

# CHEM-BAC *Laboratories, Inc.*

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## Certificate of Analysis

Client: Greensorb  
200 S. Wacker Drive, Suite 1500  
Chicago, IL 60606  
Attn: Tom Uskup

Client Number: 9999  
Work Order: 1749-11  
Sample Date: 06-20-11  
Report Date: 06-29-11

### GreenSorb Product Study – Formaldehyde Solution Encapsulation

Chem-Bac Laboratories was requested by Mr. Tom Uskup to perform a product study on “GreenSorb”. The product study would encompass the absorbent properties of the product when subjected to different test liquids used in the medical industry. The test liquid highlighted in this report will be a dilute Formaldehyde solution known as “Formalin”.

The Formalin used for the encapsulation testing consisted of 37% Formaldehyde. The balance of the Formalin consisted of 10% methanol, used as a stabilizer, and water. This mixture ratio is commonly used as a tissue fixative in hospitals and medical institutions.

**Determination of Encapsulation Ratio:** The encapsulation ratio outlined in this section of the report will be considered the ratio of “GreenSorb” to Formalin required to pass the EPA paint filter test (Method 9095B). The ratio will initially be reported on a weight basis for both the “GreenSorb” and the Formalin. Using the density of the Formalin, a volume conversion is also included in the report.

#### *Encapsulation Data – Formalin Solution (37% Formaldehyde)*

| Weight of GreenSorb (lb) | Weight of Formalin (lb) | Weight Ratio | Time Required for Complete Absorption | Surface Condition Following Absorption |
|--------------------------|-------------------------|--------------|---------------------------------------|--|
| 2.25 lb                  | 1 lb                    | 2.25:1       | 2.5 min.                              | Clean and Dry                          |

Based on an average density of Formalin of 9.09 lb/usgal – It would require 20.4 lbs of “GreenSorb” to absorb 1 gallon of Formalin.

#### *Paint Filter Liquid Test Results – Method 9095B*

| Analysis    | Result   | Reporting Limit | Qual | Units | Batch    | Dilution Factor | Date Analyzed |
|-------------|----------|-----------------|------|-------|----------|-----------------|---------------|
| Free Liquid | Negative | 0               | --   | ml    | Formalin | --              | 6/28/11       |

**Discussion of Results:** No free liquid was observed at a ratio of 2.25 parts “GreenSorb” to 1 part Formalin.

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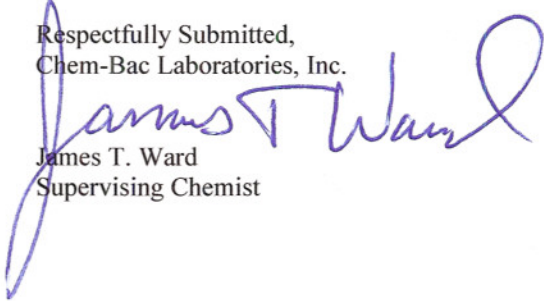
Based on literature searches only, Formalin disposal depends on the concentration of Formaldehyde in the solution, and whether or not the solution is used or unused. Solutions having a concentration of 20% or more Formaldehyde are considered to be hazardous wastes whether used or unused. Used solutions having a concentration less than 20% Formaldehyde are not considered hazardous waste. Unused solutions in which Formaldehyde is the sole active ingredient are U122 listed hazardous wastes at all concentrations.

Using the encapsulated ratio of 2.25:1, the concentration of Formaldehyde is 16% in the final waste product. If the Formalin solution is used, then according to information gathered in the literature search, the encapsulated waste product is not considered hazardous.

Chem-Bac Laboratories assumes no liability for the disposal of any wastes generated by encapsulation using GreenSorb. Those health care providers that generate waste Formalin or Formaldehyde should comply with local and federal regulations that govern the disposal of these substances. The information gathered from the literature searches listed above must be verified by the health care providers prior to disposal.

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Respectfully Submitted,  
Chem-Bac Laboratories, Inc.

  
James T. Ward  
Supervising Chemist