

# HYDRA FUELPLUS



Preservation &  
Protection  
Long Term

## Broad Spectrum Activity

Hydra FuelPlus Biocide is extremely effective at even low use levels against a wide range of fuel contaminants like fungi, moulds, yeasts and bacteria's. The full detail on how much dosage of FuelPlus Biocide to be used against which contaminants is given in Table 1 below.

## Rapid Inhibition of Microbial Growth and Enzyme Synthesis

Hydra FuelPlus Biocide acts as a rapid growth inhibitor upon coming in contact with the microorganism causing the contamination. Hydra FuelPlus Biocide causes cell death and the effect cannot be reversed.

A heavily contaminated fuel system will take a longer time to achieve full eradication of the contaminant than a system with lesser degree of contamination. This is shown in the graph

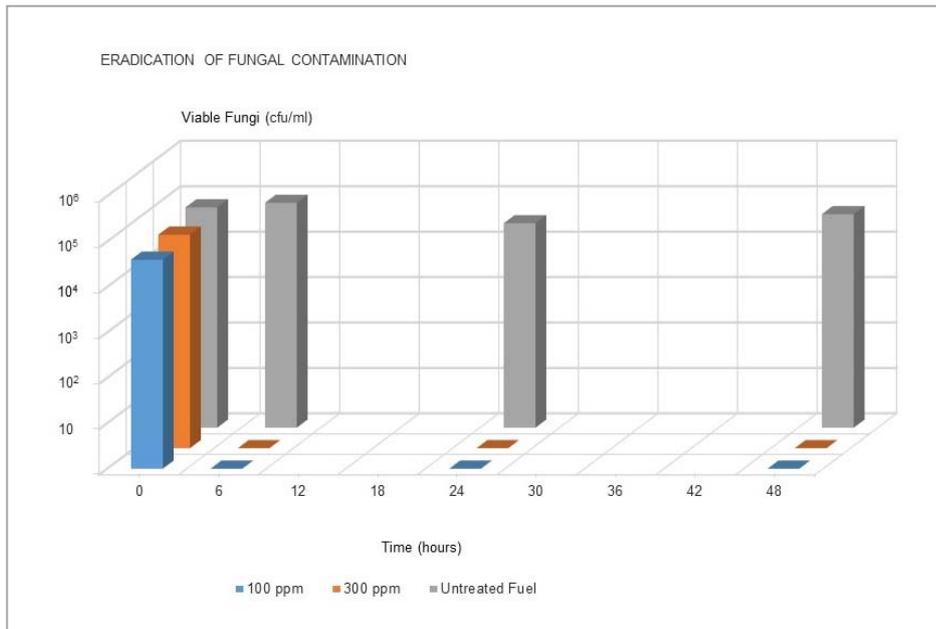


Figure 1

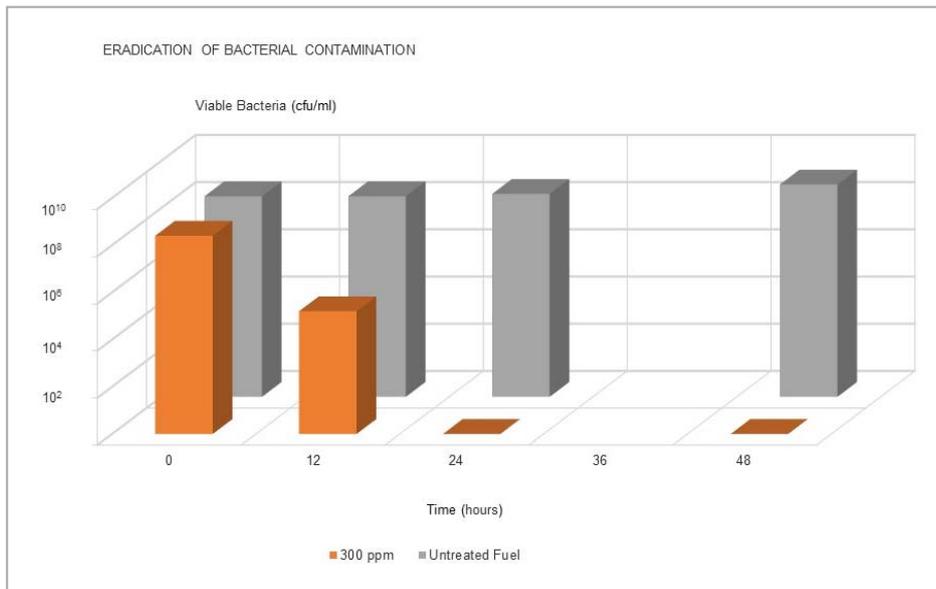
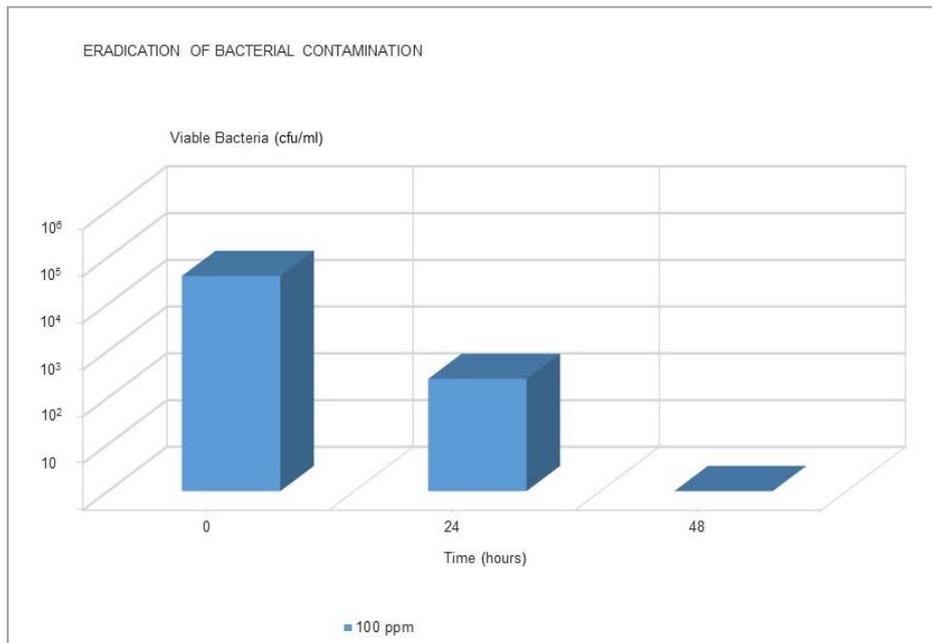


Figure 2

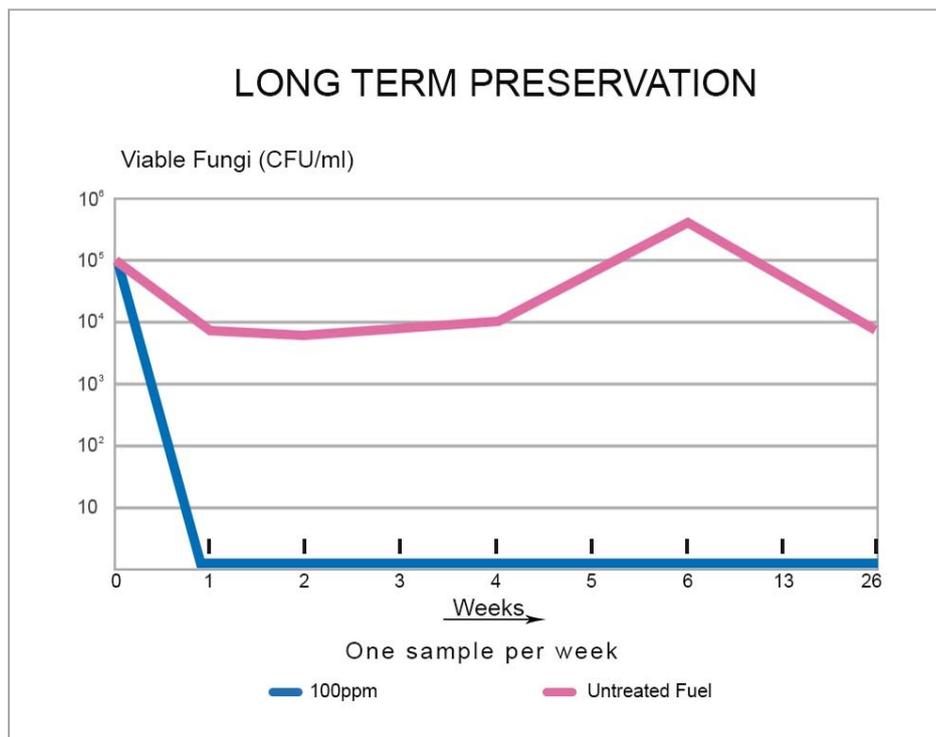


**Figure 3**

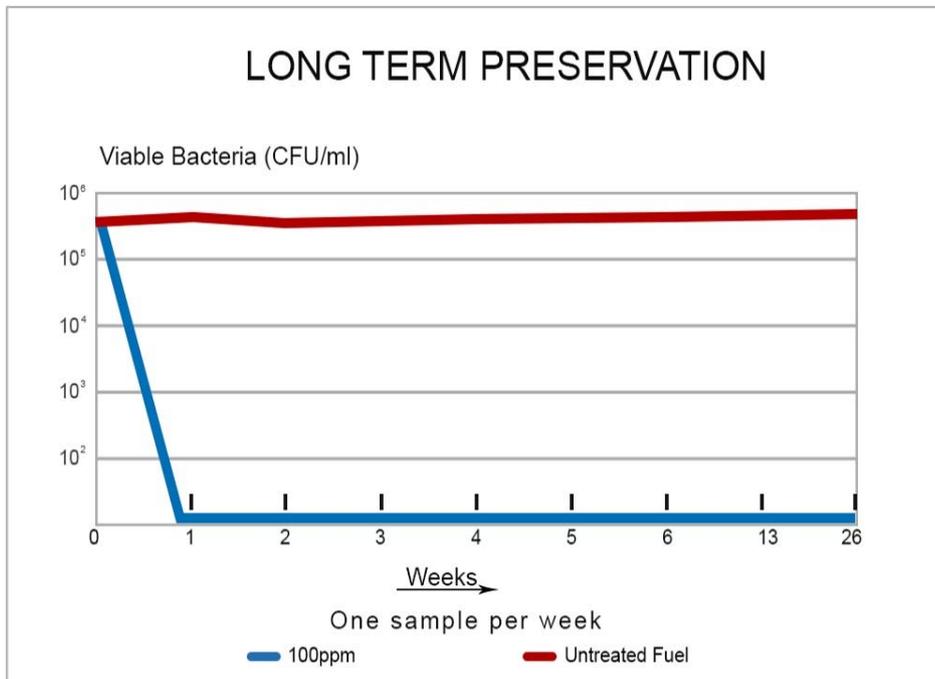
**Long Term Preservation:**

Hydra FuelPlus Biocide will eliminate existing contamination from the fuel and fuel will remain immune from future microbial attacks for an extended period of time.

In the test conducted, the fuel system treated with Hydra FuelPlus Biocide remain free from all contamination for a period of 26 weeks. No other product could match such high



**Figure 4**



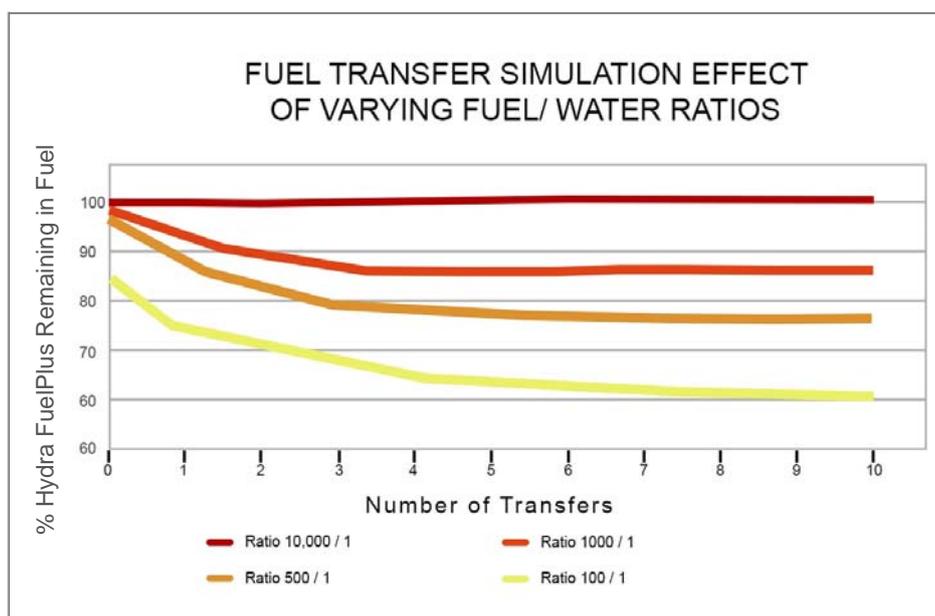
**Figure 5**

**Complete System Protection:**

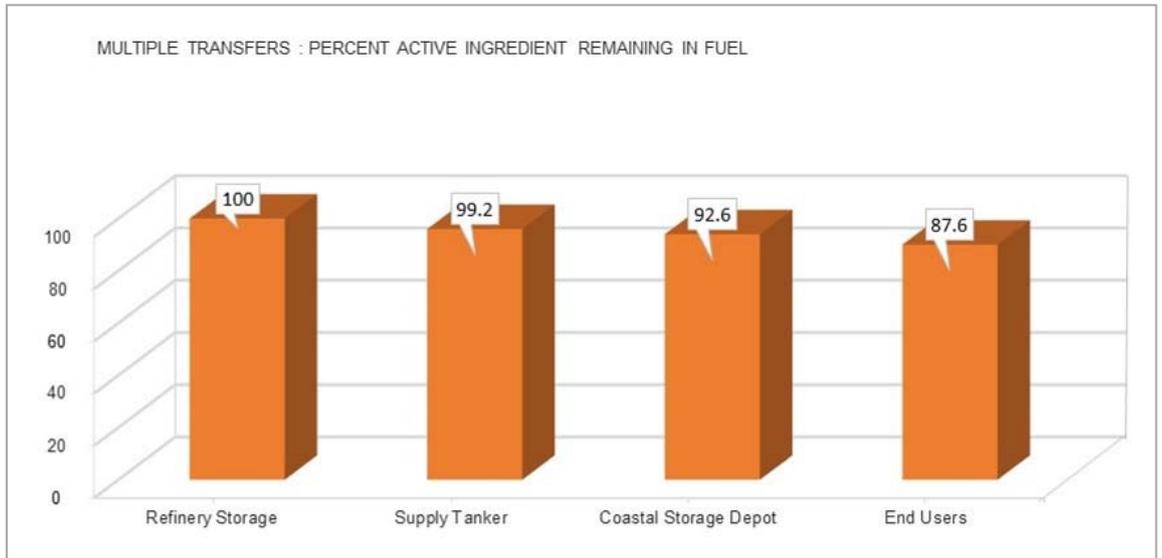
Hydra FuelPlus Biocide is a dual phase biocide. This means the biocide is soluble in both fuel and water. So, it eliminates the contaminants present in the water bottom and also protects the fuel during distribution.

The extent of partition between the water and the fuel phase depends on the fuel water ration present in fuel. Results from computer modelling, shown in figure 6, indicate that after a series of 10 transfers between 60% (fuel/water ratio of 100/1) and 97% (fuel/water ratio of 10, 000 / 1) of the Hydra FuelPlus originally dosed is retained in the fuel. This model is supported by the data generated in the field.

At refinery storage level initially fuel is treated and it is then transferred via a distribution system. The fuel analysis was done on a scale of 3 points. The figure 7 represents that, at end user level almost 88% of the original active ingredient dosed was present.



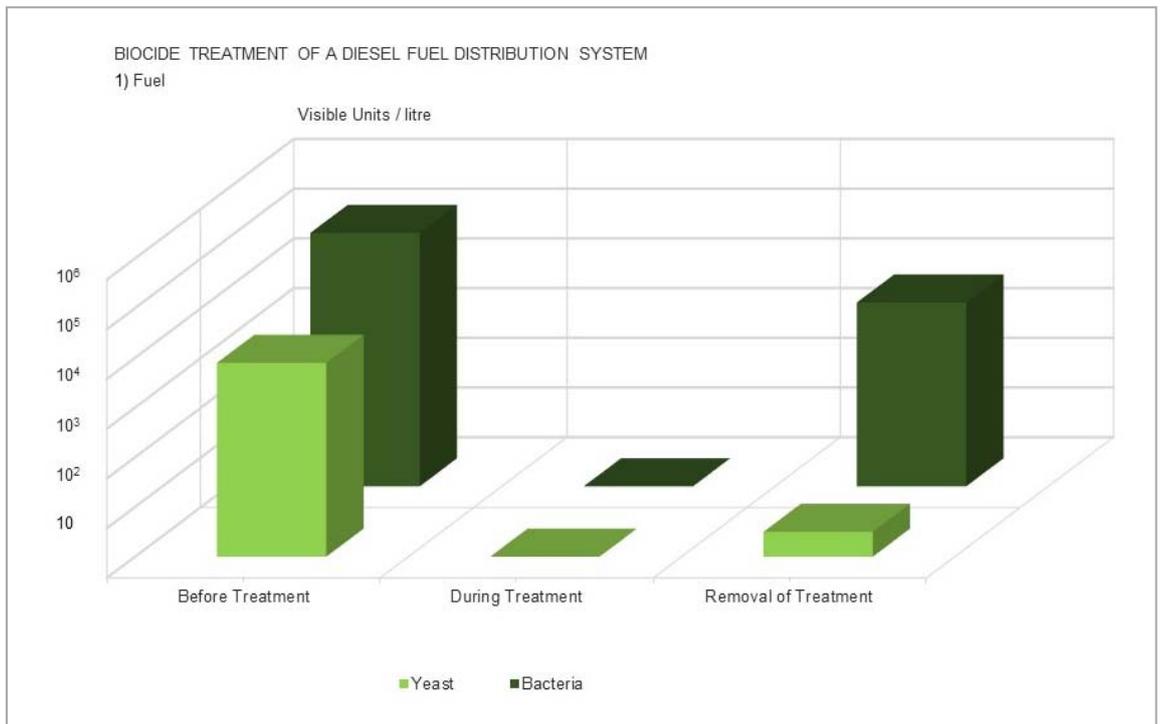
**Figure 6**



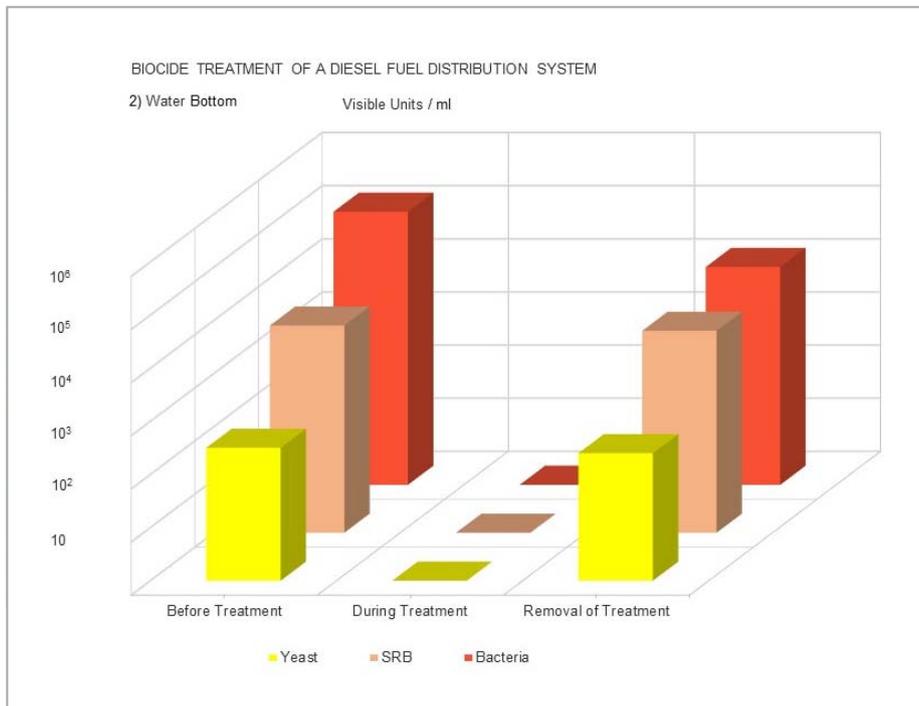
**Figure 7**

Fuel:	Water Ratios
Refinery Storage	10,000:1
Supply Tanker	1,000:1
Coastal Storage Depot	1,000:1
End Users	500:1

The graph below shows how Hydra FuelPlus biocide protects the fuel in the distribution system.



**Figure 8**



**Figure 9**

The results were taken from the customer trail which shows the contamination affect at an intermediate storage facility where the fuel dosed with Hydra FuelPlus was received.

From the results it is clearly visible that at the initial stage fuel system was highly contaminated but while receiving the fuel treated with Hydra FuelPlus, contamination was eradicated. But as soon as the treated fuel is removed the contamination reappeared. (Fig. 8 and 9).

**Proven Effectiveness:**

The above data clearly shows how effective Hydra FuelPlus biocide is in treating fuel contamination.

**Widely Approved:**

Hydra FuelPlus has a wide range of aviation, marine, automotive, home heating and military fuels treatments. All our manufacturing plants are ISO certified. We hold ISO 14001(Environmental), ISO 9001(Quality) and OHSAS 18001(Health & Safety).



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