



Technol[®] 453

Year-Round for Diesel Fuel

Product Description Sheet

Technol 453 is a year-round diesel fuel improver engineered to prevent gelled fuel and ice blockages. Cetane is raised for easier cold starts, fuel lubricity and combustion is increased while the entire fuel system is cleaned of sludge. Resulting in more Power and Torque with less fuel related downtime and maintenance costs.

Anti-Gel components that lower the Pour Point by up to 45°F, and the Cold Filter Plug Point (CFPP) is reduced by up to 22°F. This maintains proper fuel flow when it would otherwise gel in unconditioned fuel.

Prevents and Melts ice that cause frozen blockages and downtime. Once ice is melted, any free water within the fuel system or water absorbed by the fuel are prevented from refreezing, this “anti-freezing” action keeps the fuel flowing and the engine running.

Low Sulfur Diesel Fuel mandated by the EPA is good for the environment, but puts at risk the lubrication properties of the fuel. The only source of lubrication for Injectors and the fuel injection pump is the fuel that flows through it. When sulfur and various other components are reduced to produce low sulfur diesel fuel, the results are a substantial reduction in the natural lubricating properties of the fuel itself.

Technol Diesel Conditioners have been tested and the results show an increase in fuel lubricity of 12½% (Ball On Cylinder Lubricity Evaluator - B.O.C.L.E.). This protects and extends component service life, lowering maintenance costs and downtime when compared to the lack of fuel lubricity in low and ultra low sulfur diesel.

Improve the fuel - *Cetane enhancers* raise the Cetane level up to 5 numbers enabling faster fuel ignition, while *Combustion Improvers* provide for a more complete fuel burn, both working together, enable fuel to ignite sooner, burn longer, hotter for a more complete fuel burn. This increases available horsepower, torque, and fuel economy savings while reducing or eliminating soot output and carbon buildup.

Sludge Dispersants break up and dissolve fuel sediment sludge small enough that most pass harmlessly through filters and injectors. This enables your fuel system to operate at peak efficiency with a properly atomized fuel spray. A clean fuel system allows the engine to produce its designed optimum horsepower and torque further increasing economy.

Controls Water by allowing water and fuel to mix, water is then removed from the tank as the fuel is being used. This stops the buildup of water from rusting, corroding and contaminating the fuel system. Once water is removed, ice blockages are no longer a problem, also the environment for algae and bacteria is no longer present. Any water that the fuel can not “absorb” is rejected to the tank bottom for easy removal.

Corrosion Inhibitors with continued use, virtually stop further fuel system corrosion from occurring, preventing costly leaks and spills.

Stabilizes Fuel by keeping the fuel “Fresh”, prevents sludge from forming, maintains fuel system cleanliness with optimum fuel and fuel system efficiency when needed.



Technol[®] 453

Year-Round Diesel Fuel Conditioner

Bulleled Highlights

- Eliminates fuel gelling and prevents ice
- Improves fuel combustion
- Increases available horsepower and torque
- Lowers exhaust emissions and soot output
- Increases Cetane up to 5 numbers
- Increases fuel lubricity up to 12½%
- Disperses and removes sludge
- Cleans tanks, lines, filters, combustion chambers, and valves
- Controls water, inhibits corrosion, and rust
- Stabilizes fuel, preventing further sludge deposits
- Reduces deposits and carbon build-up
- Lowers maintenance costs and downtime

Used By:

Diesel Auto Owners ▲ Diesel Boats ▲ Truck Fleets ▲ Diesel Generators
EPA Approval #1642-0004 for both on-road and off-road use.



Technol[®] 453

Year-Round Diesel Fuel Conditioner

Technical Data Sheet

To Prevent Gelling And Ice

- Apply the recommended amount of **Technol 453** directly to the fuel tank (see application chart)
- If the amount of fuel needed is not known, apply soon after the delivered amount is known. **Technol 453** can be applied after a fuel delivery but mixing will not be as fast. It is best applied before refueling to insure faster mixing and distribution.

Stabilization During Storage

- Double dose the entire fuel tank capacity then top off the tank.
- After the application of **Technol 453** and the refueling is complete, run the engine/s for at least 15 minutes to insure that **Technol 453** conditioned fuel has been run through the entire fuel system.

Application

- **For initial** use apply at the ratio of 16ozs to every 60 gallons of fuel, or 1 gallon to every 500 gallons of fuel.
- **For maintenance**, apply at the ratio of 8ozs to every 60 gallons of fuel, or 1 gallon to every 1000 gallons of fuel.

PHYSICAL & CHEMICAL PROPERTIES

Material is: Liquid
Appearance: Amber Color
Flash point: 135° F Typical
Specific gravity@25°C (77°F): 0.94

Combats Sludge

Sludge detergents and dispersants break-up sludge small enough that most pass harmlessly through your fuel filter and injectors. Any larger particles while being broken down, that enter the fuel pick up are caught by the fuel filter, which is normal engine protection. Your diesel fuel is stabilized, which keeps sludge from fuel degradation from forming.

Increases Power

Cetane is increased by up to 5 numbers allowing combustion to start earlier and the engine to run smoother. Once combustion has started, our combustion enhancers provide for a more complete fuel burn. Both combined with a clean and efficient fuel system results in more available horsepower and torque from the same amount of fuel, leading to overall increased fuel economy.

Combats Algae And Water Buildup

If you have biological contamination you have water in your tank. **Technol 453** allows water and diesel fuel to mix, this emulsion then leaves the tank as the engine calls for fuel. This is how water is removed from your tank. It is then burned during the combustion process and sent out as steam in the exhaust. When the water is gone, the environment required for biological life is also gone.

Corrosion protection

With continued use, Corrosion Inhibitors virtually stop further fuel system corrosion.



453 Year-Round Diesel Fuel Conditioner

Safety Data Sheet

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

Revision: 08/20/2015 Issued: 01/01/1993 Supersedes: 03/01/2006

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT FORM: Liquid Substance
 TRADE NAME: **Technol 453 Year-Round Diesel Fuel Conditioner**
 CHEMICAL NAME: Proprietary mixture of petroleum distillates
 COMPANY: Technol Fuel Conditioners, Inc.
 145 Wyckoff Road
 Eatontown, NJ 07724
 Phone: 1.800.645.4033

EPA REGISTRATION: #1642-0004 - 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: **WARNING!**

GHS HAZARD PICTOGRAMS:



GHS CLASSIFICATIONS:

PHYSICAL: H227: Combustible liquid
 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

<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>
Aromatic Naphtha	Not Available	18% - 32%	64742-94-5	No	No	No
Glycol Ether	August, 1992	6% - 12%	111-76-2	No	No	Yes



453 Year-Round Diesel Fuel Conditioner

Safety Data Sheet

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

Revision: 08/20/2015 Issued: 01/01/1993 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. **DO NOT 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.



453 Year-Round Diesel Fuel Conditioner

Safety Data Sheet

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

Revision: 08/20/2015 Issued: 01/01/1993 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/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:	Amber Liquid	Odor:	Camphor Characteristic
Boiling Point:	< 300°F [$< 148.9^{\circ}\text{C}$]	Density at 25°C (gm/cm ³):	0.90 Typical
Vapor Pressure:	< 1 @ 20°C (mm Hg)	Vapor density (Air = 1):	< 1
Solubility in Water:	Negligible	Solubility in Organic Solvents:	Soluble
pH:	Not Applicable	Flash point, COC (ASTM D-93):	135°F (57.2°C)
Pounds per Gallon:	7.5	Evaporation Rate:	< 1 (Butyl Acetate = 1)
Freeze Point:	10°F (-12.2°C)	Volatiles By Volume @ 68°F (20°C):	Not Applicable

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.



453 Year-Round Diesel Fuel Conditioner Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Rules & Regulations
Revision: 08/20/2015 Issued: 01/01/1993 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, Combustible Liquid, NOS (placard required on ground carriers): not regulated if shipped or transported in containers less than 450 liters (119 Gallons US).

Proper Shipping Name: Proprietary mixture of petroleum derivatives
Shipping Class: 65 (regardless of package or container size)
Packing Group: III (regardless of package or container size)
NMFC Rating: 155250-02



UN 1993, Flammable Liquid, NOS (placard required on ground carriers): If shipped in containers of 450 liters or more (120 Gallons US or more), by air or by sea.

Proper Shipping Name: Petroleum Distillates, NOS
Shipping Class: 65 (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.

ICAO Classification:

Proper Shipping Name: Petroleum Distillates, NOS
Class: 3
UN/NA ID #: NA 1993
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



453 Year-Round Diesel Fuel Conditioner Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Rules & Regulations
Revision: 08/20/2015 Issued: 01/01/1993 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.



453 Year-Round Diesel Fuel Conditioner 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	Initial Maintain	Initial Maintain	Initial Maintain
Ratio:	1: 500 1,000	500 1,000	500 1,000	500 1,000	500 1,000	500 1,000
				<u>Pails Needed</u>	<u>Drums Needed</u>	<u>Totes Needed</u>
	50			0.02 ←	← ←	← ←
G	100			0.04 ←	← ←	← ←
A	200			0.08 ←	← ←	← ←
L	500			0.2 0.1	← ←	← ←
L	1,000			0.4 0.2	← ←	← ←
O	2,000			0.8 0.4	← ←	← ←
N	3,000			1.2 0.6	← ←	← ←
S	4,000			1.6 0.8	← ←	← ←
	5,000			2 1.0	← ←	← ←
O	7,500			3 1.5	0.3 ←	← ←
F	8,000			3 1.6	0.3 ←	← ←
	9,000			4 1.8	0.3 ←	← ←
F	10,000			4 2	0.4 ←	← ←
U	12,000			5 2	0.4 0.2	← ←
E	14,000			6 3	0.5 0.3	← ←
L	15,000			6 3	0.6 0.3	← ←
	20,000			8 4	0.7 0.4	← ←
T	25,000			10 5	0.9 0.5	← ←
O	45,000			18 9	2 1	0.3 ←
	50,000			20 10	2 1	0.4 ←
B	75,000			→ 15	3 1	0.5 0.3
E	80,000			→ 16	3 1	0.6 0.3
	89,950			→ 18	3 2	0.7 0.3
C	98,000			→ 20	4 2	0.7 0.4
O	100,000			→ 20	4 2	0.7 0.4
N	110,000			→ →	4 2	0.8 0.4
D	115,000			→ →	4 2	0.8 0.4
I	119,900			→ →	4 2	0.9 0.4
T	135,000			→ →	5 3	1 0.5
I	159,500			→ →	6 3	1 0.6
O	200,000			→ →	7 4	1 0.7
N	240,000			→ →	9 4	2 0.9
E	320,000			→ →	12 6	2 1
D	520,000			→ →	19 10	4 2
	1,000,000			→ →	37 19	7 4

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 recommend the next larger size container.