

# Premier Chemicals Nano Fuel Catalyst

Next Generation Fuel Solutions

# Premier Chemicals Limited

- Premier Chemicals are a UK based company specializing in gas purification and environmental technologies.
- Experts in Gas Purification, Catalysis and Nano Materials
- Fuel Technology is a nanotechnology Heterogeneous fuel catalyst used to treat liquid hydrocarbon fuels.
- The Fuel Technologies numerous benefits have been extensively proven through field trials, cast studies, testing and usage.

## The Product

A patented Nanotechnology in liquid form manufactured at source. This is then added at precise ratios to a delivery agent such as naphtha, white oil or ethanol, forming the catalyst ready for use.

The Catalyst is then added to the chosen hydrocarbon fuel at a ratio of 1:640 ltrs

Fuel is treated locally to our customers, reducing shipping and insurance costs.

## How it works

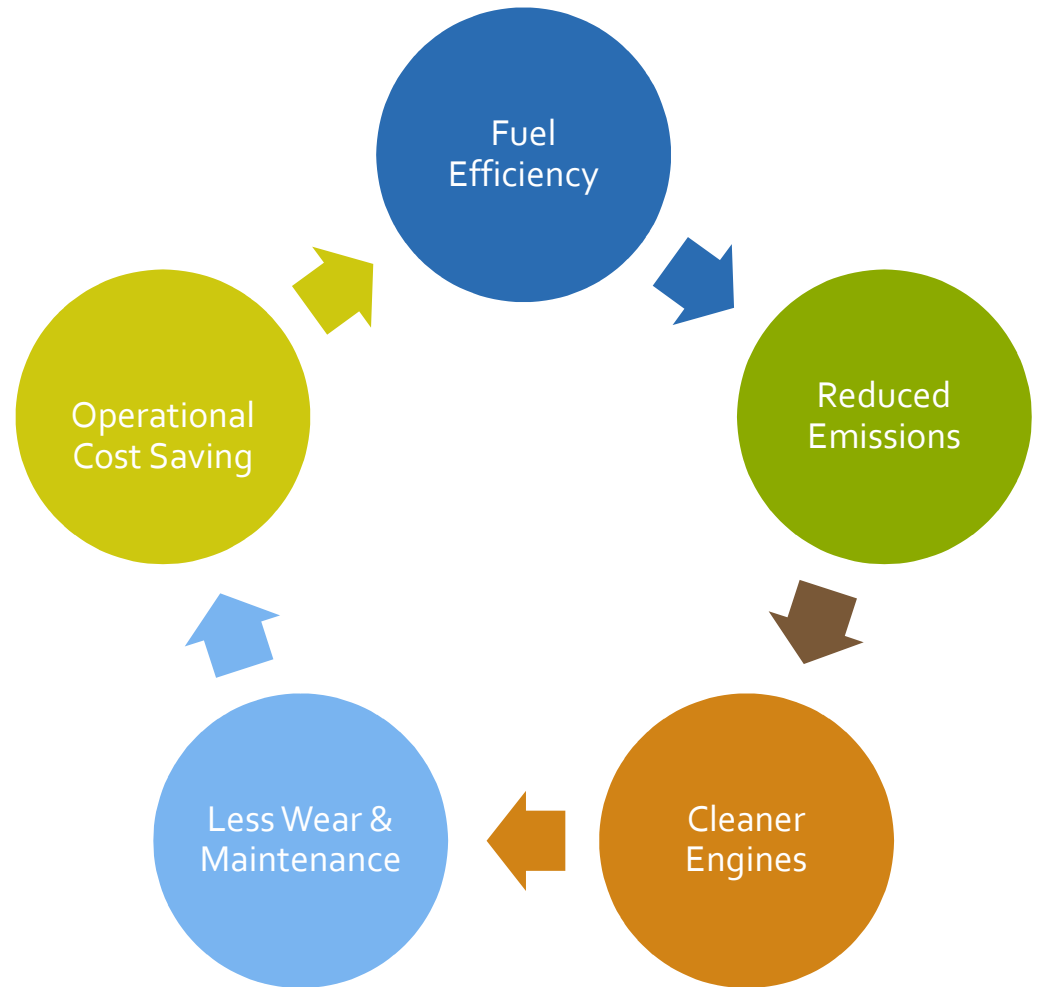
The catalyst works by exploiting a fundamental inefficiency, which is the physical limitation suffered by all internal combustion engines,  
**- Incomplete combustion.**

Carbon deposits in engines and emissions are by-products of incomplete combustion.

Our Catalyst facilitates a more complete combustion at lower temperatures, increasing the amount of fuel burned inside the combustion chamber prior to the exhaust valves opening, burning more fuel in the combustion chamber and not in the exhaust system, which uses less fuel and reduces emissions dramatically.

## Benefits

- Greater Fuel Efficiency: 15% - 50%
- Increase power output
- Dramatic reduction in emissions
- Reduced hydrocarbon particle matter
- Reduced metal wear
- Lower running temperature of engines
- Removes carbon deposits and varnish
- **Greatly reduces fuel expenditure**
- Reduces down time and maintenance



# Emissions reduction

- Reduced CO<sub>2</sub>
  - Reduced Sox
  - Reduced Nox
- 
- Reducing all the key greenhouses gases and working in synergy with IMO and ECA compliance.

Range	Low end	High end
Co <sub>2</sub>	12%	30%
Sox	45%	65%
Nox	65%	85%
CO	25%	50%

## Impact



Any organisation that uses large amounts of fuel will benefit from a change in their business dynamics through the fuel efficiency, reduced running temperatures, reduced metal wear and reduced down time for maintenance.

In most business models an improvement of 4% in fuel efficiency will make a huge financial impact, we can increase fuel efficiency by between 10% and 50%+.

Normally “going green” is an expense to organisations, with our net cost negative guarantee to end users, Our catalyst has a unique selling point by delivering huge reductions in emissions whilst saving on fuel costs By using less fuel, due to improved fuel efficiency.

## Sectors of Use

- Transportation (road, rail, sea)
- Power Utility (Oil Fired Power Stations)
- Backup Power Generation
- Nuclear Power (EDG's – Emergency Diesel Generators)
- Mining (Ore, Coal, Precious Metals & Precious Stones)
- Industry (Construction, Agriculture, Manufacturing)
- Extreme Cold Weather Conditions



## Suitable Fuels

- Diesel
- Petrol
- Bio Diesel
- MGO – IFO and other bunker fuels
- LPG
- High Octane Fuel

So far the catalyst has been used in over 450 internal combustion engines with the same positive and consistent results.

This catalyst covers all of our fuel requirement.

# Accreditation

The Catalyst has been tested by independent laboratories and has received the following accreditations.

## **EN590 & ASTM D975**

Premium or #2 Diesel with catalyst at a ratio of 1 part to 640 parts fuel is EN590 and ASTM D975 accredited. These are the regulatory requirements for diesel sold in the EU and the USA.

## **ISO 8217**

IFO/RMG 380 treated with catalyst at a ratio of 1 part catalyst to 640 parts fuel is ISO8217 accredited, conforming with MARPOL Annex VI, the EU sulphur directive and Sulphur Emission Control Areas (ECA).

# Product Testing & Verification

All customers are required to undergo testing. Baseline and product tests are conducted to give an accurate reflection of performance. This gives customers assurance and confidence in the data. There are several factors that dictate the effectiveness of the product, such as fuel type, engine efficiency, weather conditions and activity.

Client testing has delivered fuel economy improvements ranging from 15% to 54% and this is a key factor in pricing the product to deliver on our net cost negative guarantee. It also provides an accurate indicator of volume requirement that assists in the supply chain planning to ensure a continuous supply of Catalyst. Tests up to 3,000km are provided free of charge, but customers must supply fuel for the testing programme.

## Technical and Operational Support

Following testing an annual volume requirement is agreed and supply contract signed; we will then travel with each shipment, to oversee and sign off the treated fuel process and product.

We will provide ongoing training to suitably qualified local technicians. Once we are satisfied the technicians can treat the fuel and sign off for use, we simply ship the catalyst directly to them to treat clients fuel.



## Pricing

We offer a net cost negative guarantee that takes into consideration fluctuations in fuel prices and fluctuations in currency exchange rates. Our product is priced in \$USD in line with bunker fuels.

A supply contract is reviewed quarterly and the product is re-priced accordingly should it be required each quarter to fulfil our net cost negative guarantee.

We will work closely with fuel producers to minimise the cost of the product so they can offer a super efficient, super low emission fuel to help secure new customers, without effecting cost or profit margins.



# Logistics

The preferred method of treating your fuel with Catalyst is to work with your fuel suppliers and treat fuel during the process of it being contained for delivery, whether this be by road or rail. The alternative is to treat you fuel whilst in a clients own fuel storage facilities. The treatment process is relatively simple and quick. However precise ratios must be observed and the product must be evenly disbursed throughout the target fuel.





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# Title and Content Layout with Chart

