



AQUA-ZORB

FUEL CONTAMINATION AND
MAINTENANCE SOLUTIONS



SERVING THE MARINE & POWER INDUSTRIES



THE PROBLEM

What's in your fuel tank?

| Contamination Type | Cause | Consequence |
|----------------------------------|--|--|
| Water | <ul style="list-style-type: none">• Poor fuel handling and transfer processes. Leaking fuel tanks.• Condensation within fuel tanks.• Poor quality fuel delivery. | <ul style="list-style-type: none">• Engine and fuel system damage.• Corrosion.• Fuel oxidation.• Diesel bug growth. |
| Condensation Within Fuel Tank | <ul style="list-style-type: none">• Naturally occurring in fuel - increases with heat & mechanical stress to fuel. | <ul style="list-style-type: none">• Blocked engine filters. |
| Diesel Bug | <ul style="list-style-type: none">• Grows as a result of water contamination. | <ul style="list-style-type: none">• Blocked engine filters & fuel components.• Corrosion of fuel tanks. |
| Gums, Resins & Acids | <ul style="list-style-type: none">• Oxidation of fuel, poor fuel handling.• Corroded fuel tanks. | <ul style="list-style-type: none">• Filter blockage & corrosion. |
| Other [e.g. rust, grit, soot] | <ul style="list-style-type: none">• Poor quality fuel, Poor handling of fuel, corroded fuel tanks | <ul style="list-style-type: none">• Filter blockage and fuel |

Diesel powered equipment, such as heavy plant equipment, generators and emergency standby pumps etc. rely on having pure, clean diesel fuel in the tank.

The ultra-fine tolerances of today's super efficient diesel engines mean they are extremely sensitive to any fuel contamination or fuel quality problems.

Fuel is easily contaminated through simple human error, poor fuelling practices and neglect.

Water in fuel is bad news. We all know that water can wreck your fuel injection systems but it can also encourage the growth of "diesel bug" in fuel tanks - a well known phenomenon. A cocktail of bacteria and fungi that will live and thrive in water in your fuel tank, causing growth of slime and chunks of bio-mass which will easily clog your diesel engine filters and cause power failure.

It may sound extreme but some of the most powerful engines and generator systems have been brought to a standstill by something as simple as bacteria.

THE SOLUTION

Aqua-Zorb

The absorbent in the **Aqua-Zorb water-free cell** is an inert, non-toxic chemical formulation designed to achieve maximum results. the formulation will not break down once mixed. the composition remains intact for the life of the cell which is one year.

The specially coated material acts like a non-return valve allowing water to flow into it but not out. made from heavy duty nylon-type material , it is extremely strong and guaranteed not to break under hazardous circumstances. Metallic -woven feed and pull line also acts as a safety earth wire to ensure no static occurs and that Aqua-Zorb is safe and secure in your tank.



Where do you use it?

- ✓ On all diesel vehicles
- ✓ On all petrol driven vehicles
- ✓ On avgas aviation fuel
- ✓ In ship service tanks
- ✓ Above ground storage tanks
- ✓ Below ground storange tanks

You can use Aqua-Zorb in:

| |
|---|
| Ships, boats and all marine craft |
| All diesel driven trucks, lorries, vans and cars |
| All petrol driven vans, cars and motorcycles |
| Generator sets, construction plant and mining equipment |
| Avgas storage tanks, diesel and petroleum storage tanks |

Premier Separator Services
Unit 1B, Lake Industrial Way, Sandown,
Isle Of Wight, PO36 9PL, UK

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PREMIER
SEPARATOR SERVICES LIMITED

Visit www.premiersepservices.com for details.

THE EASY WAY

Simple to Insert & Retrieve



Fuel floats
on top

Water stays
at bottom



Using line, insert cell into tank and secure clip to the
base of the fuel cap or similar



Fuel remains
in tank

Water on bottom is
absorbed by cell



Cell lies flat on bottom of the tank allowing absorption of
water but leaving the fuel in the tank

WILL WORK UP TO ONE YEAR OR UNTIL FULL

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THE 14 INCH CELL

For use in mobile and static machinery.

| Size Of Cell [Width x Length] | | Approximate Water Absorbency | | Diameter Of Cell When Fully Expanded [Width x Length] | |
|----------------------------------|---------------|------------------------------|------|--|--------------|
| Inches | cms | Fl oz | mls | Inches | cms |
| 2.0 x 14 | 5.08 x 35.56 | 10 | 299 | 1.5 x 14 | 3.81 x 3.56 |
| 2.5 x 14 | 6.35 x 35.56 | 14 | 435 | 2.0 x 14 | 5.08 x 3.56 |
| 3.0 x 14 | 7.62 x 35.56 | 22.2 | 656 | 2.5 x 14 | 6.35 x 3.56 |
| 4.0 x 14 | 10.16 x 35.56 | 46 | 1360 | 3.5 x 14 | 8.89 x 3.56 |
| 6.0 x 14 | 15.24 x 35.56 | 93.3 | 2759 | 5.0 x 14 | 12.70 x 3.56 |

THE 32 INCH CELL

For use in domestic and commercial storage tanks.

| Size Of Cell [Width x Length] | | Approximate Water Absorbency | | Diameter Of Cell When Fully Expanded [Width x Length] | |
|----------------------------------|---------------|------------------------------|-------|--|---------------|
| Inches | cms | Fl oz | mls | Inches | cms |
| 2.0 x 32 | 5.08 x 81.28 | 28 | 790 | 1.5 x 32 | 3.81 x 81.28 |
| 2.5 x 32 | 6.35 x 81.28 | 36 | 1034 | 2.0 x 32 | 5.08 x 81.28 |
| 3.0 x 32 | 7.62 x 81.28 | 67 | 1892 | 2.5 x 32 | 6.35 x 81.28 |
| 4.0 x 32 | 10.16 x 81.28 | 115 | 3279 | 3.5 x 32 | 8.89 x 81.28 |
| 6.0 x 32 | 15.24 x 81.28 | 225 | 6400 | 5.0 x 32 | 12.70 x 81.28 |
| 12.0 x 32 | 30.5 x 81.28 | 533 | 15140 | 12.0 x 32 | 30.5 x 81.28 |

OTHER SIZES AVAILABLE

Visit www.premiersepservices.com for details.

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SERVING THE MARINE & POWER INDUSTRIES

THE TANK ROD

The 32" Cell & Tank Rod

For use in domestic and commercial above and below ground storage tanks



When using the 32" cell, it is recommended that the tank rod is used. This gives greater coverage of the tank bottom and allows use of a far larger cell. This in turn equates to the removal of much more water.

It also works as a weight ensuring that the cell lies flat on the bottom and gives greater manoeuvrability of placement of the cell. Also it gives added strength and durability.

The tank rod consists of a stainless steel rod with SS316 stainless steel marine clips at each end to allow easy attachment of the cell.

It is recommended for all storage tanks, mobile bowzers etc. that the tank rod is used.

As with the smaller cells they come in a range of sizes due to the variation of entry to fuel storage tanks.

INDEPENDENT REPORTS

BEVERLEY ANALYTICAL LABORATORIES

HULL BRIDGE MILLS • TICKTON • BEVERLEY • EAST YORKSHIRE • HU17 9RZ

TELEPHONE: 01964 542144 • FAX: 01964 543060

e-mail: karen@beverleyanalytical.co.uk • web-site: www.BeverleyAnalytical.co.uk



15th July 2014

FAO: John Beaumont/Carl Killingsworth
Aqua-Zorb UK Limited (co no 9005027)
127 Westlands Road
Hull
East Yorkshire
HU5 5NX

The following observations were made on the tests applied to your samples:-

1. Avgas 100LL (Piston Engine Aviation) Fuel with Aquazorb cell size 25

3000 millilitres of fuel and 400 millilitres of water were placed in a cylindrical tank with the aquazorb cell. After 24 hours, the cell was removed. No water remained in the fuel, no sediment was found and no change in colour occurred.

2. AVTUR Jet A1 Fuel with Aquazorb cell size 25

3000 millilitres of fuel and 400 millilitres of water were placed in a cylindrical tank with the aquazorb cell. After 24 hours, 6 millilitres of water remained. No sediment was found and no change in colour occurred.

3. Diesel with Aquazorb cell size 25

3000 millilitres of fuel and 400 millilitres of water were placed in a cylindrical tank with the aquazorb cell. After 24 hours, 5 millilitres of water remained. No sediment was found and no change of colour occurred.

4. Petrol with Aquazorb cell size 25

3000 millilitres of fuel and 400 millilitres of water were placed in a cylindrical tank with the aquazorb. After 24 hours, 4 millilitres of water remained. No sediment was found and no change of colour occurred.

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5. Paraffin with Aquazorb cell size 25

3000 millilitres of fuel and 400 millilitres of water were placed in a cylindrical tank with the aquazorb. After 24 hours, 4 millilitres of water remained. No sediment was found and no change of colour occurred.

In my opinion the small amount of water remaining was in the form of "bubbles" attached to the side of the vessel and the aqua-zorb cell size 25 was most efficient in the removal of water.

Signed Karen Rodmell
Laboratory Manager

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HEALTH & SAFETY DATA SHEET

Product: Aquazorb Water Free Cell

Product Description: Off-white flakes in a durable sealed synthetic fabric bag.

Product Composition:

- 1.1 Synthetic fabric bag: nylon
- 1.2 Static Line: nylon and stainless steel
- 1.3 Off-white flakes: a mixture of a type of pregelatinised modified starch and sand

Storage, Stability and Handling Prior to Use:

- 2.1 Storage Conditions: store inside cool and dry
- 2.2 Special Protection Measures: avoid contact with water before final use
- 2.3 If synthetic fabric bag is cut open and contents spilled brush up in dry form if possible and dispose of with domestic refuse. If wetted, wash with water and flush away.

Handling During and After Use:

- 3.1 After immersion in the fuel subsequent handling of the bag should be with neoprene or other resistant gloves to prevent contact of fuel with skin. Normal precautions should be taken to minimise inhalation of the fuel vapours.
- 3.2 When the aqua zorb water free cell is replaced it should be drained for 10 to 15 minutes and surface run-off from the bag allowed to return to the tank. The aqua zorb water free cell should then be transferred to a plastic bag for disposal.

Disposal:

- 4.1 The used aqua zorb water free cell, in its plastic bag, should be disposed of in the same manner as fuel filters.

In The Event of Fire:

- 5.1 Extinguisher Media: water
- 5.2 Fire Fighting Precautions: use breathing protection because poisonous gases may be formed when the product is burned (eg CO and nitrogen oxides).

Karen Rodmell
Laboratory Manager

Registered in England No. 1203357 • Registered Office: Cheveley Park Stud, Duchess Drive, Newmarket, Suffolk, CB8 9DD

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COSHH Assessment Form for

Aqua-zorb Water Free Cell

| | | | |
|--|---|--|--------------------------------|
| | | | |
| Assessors: Carl Killingsworth and John Beaumont (company directors) | | Employer/Supervisor: not applicable | |
| Assessment Date : 13/4/15 | | Dates reviewed | |
| | | 13/4/15 | Due again: 13/10/15 |
| HAZARDS IDENTIFIED | | | |
| Possible contact with skin from fuel | | | |
| Possible inhalation of fuel fumes | | | |
| Product Composition: | Description of Activity: | Hazardous Properties: | |
| Synthetic fabric bag – nylon | Open sealed bag | None in the product – residual fuel only upon retrieval from tank. | |
| Static line – nylon and stainless steel | Attach and secure static line to product. | | |
| Off white flakes – a mixture of sodium, | Insert into fuel tank via fuel entry | | |
| Polymer/starch absorbent product and Silica. | Secure to safe anchor point. | | |
| This substance is not classified as hazardous according to CLP/GMS. Regulation (EC) No. 1272/2008, not applicable. Classification according to directive 67/548/EEC. | Retrieve and extract from tank using retrieval line. Remove residual surface fuel using paper towel or cloth. Wipe dry leave in well ventilated area and dispose of in accordance with the recommendations in the report dated 21 st April 2015 from | | |

| | | |
|--|---|--|
| | Staffordshire Scientific Services – see attached letter. | |
| Potential Hazards from Activity: Contact with skin from fuel Possible inhalation from fuel fumes | Those at risk of exposure: Employees undertaking use of product | Current control measures: Appropriate PPE to be utilised at all times comprising neoprene or other resistant gloves and eye protection. Product instruction usage to be followed at each stage. Normal precautions should be taken to minimise inhalation of fuel vapours. When the aqua-zorb water free cell is replaced is should be drained for 2 minutes and surface run off from the bag allowed to return to the tank. The aqua-zorb water free cell should then be transferred for disposal. |
| With these controls in place the risk of exposure is adequately controlled. | | |
| In the event of fire: Extinguisher media: water Fire fighting precautions : use breathing protection because poisonous gases may be formed when the product is burned (e.g. CO and nitrogen oxides) | | |

SUMMARY OF MEASURES:

1. Product to be stored in cool dry environment
2. Avoid contact with water
3. If synthetic bag is cut open and contents spilled, brush up in dry form if possible and dispose of with domestic refuse. If wetted wash with water and flush away

Disposal Procedures

Remove residual surface fuel using paper towel or cloth wipe dry. Leave in well ventilated area and dispose of in accordance with the recommendations in the report dated 21st April 2015 from Staffordshire Scientific Services – see attached letter..

I confirm that I have considered and understand the product to be used and the associated hazards. I am satisfied that all of the hazards have been identified and that the control measures to be followed will reduce the risks to as low a level as reasonably practicable. Name.....Signed.....Date.....

DISPOSAL RECOMMENDATION



Staffordshire Scientific Services
PUBLIC ANALYSTS OFFICIAL AGRICULTURAL ANALYSTS
MICROBIOLOGISTS ENVIRONMENTAL CONSULTANTS
SCIENTIFIC ADVISERS

To:
Beverley Analytical
Laboratories
Hull Bridge Mills
Tickton
Beverley
East Yorkshire

REPORT

Lab Ref : 10342427
Date : 21 April 2015

On : Aquazorb Cell, Beverley Analytical Laboratories
Your Ref:
Date Rec : 21/04/2015

Order Number :
Issue Number : 1

For the attention of: Dawn Todd

A sample described as Aquazorb Cell was submitted to the laboratory for testing.

The sample has been tested under my direction and the results are as follows;

Comments

Comment

The sample submitted consisted of a water absorbent material which was traded under the name 'Aquasorb'. This material comprises a resin impregnated cellulose body with a bonded water absorbing polymer; this particular sample had been used to absorb water from a fuel hydrocarbon. Some advice on the disposal of the material was requested. The 'Aquasorb' item weighed about 540g and consisted of a cylindrical fabric tube tied to the ends and presumably filled with 'Aquasorb'. The item had a strong odour of diesel fuel. It is recommended that a single item which has been used to absorb water from diesel fuels or similar and contains hydrocarbon residues should be left in a well ventilated area and then disposed of. Otherwise 'Aquasorb' items which are saturated with hydrocarbon residues should be disposed of as special waste at a site licensed to accept items of this type.

Dr Frank Hollywood
Public Analyst

Page: 1 of 1

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Tests marked * are included in the UKAS accreditation schedule for this laboratory. Further information on accredited tests can be obtained on request. Opinions and Interpretations expressed herein are outside the scope of UKAS accreditation. Tests marked * have been subcontracted.

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