

RBC OIL BIOREMEDIATION PILLOWS

INTRODUCTION

Oil pollution arising from oily water separators and bilge tanks of ships and boats can now be avoided by the use of **RBC Bio-Remediation Pillows**.

RBC Bio-Remediation Pillows are designed to be used in single or multi-stage oil interceptors, drainage culverts, leachate lagoons, bilge tanks in marine and inland waterways ships and boats. Floating oils and fuels oils are naturally attracted to the absorbant polymer present in the pillows fibres. Specially selected microorganisms encapsulated in an inner pouch are activated in the presence of oils and water and certain micronutrients. These microorganisms are then capable of degrading a range of oils (linear alkyl chains and polyaromatic fractions), heavy and light fuels, diesel range organics, and BTEX compounds. Additionally, a very broad range of non-oily, organic materials are also degraded, giving an overall reduction in BOD or TOC.

RBC Bio-Remediation Pillows are also designed for continuous absorption and degradation of oils in addition to use in casual spillages.

Binding and biodegradation of floating oils enables gas exchange between the air and liquor in the tank. This is important in avoiding mal-odour and even corrosion of metal tanks.

TECHNICAL INFORMATION

RBC Bio-Remediation Pillows are specially treated to give oleophilic (oil attracting) properties with hydrophobic (water repellent) filament yarn. The choice of fibre and the construction has been optimised to give an exceptionally high void volume of 92% for maximum absorption.

Stitch bonding provides high tensile strength, dimensional stability and prevents breakdown when fully loaded with oil. **RBC Bio-Remediation Pillows** are available in white and red (other colours available upon request). Each pillow has a durable eyelet in one corner to allow the attachment of an anchor rope.

After use **RBC Bio-Remediation Pillows** can be disposed of as dry waste. In some cases, the pillows can be reused. Disposal and replacement is necessary in cases where the fibres have become saturated or the bacterial numbers have been reduced thus lower effectiveness. On occasion a toxic event may inactivate the bacteria, but the absorbant will still function. Oils and non oily hydrocarbons may be completely mineralised to carbon dioxide and water, or partially degraded to a less harmful but still immobile state.

RBC Bio-Remediation Pillows immediately absorb any free oil on the surface water and are capable of absorbing up to 14 times its weight in oil (equivalent to 9 litres). Over a 4 month period it is estimated that each standard size pillow has a potential to convert 15-18kg of oil



ADVANTAGES

- ✓ Easily placed in the surface layer of an interceptor or laid in culverts to remove surface oil. Tie to any convenient fixing point.
- ✓ Easily placed in a bilge tank or under an engine block. Tie to any convenient fixing point.
- ✓ Once in place requires no maintenance other than periodic replacement (approx 6 months).
- ✓ Once the microorganisms start growing each biopillow is capable of degrading approximately 1kg of oil per week.
- ✓ Non-toxic and safe to use in all applications. Contains no hazardous materials.
- ✓ Supports the function of natural bacterial flora to digest oil and a other hydrocarbons
- ✓ Reduces significantly the volume of free oil in an interceptor or bilge tank.
- ✓ Can significantly reduce BOD/COD and TSS.
- ✓ With continued use, can significantly reduce the amount of interceptor sludge and thus reduce the frequency and cost of interceptor/ tank emptying and maintenance.
- ✓ In many cases can mitigate malodour associated with oily hydrocarbons and VOC's.
- ✓ Specially treated fibres and webbing repel water to give maximum oil absorption.
- ✓ Tough, resilient and very durable.
- ✓ After use each pillow can be disposed of as dry waste.

DOSAGE (RELATED TO THE INFLUENT FLOW RATE)

For flow rates lower than 1 m³/h:

- ✓ Prior the beginning of the trial, the separator would better be emptied.
- ✓ After the interceptor has been emptied, install 2 **RBC Bio-Remediation Pillows** in the last but one chamber and 1 **Rumexo HC Biopillow** in the last chamber.
- ✓ Use 1 **Rumexo HC Biopillow** per 5m³ of bilge tank volume
- ✓ Replace **RBC Bio-Remediation Pillows** every 4 to 6 months depending on the application

For flow rates equal to or greater than 1 m³/h:

| Flow rate | dose for a 6 month period last but one chamber | dose for a 6 month period last chamber |
|---------------------|--|--|
| 1 m ³ /h | 2 biopillows | 1 biopillow |
| 3 m ³ /h | 4 biopillows | 2 biopillows |
| 9 m ³ /h | 8 biopillows | 4 biopillows |

TYPICAL PERFORMANCE ANALYSIS

A five stage oily water separator.

One OBP in each chamber for a period of 16 weeks prior to analysis.

| ANALYSIS | INFLUENT SAMPLE | EFFLUENT SAMPLE |
|------------------|-----------------|-----------------|
| pH | 6.9 | 7.0 |
| COD | 5198 | 146.8 |
| BOD | 741 | 55.9 |
| SUSPENDED SOLIDS | 992 | 14 |
| OIL | 1334 mg/l | 10 mg/l |

SPECIFICATION

Product Type: Rumexo Bio-Pillow, for absorption and biodegradation of oily hydrocarbons in water
 Product Code: Rum-HC (white, single red eyelet)
 Unit dimensions: 450x350mm
 Unit weight: 700g
 Construction: Light weight polypropylene net
 Oil absorbant: Shredded, melt blown polypropylene (oil capacity 4kg/kg)
 Bio-pouch 2 x 175g pouches containing bacterial consortium + micro/macronutrients)
 Microbial count: Average 5e9/g
 Microbial specification: Consortium of 6 x Class 1 *Bacillus strains* (4 species), 2 *Pseudomonas strains* (2 species) and 1 *Alcanivorax sp.*

PACAKAGING

| | Number biopillows/unit |
|------------------------|------------------------|
| Single unit | 1 |
| Single Case | 6 |
| ½ pallet box/'big bag' | 100 |
| Whole pallet box | 200 |

PLACE OF MANUFACTURE

This product is manufactured and Shipped from the UK

The information provided in this Product Data Sheet is accurate at the date of issue and should be used for indicative purposes only. Please refer to your Company Representative for specific User instructions as to how these relate to your usage requirements. Please note that Rumexo Ltd is not liable for claims, damages, costs or expenses of any kind arising from the mishandling of the product or changes that might occur during the handling, storage and application conditions provided by any third party who does not follow the minimum requirements defined in the SDS. Please refer to the SDS for further information regarding the handling, storage and application procedures for the product.