



Conserving Energy  
Through Technology  
ISO-9001-2000 certified company

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## **SYNOPSIS**

As the name indicates, the FFC is a catalyst. **By definition, a catalyst is a substance that initiates or accelerates a chemical reaction without itself being affected.** Accordingly, the FFC is not a fuel additive / consumable, but a special alloy that does not dissolve in the fuel. The FFC is **effective on all hydrocarbon fuels (both Oil & Gas)**, and is **available for Internal Combustion Engines**, for both stationary (DG sets and Heavy Earth Moving Machinery) and Vehicular (Road, Rail, Air and Sea) applications. It has a life of 50,000hrs (for Stationary applications) or 5,00,000 miles (for Road and Rail applications). It is also very effective in oil and gas fired burners in boiler and furnace applications. The FFC **contains no moving parts** so there is no breakdown due to wear and tear.



### **1. The Nature of Fuel and the effect of the FFC on it**

Hydrocarbon fuels are not perfect or uniform. As purchased at the pump, fuel is a mixture of about 40 primary and as many as a thousand secondary species of hydrocarbon molecules. The short chain types of molecules present are too short and light and the asphalt types of molecules are too long & heavy.

Refineries cannot remove many of the poorly performing molecules and once fuel leaves the refinery or is stored, it is subject to attack by Oxygen, Ozone & Microorganisms (Bacteria, yeast & mold) that grow in the fuel. All these processes degrade the fuel.

This poor fuel does not combust completely in engines and does not yield the maximum potential energy. Some of it forms carbon deposits & gums, and some enters as unburnt hydrocarbons into the exhaust. Over time, engines develop problems like gumming & constriction of fuel systems & carbon deposits in the combustion chamber & exhaust system.

The FFC reverses any degradation that may have occurred prior to the fuel being introduced to the vehicle. It reformulates the fuel to a state that is capable of a more complete combustion. As a result, the engine converts the chemical energy in the fuel to mechanical energy in a more efficient manner. Engine power is increased as a result & the toxic exhaust emissions are decreased, frequently by more than half.

## **Benefits**

The Use of the FFC in an engine results in:

- a. Generation of More Power
- b. Better economy. Fuel savings in the range 5-12%
- c. Reduced Toxic Emissions
- d. Easier Starts
- e. Less Carbon Buildup in the Engine
- f. Prolonged Engine Life.
- g. Reduced bacteria growth in stored fuel

## **2. TAX BENEFITS**

Being an energy savings and pollution control device, any company adopting the FFC is entitled to 80% depreciation on the investment made on it, during the very year of adoption, **under Section 32, Rule 5(8) (IX) of the Indian Income Tax Act 1961.**

## **3. PAYBACK PERIOD**

The Pay Back Period depends on

- a. The average duration of use (Hrs) or distance covered (miles logged) per day
- b. The average fuel consumption rate of the engine per hour
- c. The Percentage savings resulting from use of the FFC

In general, the payback period ranges between 3 and 6 months.

The FFC is accredited by the **US Government's Environmental Protection Agency (EPA)** and also by the **California Air Resource Board (CARB), USA.** CARB's pollution control parameters are known to be the most stringent in the World.

## **4. ORIGINAL EQUIPMENT MANUFACTURERS (OEMS)**

Various OEMs offering Fitch Fuel Catalyst as an option on their vehicles are:

- a) OSHKOSH CORPORATION
- b) PIERCE
- c) E-ONE
- d) CRASH RESCUE

Many OEMs in USA have tested the Fitch Fuel Catalyst and found it to be useful. These OEMs reported the following results:

- ⊙ **MARINE CORPORATION OF AMERICA:** Tested the fuel catalyst on a 270 HP Mercruiser diesel in a laboratory setting. Fuel Consumption was reduced by 10%.
- ⊙ **PRATT AND WHITNEY:** Tested the fuel catalyst on JP-8 jet fuel to determine its ability to reduce carbon deposition. Test confirmed 51% reductions when catalyst treated fuel was used.
- ⊙ **WELLCRAFT BOATS:** Tests of the Fitch Fuel Catalyst were conducted on a 26' Wellcraft Coastal Model sport fishing boat equipped with twin 200 HP Yamaha outboards. Fuel Consumption improved 14% while visible emissions disappeared.
- ⊙ **HOMELITE:** A Homelite engineer conducted a full mowing season evaluation of the catalyst on his personal Allis Chalmers 10 HP riding mower. He noted several areas of improvement in performance.
- ⊙ **CATERPILLAR (DARR POWER SYSTEMS):** Coastal Transport had this Caterpillar Distributor perform testing on a CAT 3306C 300 HP engine after 42,983 miles with the catalyst installed. Dyno loads of 28,000 lbs and 80,000 lbs. were tested. Performance and fuel economy improved on all tests conducted.

## **5. PATENTS**

Fitch Fuel Catalyst has 9 International Patents across the world including India.

## **6. INDIAN CUSTOMERS**

In the Indian Market, the FFC has been tested by and is in use in a number of organizations, some of which are listed below:

**i) Indian Railways**

Several tests were conducted by Indian Railways on Fitch Fuel Catalyst in Various generator sets, with fuel savings recorded to the extent of 14% plus. A large number of catalysts have been supplied to Indian Railways in various stations.

**ii) HONDA**

The product was tested by Honda Seal on 2MW DG. Sets fuel saving was over 9%. We have already installed the catalyst in the Power Station working from last 4 years.

**iii) PEPSI**

Product put to use in boiler have shown 17% fuel efficiency.

**iv) NHPC**

The product was tested by the R & D wing of NHPC, on NHPC's Cars, Jeeps, DG Sets, Compressors and Buses, and fuel savings to the extent of 15% plus were recorded. Letter from the R &D wing of NHPC, addressed to all Power Stations, recommends use of Fitch Fuel Catalyst. Almost all Power stations are using Fitch.

**v) BHEL**

The Product was tested by the R &D wing of BHEL on Vehicles and Heavy Earth Moving machines, and savings between 9 to 18% recorded.

**vi) TATA IRON & STEEL**

The Product is being used at TATA Iron & Steel, in their Locomotives & furnaces.

**vii) ITC Group**

The Product was tested by ITC Hotel Sonar Bangla, Kolkata on a boiler and the savings recorded was over 16%. At the Maratha, Mumbai the product was tested on PNG fuel in boilers, and savings to the extent of 8% plus was recorded.

**viii) Vodafone Communications Ltd.**

The product was tested on 15KVA DG Sets of communication Towers, and savings of 12% recorded. On 380 KVA DG Set, savings of over 9% were recorded. Supplied more than 500 units.

**ix) Reliance Communications Ltd.**

The Product was tested on 30KVA DG Sets of communication Towers and savings of over 15% were recorded. Supplied more than 1000 units to Reliance, in Delhi, Bihar, UP & Maharashtra.

**x) Electronics Regional Test Laboratory (ERTL)**

Govt. of India's NABL Accredited lab had conducted tests on 15KVA & 30KVA DG Sets, for Vodafone, Delhi and, saving on fuel consumption recorded was 8.30% & 9.71%, respectively.

**xi) Sandhar Auto Components, Gurgaon**

IN 2008, the performance of the FFC was tested on a 250 KVA DG Set over a 5 week period by the German Technical Advisory –GTZ. On average, 3.2 electrical units were generated after retrofitting the DG Set with the FFC, compared to 2.7 electrical units prior to retrofitting, for the same quantity (1Lt) of Diesel consumed. Meaning an 18.5% increase in power generated. In fuel economy terms, it meant a 15.7% reduction in fuel consumption for the same quantity of power generated.

**xii) The Hotel Sarovar Aditya Park, Hyderabad**

A 400kg/hr Revomax (Thermax) Diesel fired boiler (Output 0.376 MW) retrofitted with the FFC recorded a 16.67% drop in diesel consumed (5400lts to 4500lts) for the same duration (300hrs) of use. Formal report awaited.