

## References and Approvals

### Automobile and engine manufacturer

- **Daimler AG** – grotamar 71® has been tested and approved for use in diesel fuels
- **MAN Nutzfahrzeuge AG** – grotamar 71® has been tested and approved
- **MTU - Friedrichshafen** – grotamar 71® – listed as an approved biocide
- **Kässbohrer company, vehicle manufacturer Ulm** – grotamar 71® has been approved
- **Deutz AG** – the use of grotamar 71® is advised for contaminated diesel fuels
- **DAF Netherlands** – recommends grotamar 71® for contaminated diesel fuels

### Institutes

- **Dr. G. Armstrong** – School for Marine Technologie, Newcastle University
- **Department of Trade and Industry, Aberdeen** – grotamar 71® is in the "Harmonized Offshore Chemical Notification Scheme List of Notified Chemicals" (HOCNS) classified as "Gold Banner" (CEFAS)

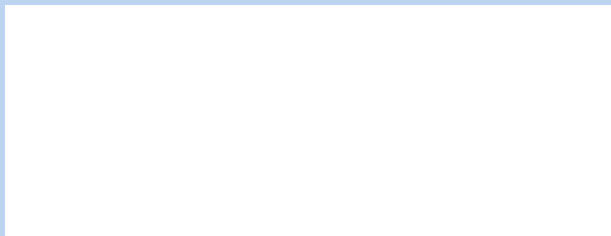
### Refinery

- **Shell Netherlands** – uses grotamar 71® for the preservation of diesel fuels

### Military / NATO

- **Netherlands** – stock no. 6850-17-9179543
- **UK** – stock no. 6840-12-370-0291  
– stock no. 6840-12-370-0293  
– stock no. 6840-12-370-0296  
– stock no. 6840-12-370-0298
- **Germany** – stock no. 6850-12-333-7409
- **Swiss Army** – grotamar 71® has been approved

## Your dealer



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## grotamar 71®

Stops microbiological contamination and biosludge formation in diesel fuel tanks

Protects against filter blockage, engine failure & corrosion



# Fast acting – with long-term protection!

Just half a cup of water in  
1000 litres of fuel is enough to allow  
microbial growth to develop.

Water can dissolve in fuel, particularly in warm, humid conditions. This water will condense out of the fuel and also from any air in the tank when it cools. It collects in the tank bottom or forms droplets on tank walls and in fuel lines.

At any stage from the refinery to your vehicle tank, microorganisms (bacteria, yeasts and moulds) can multiply exponentially in this water and form bio-sludge. Warmth accelerates this microbial growth. If there is turbulence, the microorganisms can pass from the water and sludge and mix with the fuel.

## Consequently:

The bio-sludge can cause engine failure or damage as a result of filter and injector blockage. Microbes can also cause rapid and severe corrosion of tanks and fuel system components.

## The treatment:

grotamar 71® stops microbial growth and biocorrosion.

grotamar 71® is usually added directly to fuel but it is much more soluble in water and it will concentrate into free water phase and into any wet bio-sludge, and will kill the microbes there.

Microbes in the fuel, the water bottom and the bio-sludge in a contaminated fuel system can be killed with a shock dose of grotamar 71®. Regular treatment with a lower preventive dose of grotamar 71®, makes expensive filter changes unnecessary and prevents the engine damage and corrosion which microbes cause.

- tested by leading engine manufacturers such as MAN, Daimler, MTU, ...
- suitable for all diesel engines, pumps and fuel equipment



Use biocides safely.  
Always read the label and product information before use.  
Keep out of the reach of children.

## Dosage:

- As a **shock dose** add 500 ml grotamar 71® for each 500 litres of total tank volume.
- As a **preventive dose** add 125 ml (1/4 can) for each 500 litres of total tank volume, every time the tank is refilled.  
If the fuel supplied is known to be clean, as little as 25 ml of grotamar 71® for each 500 litres of fuel may be sufficient.

## Usage:

Wherever possible, drain all water from the tank before adding grotamar 71®. Add grotamar 71® to the tank when it is about one third full. grotamar 71® will be mixed into the system as the tank is filled up. grotamar 71® will concentrate into any wet sludge or residual water and start to work immediately. The amount to add depends on the total tank volume.

For a heavily contaminated fuel system, where there is visible sludge or if technical malfunction such as filter blockage has occurred, apply a **SHOCK DOSE**. If possible, drain off any residual water and dead bio-sludge again about 24 hours after grotamar 71® treatment. In cases of extremely severe sludge formation, the fuel system (tank, fuel lines, filters) should be cleaned before using grotamar 71®. If heavily contaminated tanks are not cleaned before treatment in some case it may initially be necessary to change fuel filters more frequently as grotamar 71® clears the bio-sludge from the system.

## grotamar 71® at a glance:

- concentrates into water where the microbes live in the fuel system
- prevents sludge formation in fuel tank water and the fuel
- effective corrosion protection
- rapidly kills and controls all microbial contamination (sometimes called MBC)
- board activity spectrum against all types of microorganisms
- highly effective
- economical long term protection of tank, lines and engines
- no corrosive combustion products
- in compliance with the European Biocidal Products Directive
- NATO Codified (UK NATO Stock number: 6840-12-370-0291, Germany NATO Stock number: 6850-12-333-7409)