Fuel News

Fungal Contamination of Diesel Fuel on Boats

Of all the users of diesel fuel the operators of boats are the most likely to encounter problems with fungus and bacteria for the following reasons:-

- Boats operate in a wet environment and it is not always possible stop water seeping into fuel tanks.

- The fuel tanks on boats are designed to fit into restricted or unusually shaped areas to make the best possible use of available space. This can mean that they can be difficult to drain and often have areas where pools of water can collect and sit undisturbed.

- The fuel tanks contain baffles to stop the fuel sloshing about. The baffles can trap free water in small pockets.

- In warmer climates boats operate in areas with high humidity. Water in the air enters the boat tanks through the breather and condenses inside the tanks.

Where water is present in pockets in the fuel tanks it will provide a site for fungus and bacteria to grow. Often the fungus or bacteria will develop for a long time without causing any problems until one day they become disturbed and stirred up into the fuel. This will be noticed when filters start blocking with a black slime which is the dead matter from the fungus and bacteria. The fungus can be stirred up by :-

- Vigorous movement due to a storm, etc.

- The fungus population reaches a size at which it grows out of its sheltered corner and spreads into the rest of the fuel.

- The natural life cycle of the fungus reaches a point at which dieback occurs and the dead matter starts floating in the fuel.

- The fungal activity reaches a point at which natural surfactants produced by the fungus cause water and dirt to be suspended in the fuel and the fuel becomes hazy.

PREVENTION

On land the normal prevention of fungal problems is to regularly drain any water in which the fungus can grow. This may not be possible in some boats because the fuel tank shape does not provide a common draining point for all water pockets.

An alternative is to consider regular treatment with a biocide. The biocide should be one that can be added to the fuel but kills the fungus or stops it growing in the water. An example of an effective biocides is BC 250. This is available from Fuel-treat Australia (phone free call 1800 034 442) and is suitable for treating volumes up to 10,000 litres. The treat rate for a maintenance dose is 1 litre to 2000 litres and to kill a contamination the treat rate is 1 litre to 1000 litres.

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Tanks treated with a dose of the biocide at every load will stop the fungus growing, regular maintenance should be carried out to remove the water. The water when removed must be treated as a waste because it will contain active biocide. It must not be allowed to run off into the storm water system.

Biocides are poisons and should be handled according to the safety instructions on the pack, gloves must be worn when handling biocides.

TREATMENT

Should a tank become over infested with fungus then filters will start blocking with a black slimy deposit and the fuel may be hazy with water and dirt suspended in it. In such cases the biocide should be added to the fuel tank and then the fuel in the tank should be circulated to ensure that the biocide spreads throughout the fuel. The biocide should be one which will kill the fungus and then assist the water to drop out of the fuel. Fuel-treat BC 250 will do this. Following treatment, the water and dead fungus will drop to the bottom of the tank. It should then be drained off or sucked out with a hose, otherwise it will sit on the bottom until becoming stirred up in rough water and again block filters. Treatment should continue for a few loads until filter operation has returned to normal. In an extreme case it may be necessary to empty and enter the tanks to carry out manual cleaning.

The cost of treating will depend on the biocide but can be estimated at about 1 to 3 cents per litre depending on the treat rate.

For further information, please call the BP Lubricants and Fuel Technical Helpline 1300 139 700 local call or visit www.bp.com.au/fuelnews