

SorbaSolv™ Bioremediation Matrix

SorbaSolv™ is a patented (US # 4780518) recycled cellulose based oil absorbent that has been found to act as an agglomerating matrix for water insoluble organics that are to be treated with biological agents. SorbaSolv™ contains no toxic, carcinogenic or biologically hazardous materials. SorbaSolv™ is the reaction product of ground newsprint, USP zinc oxide, USP stearic acid and ammonium hydroxide. In appearance, SorbaSolv™ is a light gray fiber. With both floating spills on water and spills on soil, SorbaSolv™ absorbs oil, greases and other water insoluble organics into a thick mass decreasing its mobility manifold. In the case of water spills, the oil/SorbaSolv™ mix is thick enough to be picked up by pitchfork. With soil spills, the oil/SorbaSolv™ mix can be floatated out easily.

It was noted on several field uses, that oil saturated beaches treated with SorbaSolv™ fibers cleaned up many times faster than untreated sections. The SorbaSolv™ fiber had been sprayed at low tide using snow blowers, cellulose insulation machines and lawn vacuums onto the oil contaminated areas. The same effect was noted on a site of leaking underground fuel tanks. SorbaSolv™ had been tilled into the soil to immobilize the spill. Tests were made after a 3-month period while waiting for approval and showed that the oil content in the soil was 50% less than the original. The most likely explanation was the biodegradation by natural soil organisms assisted by the SorbaSolv™. SorbaSolv™ has an indefinite shelf life and is packed in ten pound 2 cubic foot bags and 40 cubic foot tote bags.

Laboratory tests on SorbaSolv™ with Daphnia and brine shrimp showed no growth inhibition over several months on contact time. Additionally field use of SorbaSolv™ as a preventive agent on fresh water ponds containing bass, pike, and muskie showed no ill effect over a years period. Respirometer tests using Osprey Biotechnics Munox 712 on a 10% oil/grease water showed 5 times the oxygen consumption during the first 20 hours for the oil/SorbaSolv™ mix alone. After 20 hours, the oxygen consumption of both mixes remained relatively the same. SorbaSolv™ alone biodegraded at a much slower rate than oil or oil/SorbaSolv™ mix. This would indicate that SorbaSolv™ would remain as an agglomerent until all the oil was biodegraded. In field use, SorbaSolv™ may be used first to collect floating oil or soil-entrapped oil prior to biological addition or mixed with bacteria, nutrients and other desire elements for application at the same time. A critical biomass would be maintained until all the organic is biodegraded.