

Chemical Composition

De-Solv-it solvent is a technical grade mineral oil and orange oil mixture. The surface active agents and solvents added are confidential. Chemical analysis of the product for purgable halocarbons contaminants and trace metals (CORE LABORATORIES, USA) have shown that De-Solv-it solvent contains negligible concentrations of these compounds.

Toxicity of De-Solv-it

Toxicity testing of De-Solv-it has been carried out by several laboratories using Fundulus heteroclitus, rat, rabbits, muscle tissue and brown shrimp. The results of these tests as shown by the document presented to KFUPM/RI support the non-toxicity of the product. It causes no irritation to eyes while the a low skin irritation index of 0.2 was reported.

The Ministry of Agriculture, Fisheries and Food in UK has tested the product for toxicity and found it to be satisfactory at the specified application rate. The product has also been tested by the Warren Spring laboratory of the Department of Trade and Industry (UK) for efficiency and safety in use, and similarly found to be satisfactory.

De-Solv-it is listed in the National Contingency Plan (NCP) by the US EPA under dispersants. However, "the listing of the product in the NCP product schedule does not constitute approval, certification, authorization, licensing or promotion of the product; nor does it imply compliance with any criteria or minimum standards for such agent" (USEPA letter to Orange-Sol Inc. Jun 26, 1989). However, USEPA has stated in their letter that "the On-seen coordinator may authorize the use of the dispersing agent on release of oil into navigable waters on a case-by-case basis".

Previous Experience in using De-Solv-it

- Effectively used for cleaning spillage of Kuwaiti crude oil at Tranmere Terminal (UK).
- Used during the Exxon Valdez oil spill to clean fishing vessel decks, holds, nets etc.
- Several oil companies have recommended the use of De-Solv-it and other similar products for oil cleaning purposes. These companies include Exxon, Total, Brent, Delta, OIS and VECO.

REFERENCES

The following documentation for the De-Solv-it were submitted to KFUPM/RI for review:

- 1- Letter from MARTECH to Dr. Nizar Tawfiq dated February 26, 1991 requesting the use of De-Solv-it.
- 2- Gulf oil cleanup solution, Orange-Sol, February, 1991.
- 3- A material safety data sheet for De-Solv-it prepared by Orange-Sol, Inc.
- 4- Approval of the Ministry of Agriculture, Fisheries and Food in UK for the use of the De-Solv-it on the surface of the sea and as beach cleaner.
- 6- USEPA letter indicating the listing of De-Solv-it on the National Contingency Plan (NCP).
- 7- Results of aquatic toxicity tests of De-Solv-it to Brown Shrimp and *Fundulus heteroclitus*.
- 8- Report on results of the chemical analysis carried out on De-Solv-it with respect to purgable hydrocarbons and trace metals.
- 9- Report on results of the eye irritation test carried out on De-Solv-it.
- 10- Report on results of the skin irritation test carried out on De-Solv-it.
- 11- Report on results of the oral toxicity test on rats carried out on ADL-1 water soluble citrus solvent.
- 12- Reports on the results of the chemical analysis carried out on De-Solv-it with respect to pH, flash point and corrosiveness.

13- Report on results of the seawater saturation with total oil hydrocarbons carried out on De-Solv-it.

14- Report on results of evaluation of the effect of Orange-Sol on Muscle Tissue.

15- Findings and recommendation of using De-Solv-it and other similar products by several oil companies.