

PRISTINE SEA I

All nations depend on petroleum as a primary source of fuel for transportation and industry. Today's demands require the transport of vast quantities of crude oil through open water and ice-choked waterways. While only one percent of the annual amount is spilled, this results in two billion gallons of oil entering ocean and coastal waters each year. Oils spilled in the marine environment are a hazard to birds, marine life, and the coastal line. The quicker the response, the less the environmental impact will be.



Marine System has turned the page in oil spill technology. A total system approach provided industry with products proven in the scientific laboratories of Lockheed Missile & Space Company, Louisiana State University, Technical Research Center of Finland, and the Murmansk Marine Biological Institute of Russia. Our products and dispersal equipment have been proven in field trials and are now "Off-The-Shelf" technology.

The System

Marine Systems' spill technology is designed to treat an oil spill at first detection. This approach allows treatment as the oil is being spilled, on thin oil films, and application in shallow water or remote areas where mechanical recovery and cleanup crews cannot be deployed. The system consists of self-contained dispersal equipment and the Pristine Sea product.

The ability to disperse product from a ship or facility without putting personnel in the water is a key feature of this technology. Response activity can safely begin immediately on recognition of a spill regardless of light, weather or ship speed.

The Product

Pristine Sea product is a technology for open water oil spills classified as a sorbent by the United States Environmental Protection Agency.

The Pristine Sea product is a unique patented material which chemically attaches to the oil to form semi-solid cakes. The resulting oil cakes will remain afloat indefinitely. The oil cake can be mechanically removed or treated with microbes for natural reduction by bioremediation.



Photograph of "oil cakes" taken 24 hours after application of Pristine Sea on an oil slick...

Laboratory tests in microcosms and wave tank tests in the United States, Finland, and Russia have verified the safety and efficiency of the Pristine Sea product. Field trials under controlled conditions have confirmed laboratory results.

The Equipment



Pristine Sea technology is proven in the field.

The equipment is a self-contained mechanism for dispersal of biosorbents and sorbents in combating spills in the marine environment. It is designed to allow permanent installation on vessels, piers, or offshore facilities. The design also allows temporary installation on vessels of opportunity or trucks for treating shorelines, and for transport to the spill site by helicopter.

Permanent installation on oil tankers and offshore facilities allows the treatment of a spill to start within seconds of spill detection. The “harbor” unit fits in the baggage compartment of airliners so there is no delay for special cargo aircraft. The design is human engineered to safely allow product replenishment during dispersal operations. Dispersal application has been demonstrated in wind conditions through Force 4.

Application

Application of our product in the treatment of large or small spills may be accomplished with most any type air blower, (large or handheld). Considering the spill to be that of a heavy or light oil, it is suggested an application of one to two pounds of Pristine Sea product be applied for each gallon of oil spilled.

Reasons to consider Pristine Sea products:

- Upon bonding of the clay and oil, the captured oil will not leach into the water column, thereby preventing harm to the aquatic life.
- Density of the bonded oil is less than that of water, thereby allowing the oil to float until recovery or biodegradation.
- The treated oil can be recovered without the water, thereby reducing the recovery cost of the oil.
- **Pristine Sea** products contain no toxic materials, dispersants or surfactants.
- **Pristine Sea** products performance has been tested and proven successful in water temperatures ranging from 0°C to 37°C and may be used regardless of light and weather.
- **Pristine Sea** was designed for a quick response for small spills associated with offshore platforms, pipelines, terminals, ports, and harbors.

* In those areas of shoreline that could become contaminated and are unsafe for work boats and their crews, or a marshland that would be too costly to clean up, you have the capability to treat the spill by adding our **Pristine Sea II** product which increases the oil degrading ability with biosorbents for a natural reduction that has been tested and proven.