

**TOTAL
POWER**

SYNTHETIC FUEL ADDITIVES | FUEL MANAGEMENT SYSTEMS

TOTAL POWER, INC.

PIONEERS OF SYNTHETIC FUEL ADDITIVES

WORLD LEADERS IN SYNTHETIC FUEL ADDITIVES

Total Power provides energy efficiency and management tools to a wide scope of heavy industries. Our TPx Synthetic Fuel Additives have been enhancing fuel throughout the Americas, Europe, Africa and Asia since 1997. Monthly, millions of gallons of fuel are treated with one of our TPx Synthetic Additives in order to prevent greenhouse gas emissions during combustion. Improvements in fuel efficiency and equipment availability for our clients are a few reasons why Total Power's solutions have been widely accepted and successfully integrated. Headquartered in San Diego, CA, Total Power will continue to expand its reach across the globe to all remote and fuel intensive industries.

DEVELOPING INTELLIGENT PRODUCTS

In-House development is led by Marcos Dantus, Ph.D., a high recognized physical chemist. Credited with winning the Nobel Laureate Signature Award, Marcos's detailed understanding of combustion chemistry led to the development of the world's first purpose-built fuel additive. TPx Synthetic Additives are blended into "finished" fuels in order to prevent the formation of greenhouse gases during combustion as well as to eliminate costly parasitic losses common to all industrial fuel systems.

Co-Development of FMx Fuel Management Systems was led by Boris Dantus, VP of Total Power and Greg Ochs of Schneider Electric. Jointly, the two pieced together a scalable, modular, and secure method of managing fuel and lubricant transaction data. FMx provides plant-level automation to remote and exterior facilities.



TPx OUTPERFORMS ALL OTHER FUEL ADDITIVES

Burns Fuel More Efficiently

Cleans While Working

Safe to Use on All Engines

"Total Power, Inc. is committed to driving industrial efficiency and sustainability through technologically advanced engineering."

PRODUCTS



TPx SYNTHETIC FUEL ADDITIVES

Our products can be applied in all major industries requiring **Healthy Fuel** including, but not limited to: defense, rail, on-road transportation, power generation, mining, manufacturing, agriculture, fishing, and maritime.

Our 100% synthetic additives are blends of oxygenating and detergent chemicals specifically designed to enhance fuel burn characteristics and fuel system reliability. Each product is designed to treat challenges specific to each type of fuel in order to reduce harmful emissions, reduce maintenance, and increase fuel efficiency.

Benefits include: Fuel Stabilizer, Cetane Booster, Injector Cleaner

- TPx for gasoline, kerosene and JP-5/8
- TPx HD for diesel, biodiesel blends and F-76
- TPx HDNTek for Bunker C, Marine Fuel Oil and HFO

CERTIFIED ECO-FRIENDLY

Not only are Total Power products smart to use, they are safe to use as well. TPx does not contain alcohols, aromatic, or abrasive substances. Total Power's quality is unsurpassed in the industry.

FMx FUEL MANAGEMENT SYSTEM

FMx is an integrated sensor array that simultaneously manages multiple remote fueling locations and reports real-time system status to maintenance and management personnel of industrial facilities and is dedicated to tracking fuel, lubricant, and additive receipt, storage, transfer, and dispensing. Long-range, wireless ID of system users provides additional layers of detail, data integrity, and fleet management functions. Designed for use in exterior and hazardous locations. FMx is the perfect system to manage your operation's Healthy Fuel.

- Paperless data capture of all transactions
- Autonomous identification of system users
- Prevention of unauthorized fueling
- Multi-tank inventory monitoring
- Customizable reports and alerts based on user needs
- Fully integrated with enterprise software
- Real-time data
- High level data integrity and fault resistance
- POWERED BY SCHNEIDER ELECTRIC

TPx SYNTHETIC FUEL ADDITIVES

OUR ADDITIVES PROVIDE MULTIPLE BENEFITS

IMPROVED EFFICIENCY

TPx has been proven in laboratory and field tests to lower fuel consumption.

Users of fossil fuels face many different problems storing and consuming their fuel. High horsepower engines require large amounts of oxygen to burn the fuel, and the fuel system itself is sensitive to contamination and build-up.

TPx synthetic fuel additives simultaneously integrate dissolved oxygen and detergents to treat a multitude of concerns including fuel stability, microbial growth, water accumulation, and deposit formation. TPx targets parasitic losses in industrial fuel systems. The combination of Healthy Fuel and a healthy fuel system strengthens the integrity and sustainability of any fossil fuel-intensive operation.

REDUCED MAINTENANCE COSTS

TPx's cleaning properties clean injectors, fuel filters and prevent build-up throughout the entire fuel system. By dispersing water, corrosion causing bacteria can't grow, gums and varnishes are eliminated and fuel stays stable. This is critical to lower maintenance costs, keep engines operating with less down time, and reduce the costs of replacement parts.

CLEANER COMBUSTION

TPx aids in combustion and cleans the fuel system. Adding TPx to the fuel will increase reliability, decrease ownership costs and will keep engines operating longer.



SIGNIFICANTLY LOWERS EMISSIONS

Oxygenated fuel burns significantly cleaner. TPx will prolong maintenance intervals. We have verified minimal reductions of:

PM (Hydrocarbons)	40%
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NOx	10%
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CO	40%
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TPx inhibits the transition of SO_2 into SO_3 which reduces formation of H_2SO_4 .

NANOTECHNOLOGY (TPx HDNTEk)

TPx HDNTEk for heavy fuel oil is a unique additive which contains Magnesium Oxide nanoparticles.

TREATS VANADIUM IN INTERNAL COMBUSTION ENGINES

Tailored to deploy in a highly efficient way, non-abrasive MgO nanoparticles stay perfectly dissolved in the fuel to prevent fuel line clogging. Due to their extremely small size (1,000 times smaller than average), they are vastly more effective at targeting metallic elements such as vanadium which causes extremely corrosive scaling.

TPx HDNTEk is the only additive with MgO that works with furnaces and boilers as well as internal combustion engines burning HFO.

TESTED TO BE SAFE FOR ALL ENGINES

We treat millions of gallons of fuel for all types of equipment around the globe. TPx is chemically compatible with US and all international fuel standards. It is used safely on generators, turbines and slow, medium, and high speed engines.

NEARLY TWO DECADES OF SUCCESSFUL PERFORMANCE

A SPECIALIZED PRODUCT FOR ALL FUELS

FEATURES	GASOLINE TPx	DIESEL TPx HD	HEAVY FUELS TPx HDNTek
Safe synthetic formula	✓	✓	✓
Integrates dissolved oxygen into fuel	✓	✓	✓
Completely cleans fuel system	✓	✓	✓
Disperses suspended water in fuel	✓	✓	✓
Stabilizes fuel	✓	✓	✓
Adds lubricity	✓	✓	✓
Lowers pour point	✓	✓	✓
Reduces toxic emissions and particulate matter	✓	✓	✓
Prolongs maintenance intervals	✓	✓	✓
Raises the cetane number		✓	✓
Protects exhaust filter systems including SCR or DPF		✓	✓
MgO Nanotechnology to control corrosion			✓
Reduces ash formation and ash acidity			✓

PHYSICAL PROPERTIES	TPx	TPx HD	TPx HDNTek
Appearance	Clear	Orange	Green
Flash point	65 °C (149 °F)	65 °C (149 °F)	65 °C (149 °F)
Freezing point	-75 °C (-103 °F)	-75 °C (-103 °F)	-75 °C (-103 °F)

SUGGESTED DOSAGE RATIO (1:1,000 TO 1:2,000)

Maximum: One gallon of additive for 1,000 gallons of fuel.

Minimum: One gallon of additive for 2,000 gallons of fuel.

Increased benefits are achieved with stronger concentrations—helpful in high altitude, underground, emission sensitive operations, or when treating dirty fuel.



“After trying dozens of additives, this is the last one I’ll ever have to try. It cleans, it saves fuel, and my maintenance costs have dropped. I don’t need anything more.”

—Director of Mining Maintenance

INDEPENDENT LABORATORY & FIELD TESTS

LABORATORY CHEMICAL ANALYSIS: TPx IS 100% FUEL SYSTEM COMPATIBLE

Testing for TPx HD conducted on ULSD

TEST		UNTREATED	TPx HD 1:2000
Cetane Number	ASTM D613	50.4	50.7
Flash Point	ASTM D93	153 °F (67 °C)	156 °F (69 °C)

RESULTS: TPx HD improves Cetane and Flash Point

TEST	UNTREATED	TPx HD 1:2000	TPx HD 1:1000
Wear Scar (mm) ASTM 6079	.47	.464	.445

RESULTS: TPx HD reduces engine wear and improves durability

VALIDATED FIELD TESTS

Lower emissions are a clear indicator of better engine efficiency.

INDUSTRY	COUNTRY	LOWER CO	LOWER NOx	EQUIPMENT TYPE
Underground Mining	Spain	-35%	-10%	MTU
Open Pit Mining	USA	-56%	-10%	2200HP MTU Detroit Diesel
Open Pit Mining	USA	-33%	-15%	MTU 16V and 20V 4000
Fishing Fleet	Peru	-38%	-20%	Twin Cummins Marine Diesel
Stevedore	USA	-15%	-5.2%	GE 2700HP Locomotive

DYNAMOMETER LAB TEST

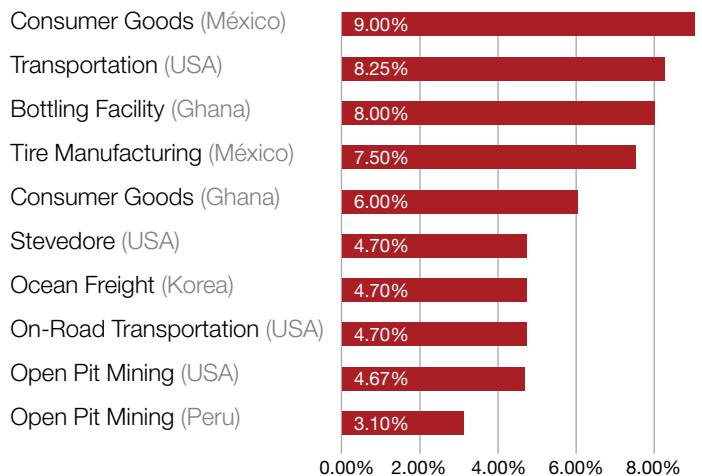
European Drive Cycle
HIMESA (Hidráulica y Mecánica Sallentina, S.L.)
Equipment: Detroit Diesel Series 60

MORE FUEL EFFICIENCY: Fuel usage decreased by an average of 10%

MORE POWER: Power has increased by an average of 3.59%

LOWER EMISSIONS: The hydrocarbons (PM) were reduced by an average of 92%, carbon monoxide (CO) has been reduced by an average of 64.7%

VERIFIED FUEL SAVINGS WITH USE OF TPx



RESULTS: Average 5.96%

ALL CHEMICALS ARE SOURCED:



FMx FUEL MANAGEMENT SYSTEM

A COMPLETE FUEL AND LUBRICANTS MANAGEMENT SYSTEM

SEAMLESSLY MONITOR HIGH-VALUE ASSETS AND CONSUMABLES

WIRELESS INVENTORY CONTROLS

- FMx provides wireless monitoring of fuel, lubricant, and additive use and storage.
- Level, flow, and ISO quality sensors, designed for hazardous environments, capture real-time usage data with high accuracy.
- RFID identification of system users allows for a tight control of pre-authorized users and prevents unauthorized use.
- Paperless data capture removes human error and simplifies reporting, purchasing, and monitoring of critical assets.
- Companies with multiple locations can easily compile data, create customized reports, and monitor all transactions.
- Capable of monitoring fixed and mobile assets.

ACCURATE METERING

FMx includes meters with 99.5% accuracy and repeatability. Level sensors continuously monitor and verify the accuracy of the flow signals for additional precision.

POWERED BY SCHNEIDER ELECTRIC

Schneider is a world leader in system integration and hardware components.



SUPERIOR RFID IDENTIFICATION AND PREVENTION OF UNAUTHORIZED USE

Long-range RFID identification of system users permits detailed accounting of all fuel and lube transactions by wirelessly tying the system user to the transaction. Unauthorized use prevention and safe mounting locations are just a few benefits of long-range RFID.

LEAK DETECTION

Exact monitoring of fuel levels and flow conditions in tanks prevents overfilling accidents or critically low tank levels. Instant detection and alerts of tank leakage improves environmental stewardship and safety.

DAILY, MONTHLY, OR CUSTOMIZED REPORTS FOR OPTIMIZED OPERATIONS

Daily receipt of a complete fuel, lubricant, and additive report in the inbox each morning. Customized reports are at the click of a button. Instantaneous reporting will strengthen condition-based decision making to empower purchasing departments to restructure their supply contracts and allow maintenance supervisors to fine tune equipment maintenance based on needs rather than time.

FMx is FULLY INTEGRATED with enterprise software.

DATA SECURITY AND FAULT RESISTANCE

FMx is designed with a high level of data security and redundancy. As data is collected at each site, it is stored by each sensor until the local host panel confirms data receipt. Data is transmitted to the local server, then to a cloud server so there are always two mirrored copies of the data. Each transfer requires multiple “handshakes” to confirm a secure data tunnel.

Data back-fill technology means your data is never lost. If connectivity is disrupted at any time or for any reason, each site acts autonomously in order to keep capturing data, and when able to, will back-fill all the data that was not transmitted.



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