



Deepwater Horizon Oil Spill – A Clean-up Solution with SEBS

Surratt-Enterprise, LLC.
www.surratt-enterprise.com
816-682-9813
mel@surratt-enterprise.com

Situation



- The Deepwater Horizon oil spill in the Gulf of Mexico is the largest offshore oil spill in the history of the United States
- It is currently estimated that some 82 to 216 million gallons of crude oil have contaminated the Gulf with 1.5 to 2.5 million gallons a day still gushing from the leak
- Resulting impact on marine and wildlife habitats, as well as fishing and tourism, will likely be significant

Situation continued

- Though the type of oil is a lighter crude, the depth of the leak has created a heavier blend which does not evaporate quickly, rinse off easily, is more resistant to microbes and does not burn well





INTRODUCING SEBS

SPECIFIC ENZYME BACTERIAL SYSTEM

An introduction to SEBS

What is SEBS?

- SEBS stands for **S**pecific **E**nzyme **B**acterial **S**ystem
- SEBS incorporates specific technologies to solve numerous industrial, commercial and institutional problems which result from organic waste
- SEBS high tech culture will not harm humans, animals, fish or plants
- SEBS is composed of 100% living bacteria which reduce organic waste, eliminate odors, reduce nitrite, nitrate phosphate and hydrogen sulfide, all without creating any by-products
- Various SEBS products are used today in a number of waste treatment applications
- The bacterial systems of SEBS are highly dedicated to the development and manufacture of high quality environmentally friendly and responsible biotechnological products

Why SEBS?

- SEBS contains a customized nanotech additive that is unique within the industry
- The important thing to remember about biological products is that you are dealing with live organisms and each generation becomes less and less effective.
- As the bacteria eat & reproduce in these non-laboratory conditions, the products effectiveness decreases rapidly
- By the time the product is purchased for use, the buyer has no guarantee of any effectiveness
- E.S.T. utilizes a special process called “micro encapsulation”
- After growing bacteria in laboratory certified conditions to insure first generation potency, our process creates a protective barrier around each cell . The bacteria are neither dead or alive but rather in a state of suspended animation or “dormancy”
- When the activator “protein and folic acid balance food” is introduced, the plasmid DNA is activated and only after that the activation process begins
- This process provides a shelf life of a minimum of one year or more.

How SEBS works

- Microbial cleaning process is achieved with a two part system consisting of a liquid bacterial strain and the super activator
- They instantly come in to contact with the liquid bacterial strain
- They are awoken from the dormant state and begin to feed
- The activator provides nutrients to insure that SEBS culture begin their process of multiplication in the shortest amount of time



SEBS FAQ



- 1. What are the active ingredients?**
100% bacteria cultures.
- 2. Is the product dry or liquid?**
SEBS comes in dry and liquid form, though it typically is in the form of liquid.
- 3. How many strains of bacteria does the product have?**
SEBS has over 24 specialty selected strains. SEBS culture contains more strains of selected bacteria at higher concentrations than any other powder or liquid products on the market today.
- 4. What is the product plate count?**
Over 5 billion per mL.
- 5. Do SEBS products' contain surfactants or solvents?**
No. Surfactants and solvents breakdown grease into smaller pieces and move the problem down the line; SEBS literally eats the grease.
- 6. What is the typical daily dosage?**
Average 1/2 to 1 gallon per one million gallons of water.
- 7. What is the daily treatment cost?**
Less than 0.00015 cents per gallon of water.
- 8. How often do you have to apply it?**
Initial and maintenance dosages will vary

The SEBS Solution



SEBS Solutions

Containment Boom Clean-up

- After the boom is drained of oil, oil residue still remains
- Contractors must follow EPA regulations in the disposal of booms
- SEBS can be applied in liquid form to cleanse oil residue from the booms, allowing safe disposal
- SEBS can be also added within the boom for the initial clean-up efforts



Debris Clean-up

- After oil is skimmed from the ocean surface and remediated, dead marine life and other residue still remains
- Again, contractors must follow EPA regulations in the disposal of such residue
- SEBS can be applied to cleanse the remaining debris allowing safe disposal





SEBS can be applied in several other significant ways to the clean up process to

- Wetlands
- Marshlands
- Beaches
- even directly to the Ocean



- For land treatment
 - 1,000 gallons of ready-to-use SEBS will treat 1 square mile of contamination
- For water treatment
 - 1 gallon of ready-to-use SEBS will treat 1 cubic foot of water
 - Treatment period is 5-6 weeks

MATERIAL SAFETY DATA SHEET

SECTION 1

PRODUCT NAME OR NUMBER (As it appears on label) S.E.B.S. MICRO LIQUIDZYME	COMMON CODE N/A
MANUFACTURER'S NAME E.S.T.	EMERGENCY TELEPHONE NO. 1-800-424-9300
ADDRESS (Number, Street, City, State, and Zip Code) P.O. BOX 11232 Shawnee Mission, KS 66207	MANUFACTURER'S D-U-N-S NO. N/A
HAZARDOUS MATERIAL DESCRIPTION, Proper shipping name, Hazard class, Hazard Id No. (49 CFR 172.101) N/A	
ADDITIONAL HAZARD CLASSES (As applicable) N/A	
CHEMICAL FAMILY BACTERIAL SUSPENSION	FORMULA PROPRIETARY

SECTION II – INGREDIENTS

(List all Ingredients)

CAS REGISTRY NO.	% w	% v	Chemical Name(s)	Listed as Carcinogen in NTP, IARC, or OSHA 1910(z) (Specify)
34398-01-1	4/5		LINEAR ALCOHOL ETHOSXYLATED COMPOUND	N/E
68920-42-3	99		BACTENAL COMPLEX	N/E
9015-54-7	1		HYDROLYZED PROTEIN	N/E

SECTION III – PHYSICAL DATA

BOILING POINT ___ °F <u>100</u> °C	SPECIFIC GRAVITY (H ₂ O = 1)	1.01	-1.05
VAPOR PRESSURE ___ °F ___ °C <input type="checkbox"/> mmHg <input type="checkbox"/> pal	PERCENT VOLATILE BY VOLUME (%)	PERCENT SOLID BY WEIGHT (%)	
VAPOR DENSITY (AIR = 1)	H ₂ O	EVAPORATION RATE (Butyl Acetate = 1)	SAME AS WATER
SOLUBILITY IN WATER	99%	pH = 7.0-8.0	
APPEARANCE AND ODOR BROWN AND LITE YELLOW		IS MATERIAL LIQUID SOLID GAS PASTE POWDER	

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

FLASH POINT ___ °F ___ °C METHOD USED NOT DETERMINED	FLAMMABLE LIMITS	LEL	UEL
		NH	NH
EXTINGUISHING MEDIA NO SPECIAL REQUIREMENTS – WATER AND FOAM ARE SUITABLE			

SPECIAL FIRE FIGHTING PROCEDURES NOT A HAZARDOUS PRODUCT, THEREFORE NONE
FIRE FIGHTING PROCEDURE SUGGESTED
UNUSUAL FIRE AND EXPLOSION HAZARDS NOT PRESENT

SECTION V – HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE – Conditions to Avoid KEEP AWAY FROM OPEN WOUNDS AND CUTS	THRESHOLD LIMITS VALUE N/A PERMISSIBLE EXPOSURE LIMIT N/A
OTHER LIMIT N/A	
PRIMARY ROUTES OF ENTRY <input type="checkbox"/> Inhalation <input type="checkbox"/> Skin Contact <input type="checkbox"/> Other (specify) RINSE OFF WITH WATER AND SOAP	
EMERGENCY AND FIRST AID PROCEDURES	

SECTION VI – REACTIVITY DATA

STABILITY	UNSTABLE	CONDITIONS TO AVOID	
	STABLE	X	DO NOT MIX WITH OTHER CHEMICALS
INCOMPATIBILITY (Materials to avoid) N/A			
HAZARDOUS DECOMPOSITION PRODUCTS N/A			
HAZARDOUS POLYMERIZATION	MAY OCCUR	CONDITIONS TO AVOID	
	WILL NOT OCCUR	X	DO NOT MIX WITH OTHER CHEMICALS

SECTION VII – SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED CONTAIN THE SPILL, RECOLLECT IN SUITABLE CONTAINER FOR DISPOSAL	
WASTE DISPOSAL METHOD FOLLOW ALL FEDERAL, STATE AND GOVERNMENT REGULATIONS	
CERCLA (Superfund) REPORTABLE QUANTITY (In lbs.) N/A	
RCRA HAZARDOUS WASTE NO (NO CFR 261.33) N/A	
VOLATILE ORGANIC COMPOUND (VOC) (As packages, minus water) NOT KNOWN	
<input type="checkbox"/> Inaoredcal _____ mg / gal N/A	<input type="checkbox"/> Analytical _____ mg / gal N/A

SECTION VIII – SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type)		
VENTILATION	LOCAL EXHAUST (Specify rate) YES	Special NONE
	MECHANICAL (General) (Specify rate) YES	Other NONE
PROTECTIVE GLOVES (Specify type) RUBBER GLOVES	EYE PROTECTION (Specify type) USE CHEMICAL GOGGLES	
OTHER PROTECTIVE EQUIPMENT EYE WASH STATION		

SECTION IV – SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING STORE BETWEEN 40 °F AND 110 °F
AVOID ALL SKIN AND EYE CONTACT
OTHER PRECAUTIONS KEEP OUT OF THE REACH OF CHILDREN



Conclusion

We hope that the benefits of using the SEBS solution meets your expectations and look forward to continued efforts in combating this national environmental crisis. Thank you for your time.