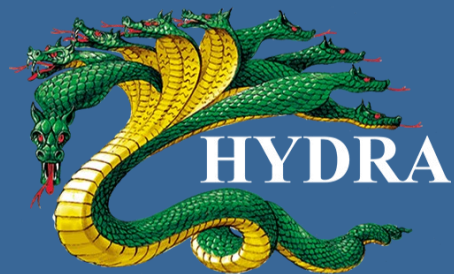


# HYDRA



# FPB-77 FuelPlus

For all liquid fuels including NATO, kerosene, petrol and diesel.  
Removes troublesome re-occurrences of bacteria, fungi, yeast and mould  
which block filters, injectors, fuel lines etc.

NATO Part No: NSN 6840-99-324-9273



# HYDRA®

## Features & Advantages

- ◆ Removes harmful bacteria, fungi, yeast & mould in any liquid fuel, including JET A-1, JET B, JP-4, JP-8, F-34, F-40, F-46, F-54, F-65, F-75, F-76, F-77, F-57, Kerosene, Diesel & Petrol.
- ◆ Effective in any hydrocarbon or bio-fuel product.
- ◆ Dual-phase cleaner effective in fuel and water phase as recommended by major engine manufacturers.
- ◆ Non-toxic, non-flammable, non-corrosive and fully combustible.
- ◆ Prevents blocked fuel lines, filters and clogged injectors - helps prevent fuel system failures.
- ◆ Compatible with all engine materials, prevents excessive sludge accumulation.
- ◆ Prevents attack to metal components and fuel tank corrosion from organic acids created by microbial growth.
- ◆ Treated fuel still meets original specification. Reduces expensive maintenance of fuel and improves fuel economy.
- ◆ Maintenance dose rate 100ppm.

## The Problem

All fuel tanks, including bulk fuel storage tanks that are used for storing Kerosene, Diesel, Gas Oil, Ultra Low Sulphur Diesel (ULSD) and Residual Fuels will contain some water.

After production by the oil refinery, as the newly refined fuel cools, water solubility decreases.

Consequently, dissolved water begins to condense as fuel is cooling in refinery storage tanks. The cooling process continues during transport.

As water's specific gravity is greater than that of fuels, as dissolved water condenses, it tends to drop out of the fuel product, accumulating in tank bottoms and in pipeline low-points.

Fuel can be stored for a long time before use and this fuel will contain a certain amount of water.



Biological Diesel (FAME), and bio petrol especially have a tendency to hold more water compared to conventional non bio fuels.

Water provides the ideal environment for microbial growth and contamination issues which have a serious impact on fuel quality and consistency.

Thus, the bulk suppliers and operators both face technical challenges, since all fuels especially low sulphur can exhibit specific issues which cause problems in operation.

The stored fuel also absorbs moisture from the atmosphere, this water leads to microbial contamination and microbial fuel bug problem.

Fuel tanks can accumulate as much as 0.1% water (based on the type and volume of fuel) as a result of condensation during long-term storage.



In hot countries and during long term storage this can especially be the case.

During long term storage, the quality of fuel can be severely affected due to the growth of harmful microbes, moulds, fungi and bacteria.

This microbial attack leads to fuel degradation, reducing fuel lubricity as fuel additives are broken down by the harmful microbes.

Spring and summer are the smartest times to examine your fuel system as the hot days and cold nights cause a lot of condensation in the fuel tanks.

Contaminated fuel can result in loss of power from partially blocked fuel lines or plugged fuel filters, smoke emissions and even breakdowns from complete blockage of the fuel line.

## Description

### For Fuel Storage Hydra FBP-77 is the Practical Solution to Fuel Quality Issues!

For customers who want to protect their hefty fuel investment, many of these issues can be solved by **Hydra FBP-77** which is an excellent Fuel Cleaner Additive! It has proven to be the economic solution for improving the quality of fuel and its properties.



**Hydra FBP-77** knocks out harmful microbes in Military Grade Fuels. Removes microbes completely within 24 hours, keeps protecting the treated fuel for over 6 months.

**Hydra FBP-77** is based upon dual Isothiazolone chemistry and technology that has been proven to be highly effective against microbial growth for over 25 years. Isothiazolones are registered under the ECHA European Biocides Directive, REACH and by the EPA in the USA.

**Hydra FBP-77** provides long term protection by preventing algae and fungi re-growth, which can also damage the fabric of the fuel tanks. Totally eradicates microbial growth in fuel systems.



### Laboratory Tests

Laboratory tests of **Hydra FBP-77** have been taken against micro-organisms isolated from contaminated fuels i.e. Pseudomonades, sulphate reducing bacteria and the main source of the problem, fungi of the genus *Candida*, *Cephalosporium*, *Penicillium* and in particular *Cladosporium res*.

These tests prove the effectiveness of **Hydra FBP-77** at in use levels of only 100 ppm.

All of our products are manufactured to the highest specifications at our UK plant, which is accredited to ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018.



### Summary

When dosed appropriately, **Hydra FBP-77** is extremely effective for both the decontamination of heavily fouled fuel systems and the prevention of future microbial spoilage.

Cleaner usage maintains the integrity of fuels at all points during storage, distribution and usage.

**Hydra FBP-77** preserves your valuable fuel systems to prevent machine malfunction, engine failures, microbial induced corrosion and impaired water removal from storage tanks.



By preventing microbial growth, **Hydra FBP-77** protects the fuel performance properties as well as specifications such as colour, heat of combustion, pour point and cloud point. Also prevents fuel starvation damage to injectors and engines.

### Dose Rates

Preventive Dose Rate: 100ppm.

1st Dose Rate or contaminated system: 300ppm.

## Laboratory Facilities

Hydra International Ltd's Research & Development Laboratories are a hub of activity where new products are developed and formulated. We have working relationships with our raw material suppliers, many of these suppliers are major world-wide manufacturers with their own development laboratories.

As a company we are well known in the chemical industry for being receptive to cutting edge new chemicals which can be incorporated into our products to achieve performance advantages. An important part of the international standards that we hold is that of constant improvement. We show that we have achieved this at every independent audit.



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