



## *BIOMIN, INC.*

*State of the art water filtration media*

*We will lower operations costs by 50%, and bring them into compliance with discharge regulations.*

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Makers of OilSorb™ and Other State-of-the-Art Filtration Media

### Technical Advisory #32

#### **Calculating OILSORB Organoclay requirements.**

1. Calculate amount of OILSORB that is required. Known: Flow=15 gpm; O&G = 70 ppm. Operating period: 1440 min/day, 7 days/week.

$\text{ppm} \times 0.0000084 = \text{lb/gal} \times \text{gpm}$

example:  $70 \text{ ppm} \times .0000084 = 0.00059 / .60 \text{ adsorption capacity} = 0.001 \times 15 \text{ gpm} = 0.0147 \text{ lb OILSORB per minute} \times 1440 \text{ min/day} = 21,17 \text{ lb OILSORB/day} \times 7 = 150 \text{ lb OILSORB per week} \times 4 = 592 \text{ lb OILSORB /month} \times 12 = 7112 \text{ lb per year} / 50 \text{ lb/ft}^3 \text{ bulk density} = 142 \text{ ft}^3$ . Remember, the adsorption vessel requires 20% expansion room.

2. To calculate the cost savings when comparing the amount of OILSORB used vs activated carbon, as well as the requirement of OILSORB, contact [biomin@aol.com](mailto:biomin@aol.com) and ask for the spreadsheet.

3. To calculate the OILSORB requirement based on porosity of the OILSORB, click on "Tutorial" on the web site, front page, [BIOMININC.COM](http://BIOMININC.COM)

The quantity of OILSORB needed will depend, in part, on the desired effluent concentration. The tutorial is helpful because it estimates the amount of OILSORB needed for different design flow rates, pollutant concentrations, and desired removal efficiencies. It stops treatment when the effluent concentration is 20% of the influent concentration.

4. Inlet concentration of 100 ppm O&G.

Oil specific gravity: 1 (the number 1 is for ease of calculations; for correct specific gravities check the web site, [www.engineeringtoolbox.com](http://www.engineeringtoolbox.com), or type in specific gravity for liquids on [google.com](http://google.com))

OILSORB loading factor: 50% by weight, or 50 lb of oil / 100 lb of OILSORB.

Proposed purchase cost of OILSORB: \$2.-/lb.

lbs of oil/million gallons = 100 x S.G. 8.33 lb/gal

=100 ppm x 1 x 8.33 lb/gal

= 833 lb of oil/million gallons of wastewater.

Using a loading rate of 0.50 lb of oil adsorbed per pound of OILSORB , resulting in a requirement of 1666 lb of OILSORB, at a total product cost of \$3,332.-. This translates into a product cost of approximately 0.0033/per gallon wastewater treated. Assuming \$0.001 for amortization of the capital costs results in a total treatment cost of about \$0.0043/per gallon of wastewater treated.

For more information visit the web site, [www.biomininc.com](http://www.biomininc.com)

George Alther, President of Biomin Inc. will provide a 3-hour workshop in conjunction with the 20th International Activated Carbon Conference (IACC-20) and courses program. For your convenience a [Registration Form](#) for the workshop on October 19, 2007 near Pittsburgh PA is provided.

To order OILSORB contact Biomin at [Biomin@aol.com](mailto:Biomin@aol.com)

George Alther, President

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