Weight</u>	<u>CAS Number</u>	<u>SARA 311</u>	<u>SARA 312</u>	<u>SARA 313</u>
Ethylene Glycol	Not Available	10% - 20%	107-21-1	No	No	No
Busan Biocide	August, 1992	0.1% - 0.2%	13701-59-2	No	No	No



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SECTION 4.

FIRST AID MEASURES

- INHALATION:** Normal handling does not cause or create a hazard. Mists can cause irritation to the upper respiratory tract. 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 and protective clothing. 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. Drink cold water and 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:** Product will not burn. Wearing suitable protective equipment, eliminate sources of ignition and open nearby windows to ventilate the problem area.
- ENVIRONMENTAL:** Product is degradable in water with low toxicity. 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 22°F [-5.6°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.



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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/m ³ (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:	Dark Brown Liquid	Odor:	Mild Characteristic
Boiling Point:	> 230°F	Density at 25°C (gm/cm ³):	1.07 Typical
Vapor Pressure:	As Water (mm Hg@ 100°C)	Vapor Density (Air = 1):	As Water
Solubility in Water:	Complete	Solubility in Organic Solvents:	Soluble
pH:	5 - 8	Flash point, COC (ASTM D-93):	Will Not Burn
Pounds per Gallon:	8.929	Evaporation Rate:	As Water
Freeze Point:	22°F (-5.6°C)	Volatiles By Volume @ 68°F (20°C):	30% - 50%

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, however the product is degradable with low toxicity. It 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.



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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, Combustible Liquid, NOS: Not Applicable.

Proper Shipping Name: Proprietary mixture of patented petroleum derivatives
Shipping Class: 60 (regardless of package or container size)
Packing Group: III (regardless of package or container size)
NMFC Rating: 155250-02
Hazard Rating: Non Hazardous as per 29 CFR 1910.1200, Sub-Part Z.

UN 1993, Flammable Liquid, NOS: Not Applicable.

Proper Shipping Name: Proprietary mixture of patented petroleum derivatives
Shipping Class: 60 (regardless of package or container size)
Packing Group: III (regardless of package or container size)
Hazard Rating: Non Hazardous as per 29 CFR 1910.1200, Sub-Part Z.

IMDG Classification:

This product is not known to be a marine pollutant according to the International Marine Dangerous Goods Codes.

ICAO Classification:

Proper Shipping Name: Proprietary mixture of patented petroleum derivatives
Class: 3
UN/NA ID #: Not Applicable
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.

<u>Chemical Name</u>	<u>CAS #</u>	<u>NJ TS Number</u>
None		



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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>.

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DJR 3000 S1 Emulsion Stabilizer Application Chart

This chart specifies the number of containers or ounces needed for the amount of fuel to be conditioned. Container volumes are maximized in accordance with a 40"x40" skid. To determine ounces needed when container factors are shown, multiply the factor times the Container Ozs.

Container Ozs:	8oz. = 8	Quart = 32	Gal. = 128	Pail = 640	Drum = 6,912	Tote = 35,200
Sizes / Skid Max:				YES 20	YES 216	YES 275
Application:	Initial	Maintain	Initial	Maintain	Initial	Maintain
Ratio:	1: 1000	6,000	1,000	6,000	1,000	6,000
				Pails Needed	Drums Needed	Totes Needed
G	50			0.01 ←	← ←	← ←
A	100			0.02 ←	← ←	← ←
L	200			0.04 ←	← ←	← ←
L	500			0.10 ←	← ←	← ←
O	1,000			0.20 ←	← ←	← ←
N	2,000			0.40 ←	← ←	← ←
S	3,000			0.60 ←	← ←	← ←
	4,000			0.80 ←	← ←	← ←
O	5,000			1 ←	← ←	← ←
F	7,500			2 0.3	← ←	← ←
F	8,000			2 0.3	← ←	← ←
	9,000			2 0.3	← ←	← ←
F	10,000			2 0.3	← ←	← ←
U	12,000			2 0.4	0.2 ←	← ←
E	14,000			3 0.5	0.3 ←	← ←
L	15,000			3 0.5	0.3 ←	← ←
	20,000			4 0.7	0.4 ←	← ←
T	25,000			5 0.8	0.5 ←	← ←
O	45,000			9 1.5	0.8 ←	← ←
	50,000			10 1.7	0.9 ←	← ←
B	75,000			15 2.5	1.4 0.2	0.3 ←
E	80,000			16 2.7	1.5 0.2	0.3 ←
	89,950			18 3.0	1.7 0.3	0.3 ←
C	98,000			20 3.3	1.8 0.3	0.4 ←
O	100,000			20 3.3	1.9 0.3	0.4 ←
N	110,000			→ 3.7	2 0.3	0.4 ←
D	115,000			→ 3.8	2 0.4	0.4 ←
I	119,900			→ 4.0	2 0.4	0.4 ←
T	135,000			→ 4.5	3 0.4	0.5 ←
I	159,500			→ 5.3	3 0.5	0.6 ←
O	200,000			→ 6.7	4 0.6	0.7 ←
N	240,000			→ 8.0	4 0.7	0.9 ←
E	320,000			→ 10.7	6 1.0	1 ←
D	520,000			→ 17.3	10 1.6	2 0.3
	1,000,000			→ →	19 3.1	4 0.6

Packaging & Shipping : 12 8oz bottles/case (where available) 60 cases per skid; 12 quart bottles/case (where available) 40 cases per skid, 4 gallons/case (where available) 40 cases per skid, 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. When seeing the arrow (→) we recomend the next larger size container.