

# FASTEX

## What is Fastex ?

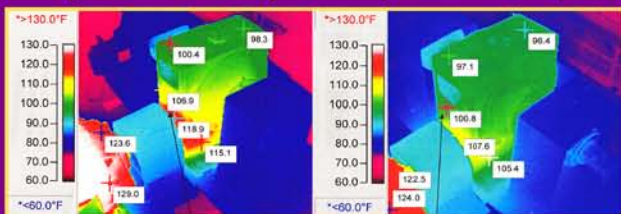
Fastex FSM is a third-generation surface modifier that combines very effective Extreme Pressure, Anti-Wear & Friction Reducing properties to improve all lubrication applications.

## Technology Behind Fastex FSM

Fastex surface modifier is a complex blend of esters combined with a highly refined and modified hydrocarbon base fluid that has been specially formulated to improve Boundary Lubrication. It does not contain Boron, PTFE, Graphite, Zinc, Molybdenum or any solid based components.

Fastex surface modifier both significantly reduces friction and improves the anti-wear characteristics at metal surfaces. The modified boundary film has a very high shear strength and provides a low friction and high anti-wear barrier between metal surfaces to protect against thermal damage traditionally caused by extreme loading pressures, oil film breakdown or lubricant failure.

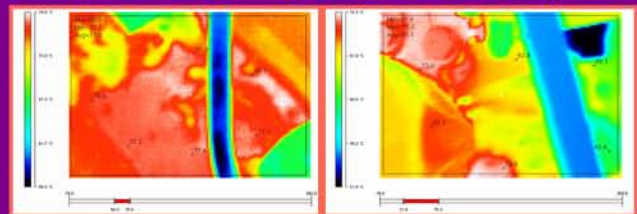
### Infra-Red Images of Gear Box (Before Fastex) (After Fastex)



10 % Spot Surface Temperature Decrease  
(5% average)

Pictures Courtesy of General Motors, Linden, USA

### Infra-Red Images of Heavy Duty Diesel Engine (Before Fastex) (After Fastex)



Average Drop in Surface Temperature was 25%  
across the fleet

Pictures Courtesy of Karnataka State Road Transport

## Benefits of Fastex FSM in Heavy Duty Diesel Applications

Reduces Engine & Equipment  
Maintenance

Improves Overall Equipment  
Effectiveness

Extends Oil Life by 30-50%

Improves Energy Efficiency

Lowers Hot Spot Temperature &  
Vibration Substantially

Increases Equipment Life  
Expectancy

Reduces Frictional Energy  
Losses

## Fully Formulated Oils Available

Fastex surface modifier can be provided for incorporation into customer's existing crankcase or gear lubricants or as fully formulated crankcase and gear lubricants meeting or exceeding OEM & Industry standard specifications.

## Applications

Fastex FSM is used in a wide range of industrial and marine applications - steam & gas turbines; diesel and natural gas engines; air compressors; gear boxes; hydraulic systems; plastics & glass molding / metal casting equipment; paper and board mills; machine tools (slideways, punch & dies, drills, turning/milling cutters, etc.) being some of the typical applications.

## Methodology

Fastex FSM is added at a ratio of, typically, 5% (by volume) to the existing system lubricating oil which is used as a transport medium throughout the lubrication system. The resulting modified metal surface acts as a microscopic bearing. In areas where the surface temperature (as a result of friction) exceeds, approximately, 122°F (50°C) a bond is formed on the surface of the metal. The resulting modified metal surface acts as a microscopic bearing.

## Typical Physical Characteristics

Characteristic	Test Method	Units	Fastex FSM
Density @60°F/15°C	ASTM D1298	kg/l	1.07
Kinematic Viscosity @ 104°F/40°C	ASTM D445	CSt	17.7
Flash Point	ASTMD92	°F/°C	250/121
Total Acid No. (TAN)	ASTM D664	mgKOH/g	0.07
Pour Point	ASTM D97	°F/°C	-22/-30
Color	ASTM D1500		<1.0

## Global Application Data

US Locomotive - Improved fuel efficiency, improved power, improved lubricant life, reduced gear & engine wear.

Canadian Coastguard - Less oil sludge, engine wear. Overhaul period increase by 20%.

Icelandic Fishing Trawlers - 33 % less engine wear, 10.1% fuel efficiency, 13% electrical power reductions from generator.

Karnataka State Road Transport - 5% fuel efficiency, 40% less engine wear, 25% reduction in vibration, 50% extended oil drain intervals.

Major industrial users include - Hyundai, Honda, Nissan, General Motors, Toyota & Michelin.

Major fleet users include SEPTA (Railroad), Miami Dade (Railroad & Buses), Reading & Northern (Rail), Tri-Rail (Buses & Rail), Nova Scotia Government Ferries & Canadian Coastguard.

### Contact us

#### Energenics Pte Ltd

89B Science Park Drive  
#03-06 The Rutherford  
Singapore Science Park I  
Singapore 118261

Phone: +65 6341 9650  
Fax : +65 6341 9610  
Email : [info@energenics.org](mailto:info@energenics.org)

### UK Contact

Stuart Anderson  
Phone : 01865 880557  
Mobile : 07879 641855  
[stuart.anderson@energenics.org](mailto:stuart.anderson@energenics.org)