



**8-10% FUEL (F.O.) SAVINGS
AT A VERY LOW CAPITAL COST**

A NEW GENERATION FUEL EFFICIENCY ENHANCER

Zycryl-15

BENEFITS

- Almost complete fuel combustion
- Reduced Carbon deposition
- Reduced black smoke
- Less air requirement
- Reduced SO₃, CO & NO_x

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A NEW GENERATION FUEL EFFICIENCY ENHANCER

INTRODUCTION

ZYCRYL-15 (patented) improves fuel efficiency of Furnace Oil (FO./ Bunker oil no 6) by 8 - 10%; by addition of 5-8% water in it, using low pressure emulsification technique and low shear, at low capital investment. A furnace or a boiler utilizes the energy generated by combustion of fuel. The efficiency of a furnace/ boiler; depends on the combustion system and utilization of the heat generated during the combustion of fuel.

ATOMIZATION PROCESS OF FURNACE OIL

A typical 6-20 bar pressure pumping to burner atomizer, produces a spray of fuel droplets of 100 to 200 microns, (depending on fuel quality, temperature & atomizer design). Typically, the larger fuel droplets do not burn completely and leave unburnt carbon, which collects on heat transfer surfaces. These carbon particles can also escape as particulate matter in exhaust gases. Poor quality burning also leads to higher percentage of Carbon Monoxide in flue gases.

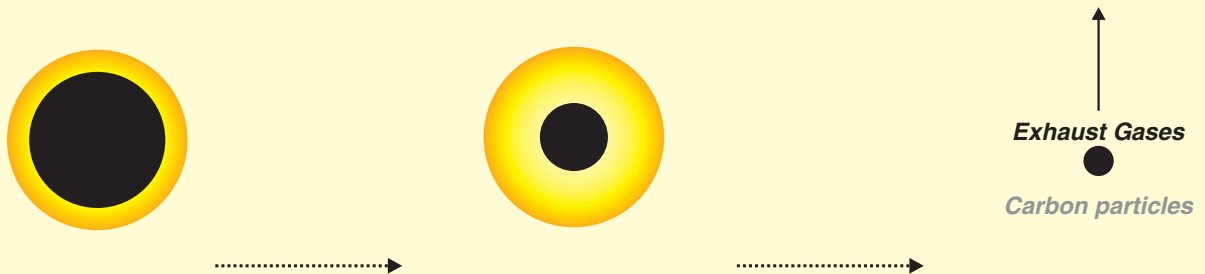
COMPLETE COMBUSTION WITH ZYCRYL-15

The fuel droplets are further divided as a result of the explosive vaporization caused by the rapid heating of the water droplets dispersed within the individual fuel droplet. The vaporization of water, in turn, produces a rapid expansion of the surrounding F.O., fragmenting the FO into a vast number of smaller fuel droplets. This process ensures almost complete combustion of FO. due to the higher surface area to volume ratio of droplet.

(Refer to diagram (b) below)

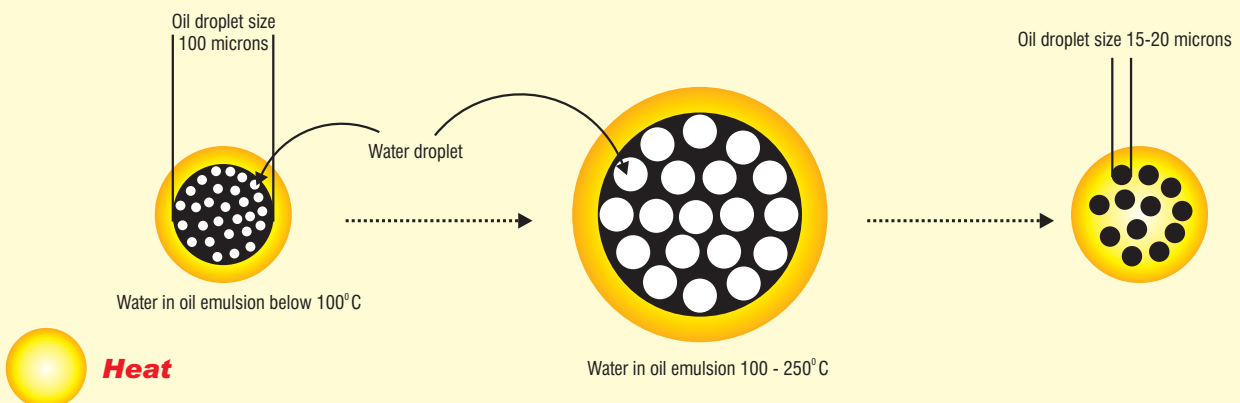
CONVENTIONAL COMBUSTION

A



COMPLETE COMBUSTION WITH ZYCRYL-15

B



APPLICATION PROCEDURE .

Zycryl-15 emulsion technology can be utilized by using following steps

Step-I : Emulsion Preparation - First prepare an emulsion of Fuel oil with water in presence of zycryl-15 in a separate Tank (in Emulsion Tank)

Step-II : Mixing Emulsion With Fuel Oil -To prepare the emulsified Fuel oil by mixing the above emulsion (from Step-1) with main fuel oil

STEP - I: EMULSION PREPARATION (In Emulsion Tank)

RECIPE -

INGREDIENTS	Parts By Wt (%)	Example (In Kgs)	Example (In Pounds)
Fuel Oil (residual/ heavy)	49 %	68.6	68.6
Zycryl-15	2 %	2.8	2.8
Water	49 %	68.6	68.6
TOTAL	100 %	140.0	140.0

PROCEDURE -

- Take 49 part of Fuel oil and 2 part of Zycryl-15 in Emulsion preparation tank.
- Mix it thoroughly for 5 minutes under high speed pumping.
- Slowly (over a period of minimum 90-120 minute) add 40 part water
- Mix further for 20-30 minutes
- Emulsion is now ready for mixing in main fuel .

STEP - II : MIXING EMULSION WITH FUEL OIL (In Main Storage Tank)

RECIPE -for making 1000 kg emulsified fuel ready for feeding

INGREDIENTS	Parts By Weight (%)	Example (In Kgs)	Example (In Pounds)
Emulsion as per Step-I	10 – 16	140	140
Fuel Oil (residual/ heavy)	86 – 90	860	860
TOTAL	100	1000	1000

PROCEDURE –

- In main storage tank , mix 10 to 16 part of above prepared (step-I) emulsion with 84 to 90 part of fuel oil (FO/ bunker oil / RFO/HFO/ # 6 oil).
- Example mix 14 part (140 kg) of emulsion with 86 part (860 kg) of Furnace oil
- Mix properly by giving 2- 3 turns for homogenous mixing .
- This emulsified fuel oil is now ready for feeding to plant .

SPCIFICATIONS -- .

Appearance : Pale Yellow brown
Viscous liquid
pH : Near Neutral
Solid Content : 98 ± 2%
Sp. Gravity : 0.985 ± 0.015

. ADVATAGES

FEATURES	BENEFITS
Reduce Fuel consumption	Improve efficiency by 8-10%
Shorter & Hotter flame	Larger radiant corrosion and Air pollution like Sox, nox
Less air requirement	Reduce carbon particle
Reduce fire side additive	Better heat transfer
Better combustion	Reduce carbon particle
Reduce emissions like- SOx, CO, SPM, Stack Temp.	Better environment & Quality
Reduced CO ₂	Reduction in Global Warming

Disclaimer

The information in this leaflet is given in good faith but without warranty. We recommend that before using our product, the customer should make his own test to determine the suitability of products for his own purpose under his operating condition. As the circumstances under which our product are stored, handled and used are beyond our control, we can not assume any responsibility for their use by the customer

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