FUEL ADDITIVES BASES & COMPETITORS

Comparing Fuel Additives

When comparing fuel additives, there are two elements you have to take into account. 1) their characteristics/your benefit requirements, and 2) the base material. The first is a desired list that based on the need you want fulfilled, however the base material is very important as it can have either a positive or negative affect on your engine and combustion system.

Fuel Additive Characteristic/Benefit Requirements

There are six characteristics/benefits it contains/provides. A complete multifunctional additive should incorporate the first four and then depending on specific need, the 5th or 6th would be included, in addition to #1-4.

1. Detergents
2. Dispersants
3. Lubricants
4. Microbiocide
5. Cetane Improvers
6. Flow improvers: *Cloud Point, Pour Point, and Cold-Filter Plug Point (CFPP)*

The incorporation of the proper amounts of these chemical additives in the base diesel fuels will guarantee optimum performance and dependability at the most economical price.

Fuel Additive Bases – Petroleum, Alcohol, Toluene, and Synthetic & Organic compounds

Fuel additives, like all products can be derived from different base materials. Depending on which base material, it can have different affects or characteristics. These are just a few of the main bases used for creating fuel additives.

1. Petroleum Based

- Similar to the fuel itself, however with small adjustments/improvements and therefore the petroleum based fuel additives have proven to be inefficient in the vast majority of the cases.
- Does not eliminate the effect of water/disperse water. Depending of the base, it may be flamable and difficult to transport. It will ignite at a different temperature than diesel.

2. Alcohol Based

- Isopropanol/alcohol additives will dry the system. For many years, alcohol in the fuel was a non-starter.
- Alcohol will disperse water but will dry out the injection system and damage the injectors. The flash point of these product makes them flamable and difficult to transport them. It will ignite at a different temperature than diesel.

Xp Lab, Inc.
946 Hawthorn St. San Diego, CA 92101
Tel. (619) 233-3111 Fax: (619)233-3112
Xp3@xplab.com http://www.xp3.com

3. Toluene Based

- Toluene is mostly used as a solvent and an additive in gasoline to improve octane ratings.
- Doesn't eliminate/disperse water. It is highly explosive, Toluene is also used to make trinitrotoluene, which is the explosive TNT. The flash point of these product makes them flamable and difficult to transport them. It will ignite at a different temperature than diesel.

4. Synthetic & Organic Compounds Based

- Synthetic organic compounds are manmade (anthropogenic) organic compounds created through industrial synthesis. A substance behaves or reacts based on how it was created, in other words, how the atoms and molecules are formulated. Therefore, synthetic and organic compound based fuel additives can be designed to meet the specific needs of the final user.
- Each developer of fuel additives, creates their formula to meet the specific demands of the consumer and based on the changing needs, hence why not all synthetic fuel additives are the same. Xp3 fuel improvers fall in this category of fuel additives.

(1.) Petroleum base vs (4.) Synthetic & Organic Compound base

- Flexibility of design and specific design purpose is the main difference between the two bases. Unlike the synthetic/organic compounds, the manufacturer of Petroleum Base additives can't create specific formulations to meet **all or specific needs** of the end consumer. However, because the Synthetic/Organic Compound base is synthetic and formulated to meet specific needs, it can meet most if not all the desired needs.

Xp3 Fuel Additives

Our fuel treatments can help reduce fuel consumption, maintain fuel injectors clean, stabilize light and heavy oils, disperse existing water, greatly reduce fumes and emissions, has a detergent and antioxidant effect, work as an effective biocide, improve the pour point, reduce the corrosion problems generated during and after combustion, reduce maintenance costs, prolong the life of the machine, and increase the fuel's lubricity for fuels low (LSD) and ultra-low (ULSD) in sulfur fuels.

Fuel Additives Competitors

The chart below lists the more frequently asked about competitors and competitor's products. Each one will specify the type of fuel additive base being used, what their main material is (with its %) and if it's regulated for transportation as flammable or not. NOTE: Reference the above material on Base Materials to understand the pros/cons of the below.

Brand	Name of Product	Base	Main Material	% Main Material	Transportation Regulation
AMSOIL	Performance Concentrate – Diesel Injector Clean	Petroleum Base	Benzene and Heavy aromatic naphtha	35 - 70%	Flammable Liquid

FPPF	Diesel Fuel Injection Cleaner	Petroleum Base	Mineral Spirit (high flash naphtha)	80 - 90%	Flammable Liquid
Gold Eagle	Stabil Fuel Stability	Petroleum Base	Petroleum distillate	0 - 95%	Not Regulated
Howe's	Diesel Treat	Petroleum Base	Distillates, petroleum, hydrotreated middle	40 - 70%	Not Regulated
Lucas	Lucas Fuel Treatment	Petroleum Base	Hydrocarbon heavy paraffinic	60 - 100%	Not Regulated
Power Service	Diesel Kleen + Cetane Boost	Petroleum Base	Petroleum Distillate	50 - 90%	Flammable Liquid
Schaeffer's	137ND Diesel Treat 2000™ Ultra Low Sulfur	Petroleum Base	Light and Heavy aromatics (Petroleum naphtha)	40 - 90%	Flammable Liquid
SeaFoam	Motor Treatment-Fuel System Treatment	Petroleum Base	Hydrocarbon blend; Isopropanol	<95%	Flammable Liquid
STP	Diesel Fuel Treatment & Injector Cleaner	Petroleum Base	Petroleum Distillate	85 - 95%	Not Regulated
XFT	Fuel Inhibitor & Burn Rate Modifier/Catalyst	Petroleum Base	Homopolymer and Petroleum distillate	Not known	Not Regulated
Xp3	Multi-purpose Diesel Additive	Synthetic & Organic Base	Non Aromatic Alkyne mixture	78 - 92.5%	Not Regulated

Xp Lab, Inc.
946 Hawthorn St. San Diego, CA 92101
Tel. (619) 233-3111 Fax: (619)233-3112
Xp3@xplab.com http://www.xp3.com