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### **WHY USE OSE II INSTEAD OF COREXIT OR DISPERSANTS**

- I. Corexit is a dispersant.
- II. Dispersants generally break oil into smaller droplets and then sink the oil / hazardous material it is applied to.
  1. By breaking the oil into smaller droplets, this also spreads the spill contaminating a larger area than the initial spill itself.
  2. When using Corexit, this also means you are spreading Corexit with the oil.
  3. The oil / hazardous material then is caused to sink the oil into the water column.
    - A. To be listed on the U.S. EPA National Contingency Plan for oil spills as a dispersant, it requires that the dispersant has to sink 45% of the oil in 30 minutes.
  4. This hazardous material that is now spread out then sinks into the water column contaminating the oceans lower depths. This is creating a secondary area of contamination affecting fish, mammals or any species that survives or feeds in this area of the water under the surface.
  5. The oil then settles on the oceans' floor. Now it contaminates the ocean floor with a hazardous material affecting bottom dwelling species and potentially killing them.
  6. The sunken hazardous material then is swept along the ocean floor by underwater currents, contaminating expanding areas of the ocean floor and adversely affecting more numbers of living organisms.
  7. This movement of sunken oil then starts to roll over and this oil starts attaching itself (recombining to some extent) to each other forming tar balls. These tar balls then roll up on beaches now affecting species of

organisms that live and feed in intertidal zones. In the case of sandy beaches you then expose humans to these somewhat toxic sticky tar balls. The oil in a tar ball state would then persist for a protracted amount of time.

8. Affected species with dispersants use:
  - A. Species that live on the surface or feed on the surface of the ocean.
  - B. Species that live or swim in the water column.
  - C. Species that live on the bottom or forage for food on the ocean floor or spend some time on the ocean floor.
  - D. Species that live in intertidal zones or travel through intertidal zones.
  - E. In the case of sandy beaches, humans become exposed to this original surface spill.
  - F. Any human being that comes in contact with dispersants that contain toxic solvents.

### III. Toxicity

1. Most dispersants are a makeup of surfactants (a type of soap) and solvents. This makes the dispersant very toxic to living organisms.
2. In the case of Corexit 9527, the solvent utilized is ethylene glycol monobutylether (2 Butoxy - ethanol).
  - A. Ethylene glycol monobutylether is so toxic that overexposure to your skin may cause kidney failure and eventually death.
  - B. It is unfathomable that anyone would allow this or purposely apply this to the environment!
  - C. In the EPA's NCP Product Schedule, the toxicity data for Corexit only is:
    - (1) 9527 - Inland Silversides - LC50 14.6
    - (2) 9500 - Inland Silversides - LC50 25.2

Toxicity for Corexit's No. 2 Fuel are:

- (1) 9527 - Inland Silversides - LC50 4.49
- (2) 9500 - Inland Silversides - LC50 2.61

- D. During an oil spill in the Gulf of Mexico, Corexit was accidentally sprayed on a Coast Guard ship. As reported to us by the U.S. EPA, the Corexit droplets dissolved the paint on the Coast Guard vessel.

We can only imagine what happened to any of the personnel that came in contact with this Corexit overspray.

- E. Corexit's ethylene glycol monobutylether is a potential carcinogen. It is not listed as a carcinogen because it has never been tested for its carcinogenicity.

#### IV. Dispersant Summary

1. Using dispersants increases the areas impacted by the oil spill.
2. Using dispersants increases the toxicity of the oil spill.
3. Dispersants sink the problem into the water column, ocean floor, and beaches. They do not eliminate the problem; they simply move it.

#### V. Summary for Corexit Dispersants

The statements below are taken, (verbatim) from the *NALCO/Exxon Corexit Products Bulletin* from Corexit Dispersants "Material Safety Data Sheets" (MSDS).

These adverse effects to humans and the hazardous handling warnings described are NALCO/Exxon's own statements taken from the above publication.

- A. Corexit 9500, 9527 and 9580
  1. *"Caution: If unconscious, having trouble breathing, or in convulsions, do not induce vomiting."*
- B. OSHA statements about Corexit 9500, 9527 and 9580, are quote *"Based on our hazard evaluation, the following ingredients in this product are hazardous:"*
  1. "Corexit 9500: Hydrotreated lite distillate - is a skin irritant, and TWA is 5 mg/m<sup>3</sup> ACG1H/TLV"
  2. "Corexit 9527: 2-butoxyethanol is an irritant, systemic effects, combustible"

3. "Corexit 9580: Hydrotreated lite distillate - is a skin irritant, and TWA is 5 mg/m<sup>3</sup> ACG1H/TLV, STEL 10 mg/m<sup>3</sup> OSHA/PEL"
4. "Corexit 9500 - immediate (acute) health hazard"  
 "Corexit 9527 - immediate health hazard, chronic health hazard, and a fire hazard"  
 "Corexit 9580 - immediate health hazard and a fire hazard"

C. International Regulation:

"This is a WHMIS controlled product from the ingredients disclosure list or has been evaluated based on its toxicological properties, to contain the following hazardous ingredients:"

- "9500 - hydrotreated light distillate"
- "9527 - 2-butoxyethanol"
- "9580 - hydrotreated light distillate"

D. Questions and Answers

(These statements are, again, taken from the *NALCO/Exxon Product Bulletin*).

*"A committee of scientists for the National Research Council concluded in a 1989 report that the overall impact of spilled oil is likely to be reduced by dispersion!"*

This statement "*that the overall impact is likely to be reduced by dispersion,*" is the only scientific data presented by Exxon. "Likely" does not mean it will "absolutely" lessen the impact.

We have been unable to find any scientifically valid tests to prove this. Common sense will tell you that when you add an extremely toxic non-aromatic hydrocarbon to a spill you are increasing or adding to the impact of the spill.

Where is the scientifically valid data supporting Exxon's following claim (See 2 below):

1. When describing these dispersants, Exxon very carefully did not mention the extreme toxicity of the non-aromatic solvents that are a significant part of the chemical makeup of the dispersant.
2. "*Once dispersed as fine droplets, the oil is readily biodegraded by micro organisms in the sea.*"

**OSEI Corporation Comment:**

Common sense should convince anyone that adding the toxic non-aromatic hydrocarbons found in Corexit's products to an oil spill would actually prevent and delay any biodegradation of the oil.

(If Corexit is lethal to humans, single cell organisms have no chance to use it as a food source.)

3. *"Dispersing the oil into the upper three meters of the water column keeps the oil from impacting the shoreline."*

**OSEI Corporation Comment:**

This is a misleading statement suggesting that the oil somehow remains "levitating" in the upper 3 meters of the water columns!

Once the oil is dispersed and begins to sink, there is nothing to "magically" hold the oil in the upper three meters. These toxic oil droplets descend to the ocean floor adversely impacting everything in their path.

The end results could be tar balls that so readily cover Gulf Coast beaches.

Exxon claims that *"this process results in a net environmental benefit."*

**OSEI Corporation Comment:**

We do not agree with this claim since their toxic dispersant is spreading the now very toxic oil which can cause adverse impact on all areas of the ecosystem.

4. *"When properly used, Corexit products are of very low toxicity to marine life and humans."*

**OSEI Corporation Comment:**

See Section III - 2 - C on Toxicity. With toxicity values of 4.49 and 2.61 with No. 2 fuel oil, it is hard to comprehend their claim of low toxicity to marine life and humans!

VI. Why you should use OSE II

1. OSE II rapidly emulsifies and solubilizes the spill (detoxifies it) while reducing it as a fire hazard and lessens the spill's toxic impact immediately.
2. Once emulsification and solubilization are complete, the oil will not adhere to birds, mammals, any species, wood, metal, sand, soil, rocks, ships or humans.

3. OSE II has all the constituents to rapidly grow bacteria and carry out all metabolic processes so the oil is rapidly converted to harmless CO<sub>2</sub> and water.
4. OSE II causes the oil to float so only the surface is impacted by the spill (which the spill impacted anyway). Thus, there is no secondary impact to the water column, no impacting of the ocean floor, or impacting of intertidal zones.
5. An associate of OSEI Corporation drank 2 ounces of OSE II on a Houston, Texas television station to prove it is non-toxic.
6. Toxicity tests on Mysids when performed by the U.S. EPA proved OSE II to be virtually non-toxic.
7. OSE II solves (remediates) the spill in place. It does not move the problem to another area. (OSE II emulates mother nature exactly).

**OSEI Corporation Comments:**

We find it difficult to understand why anyone would use dispersants on oil spills when there is a safer, more effective product available.

We find it even more difficult to understand why anyone would use Corexit Dispersants due to their hazardous, toxic and life threatening ingredients as indicated in their own publication.

Based on the adverse characteristics and hazards associated with dispersants, using OSE II is the clear choice for hazardous spill cleanup.



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SRP/eem