

Imbiber Beads®
Technical Bulletin
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Reference: Harvesting an Oil Spill - Imbiber Beads® vs. Polypropylene

One of the advantages of broadcasting bulk Imbiber Beads® onto an oil spill, aside from keeping the slick from spreading, is the ability to **harvest** the blocks of congealed oil and reclaim the oil through refinery process, effectively closing **the environmental loop**.

In order to do this it is necessary to drop the blocks of “imbibed” oil into excess oil (most refineries have an abundance of excess oil). Once in the “excess” oil, Imbiber Beads® will separate from their cohesive mass. They will remain swollen but because they lose an amount of their rigidity during the imbibition process, they become more malleable, allowing them to flow through pipes, gear pumps, and orifice plates, without the fear of blockages occurring en route to the catalytic cracker.

Imbiber Beads® do not melt (their flashpoint is 235°C - 485°F) and as a result do not change the viscosity of the liquid. By “**thermally cracking**” Imbiber Beads® down to their basic components of water, carbon and hydrogen, only the “recovered oil” remains, which will have a slightly higher aromatic content due to some of the monomers used in the polymer mix.

The problem with attempting to recover oil from “fiber” sorbents such as polyethylene or polypropylene, is that must also be “thermally cracked”. These products will melt before they “crack”, which increases the viscosity of the oil/sorbent mix. Polypropylene has a melt temperature of 165°C (325°F) and polyethylene is 115 - 135°C (240 - 275°F). This increase in viscosity creates problems inherent with the transfer of heat evenly throughout the oil/polymix. Burning (carbonization) may occur along the walls of the transfer pipe, which could effectively insulate the material in the center of the pipe. This further compounds the heat transfer problem and pipes can actually be “burned out”.

These problems will not occur when thermally cracking Imbiber Beads®, and the oil can be reclaimed.

(Imbiber Beads® is the Registered Trademark of Imbibitive Technologies Corporation)