

Hydrocarbon Spill Response Product 100% Natural, Biodegradable and Nontoxic

THE CONTAINMENT AND REMEDIATION ANSWER TO OIL SPILLS NATURALLY





PRIMO ENERGY INTERNATIONAL, INC.

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A Leader in Bioremediation & Spill Response for Oil, Fuel and other Hydrocarbon Spills Cleanup **NASA Discovered and the Environment Benefits**



Well Boom will facilitate testing in groundwater monitoring wells, absorbing contaminants in the well, and prevent hydrocarbons from leaching. **PRP Powder** encapsulates hydrocarbons, forming a physical matrix of land & water, allowing remediation to take place



Oil Buster is a combination of PRP with different grades of ground corncob or other sorbent ingredients for use on hard surfaces.



Bio-Boom will contain oil & fuel spills on & around water & land, biodegrade the contaminant, & then naturally bioremediate itself.



Bio-Sok captures & biodegrades oil & fuel which leaks into a boat bilge, avoid accidentally pumping of oil, fuel over board & stormwater.





PRP® WELL BOOM

FOR USE IN GROUNDWATER MONITORING WELLS* Absorbs oil on contact!

UniRemInc's **WellBoom** is designed to facilitate testing in groundwater monitoring wells and is much less costly than traditional methods.

When installed, it submerges about 50% and adjusts to changing water levels. It remains bouyant until depleted.

Not only will the **WellBoom** absorb "free product" on contact, it won't allow "leaching". It then promotes the rapid bio-degradation of the absorbed, groundwater-contaminating hydrocarbons!

The **WellBoom's** most optimal performance will occur when the water temperature is in a range of 35 - 95 degrees Farenheit.

Simple to install, simple to maintain with no costly disposal of messy, smelly, oil-soaked material required when **WellBoom** is done. Simply throw the boom casing in the trash!

* For use in groundwater monitoring wells (accomodates pipe sizes 2" to 8" in diameter).





PRP[®]

Hydrocarbon Spill Response Product

PRP[®] SPECIFICATIONS

BULK BIO-SOK® BIO-BOOM® 50 lb. drums

8 oz. per SOK

12 oz. per ft.

Do Not use this product with any other bilge cleaners or detergents as they prevent the oil/fuel from being absorbed

DIRECTIONS FOR USE:

BULK

Apply dry by hand or dispense by agitation in water using a hydroseeder fire cannon or other venturi apparatus. An application ratio of 1:2 by weight of PRP to oil is recommended for control and containment of the spill

B10-S0K®

After removing the Sok from the plastic bag, tie it securely with the cord provided to a fixture in the bilge of the boat. Be certain to place the Sok where it will not get caught up in moveable parts. Then drop it into the water in the bilge tank where it will float, absorbing and biodegrading the leaking oil/fuel.

BI0-B00M®

Remove plastic sleeve, position BioBoom®, and tie securely with the cords on each end. Do not stretch tightly. Leave some slack. Should the area exceed the length of a single BioBoom®, link as follows: Lay the BioBoom® end to end, overlapping so that the end of each boom is adjacent to the loop of the other boom (8" from end). Draw cord around opposite boom and tie to loop. Attach both overlapping ends. BioBooms® must fit together snugly. Avoid indenting boom with cord. Ingredients are 100% natural, nonhazardous, nontoxic and biodegradable

 Naturally occurring microorganisms Nutrients and micronutrients which are required for metabolic activity of microorganisms



This product does not contain any ingredient which is subject to the reporting requirements of Section 313 of SARA and its regulations or any component identified as hazardous under 40 CFR 261.24.

LIMITED WARRANTY: Seller warrants that the goods will, assuming proper application, enhance and stimulate the biodegradation of certain hydrocarbons. Seller expressly limits its obligation and liability under this limited warranty to either, at Seller's option, replacement of the defective goods or granting Buyer credit in the amount paid for the defective goods. If requested by Seller, goods for which a warranty claim is made will be returned to Seller, transportation prepaid. SELLER EXPRESSLY LIMITS ITS WARRANTY TO THE TERMS SET FORTH ABOVE AND HEREBY EXCLUDES ALL OTHER WARRANTIES EXPRESS OR IMPLIED, IN PARTICULAR EXCLUDING ANY AND ALL WARRANTIES OF MERCHANTABILITY AND WARRANTIES OF FITNESS FOR ANY PARTICULAR PURPOSE. SELLER LIKEWISE LIMITS THE REMEDIES AVAILABLE TO THOSE SET FORTH IN THIS LIMITED WARRANTY. IN NO EVENT SHALL SELLER BE RESPONSIBLE FOR ANY LOSS OF INCOME, LOSS OF PROFITS OR ANY OTHER FORM OF CONSEQUENTIAL OR INDIRECT DAMAGES WHATSOEVER.

PRP®

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PRP For Containment



BIO-BOOM[®] has many applications for use in marinas, drainage ditches, holding ponds and lagoons. Because it biodegrades as well as contains the contaminant, **BIO-BOOM[®]** is an indispensable tool to help keep the environment clean.



PRP For Bilge Maintenance



BIO-SOK[®] Bilge Maintenance System is an environmentally sound way to keep marina waters free of bilge oil. Placed inside the bilge, the **BIO-SOK**[®] begins to absorb leaking oil, and the natural microorganisms start immediately to eat and biodegrade that oil. Universal Remediation, Inc. manufactures and internationally markets unique oil biodegrading products and support services that provide our customers an easy, one step method of cleaning up hydrocarbon spills, returning the site to its original state.



PRP: The Proven Solution for Cleaning Up Oil Spills Environmental and Agricultural Resources

Originating Technology/NASA Contribution

The Exxon Valdez, an oil tanker exporting millions of gallons of oil, ran aground just after midnight on March 24, 1989 in Alaska, creating what is, to this day, the worst environmental disaster in American history. The affected area of coastal Alaska continues to feel the toxic results of that disaster that killed more than 250,000 seabirds, thousands of marine mammals, and countless numbers of other coastal marine organisms in just its first months. Oil is notoriously difficult to clean from water, and it is still emerging from subsurface reservoirs. Salmon caught in that region are, even now, 16 years later, showing signs of long-term contamination from the devastating oil spill.

The BioSok Bilge Maintenance System is an easy-to-use "sock" (approximately 3 by 10 inches) that captures and biodegrades the oil and fuel that leaks into a boat bilge and can be accidentally pumped overboard. While disasters of this magnitude happen rarely, with large spills making up less than 5 percent of the oil spilled into water each year, tens of thousands of smaller oil spills are occurring all around the world. Oil enters the water supply from road runoff; refuse from routine engine maintenance; emptying of boat wastewater and other ship operations; air pollution that settles into bodies of water after rains; and through offshore oil production, which can cause ocean oil pollution from spills, leaks, and routine, operational discharges.

Water can, thankfully, be cleaned or remediated and made safe again for drinking, swimming, fishing, and boating, a task made significantly easier if the oil is caught before it has the chance to settle into the depths. A product using NASA technology is available to consumers and industry that enables them to safely and permanently clean petroleum-based pollutants from the water. It is almost alchemical in its perfection, as it is comprised of beeswax microcapsules that act as a food source that stimulates the indigenous microbes to consume the oil.

The product makes use of NASA microencapsulation technology. Work was done at the Jet Propulsion Laboratory (JPL) to demonstrate the feasibility of encapsulating live cells, while technology developed at the Marshall Space Flight Center for experiments in orbital production of microspheres provides the basic design of the delivery system.

Partnership

Industry scientists worked with researchers at JPL and Marshall in the early 1990s to develop the microencapsulated wonder, PRP, or Petroleum Remediation Product, for the company Petrol Rem, Inc. In 2004, Universal Remediation, Inc. (UniRemInc), of Pittsburgh, purchased the assets of Petrol Rem, Inc., and has rapidly expanded the uses of the original microencapsulating technology. UniRemInc has broadened production and availability of PRP, making it accessible to more clients and in a variety of different forms.

Product Outcome

The basic technology behind PRP is thousands of microcapsules—tiny balls of beeswax with hollow centers. Water cannot penetrate the microcapsule's cell, but oil is absorbed right into the beeswax spheres as they float on the water's surface. This way, the contaminants—chemical compounds that originally come from crude oil such as fuels, motor oils, or petroleum hydrocarbons—are caught before they settle.

PRP works well as a loose powder for cleaning up contaminants in lakes and other ecologically fragile areas. The powder can be spread over a contaminated body of water or soil, and it will absorb contaminants, contain them in isolation, and dispose of them safely. In water, it is important that PRP floats and keeps the oil on the surface, because, even if oil exposure is not immediately lethal, it can cause long-term harm if allowed to settle. Bottom-dwelling fish exposed to compounds released after oil spills may develop liver disease, in addition to reproductive and growth problems. This use of PRP is especially effective for environmental cleanup in sensitive areas like coral reefs and mangroves.

This ecological wonder has also been packaged for specific uses by UniRemInc to create a variety of different commercial products, including the BioSok Bilge Maintenance System, the BioBoom, the WellBoom, and OilBuster.

One of the most popular uses for PRP is the BioSok Bilge Maintenance System. It allows boaters to clean up small spills. Boats take on water, either from rain, washing, or waves splashing over the sides. This water often mixes with cleaning fluids, and oil and gas from a boat's motor. The water collects in a bilge, the area inside a boat's bottom designed to collect and hold the errant water. A bilge needs to be pumped overboard regularly to prevent the boat from taking on too much water. This bilge water, though, is often contaminated.

The BioSok is a small, 3- by 10-inch "sock" with PRP encased in polypropylene that floats in the bilge, absorbing and bioremediating any hydrocarbons, thus, decontaminating the water. Each BioSok can immediately absorb twice its weight and can degrade more than 20 times its weight in oil over time. One BioSok will generally last for an entire boating season. It requires no maintenance or monitoring, and it safely eliminates the pollutants and fumes associated with spilled oil and gasoline.

The U.S. Coast Guard is always on the prowl for any boaters who expel oil-contaminated water from their bilges. Fines are often thousands of dollars, which makes sense, knowing that every year bilge cleaning and other ship operations release millions of gallons of oil into navigable waters from thousands of discharges of just a few gallons each. The BioSok is such an effective antidote to polluted bilge water, that even the Coast Guard has used it on its boats.

PRP Powder is especially well-adapted for moderate-to-small spills in areas such as industrial plant settings (cooling ponds and tanks), shorelines (whether rocky or sandy), marinas, railroad tracks, oil wells and fields, maintenance facilities, truck roll-overs, and for marsh and wetlands remediation where it can mitigate the collateral damage to the ecosystem caused by cleanup crews.

UniRemInc also manufactures the BioBoom, essentially a longer BioSok that can be used to enclose larger oil spills. It is especially effective for emergency containment of spilled oil in large areas, like in marinas, ponds, lakes, or open waters; but can also be effective in tanks, storm runoff systems, electrical utility vaults, and anywhere that requires the containment, absorption, and biodegredation of leaking petroleum hydrocarbons. The BioBoom acts as a perimeter around spills and prevents them from spreading. The snake-like tube is 3 inches in diameter and can be produced at any length up to 10 feet.

The WellBoom facilitates groundwater monitoring by absorbing floating petroleum more effectively and less expensively than traditional bailing methods. UniRemInc makes the standard WellBoom by filling a weighted polypropylene sock, 36 inches long and up to 3 inches in diameter, with PRP. The product is then lowered into the groundwater monitoring wells where it absorbs and accelerates the biodegradation of any floating petroleum hydrocarbon contaminants. WellBoom is typically used at petroleum storage facilities, gasoline stations, and other locations where there is a potential for groundwater contamination.

OilBuster is yet another product using PRP that UniRemInc has developed. It is the beeswax PRP mixed with several grades of ground corncob and is for use on land or hard surfaces where no natural microbial population is present. It is ideal for cleaning oil spills that have not yet reached the water and that hopefully never will.

PRP has proven effective in facilities conducting railroad repair, where ballasts, ties, and the ground can be saturated with diesel fuel and oil. It is a safe, cost- effective way for these types of contaminated facilities to get quick results that restore the environment and help them avoid the steep U.S. Environmental Protection Agency fines.

UniRemInc is continuing to find uses for this amazing bioremediation technology and to supply consumers and industry with safe, natural, and effective ways to keep oil out of our water.





57 **The Proven Solution**

for Cleaning Up Oil Spills

Space Technology Hall of Fame®

Improving Life on Earth



Space Technology Offers Surprising Solution to Oil Spills

The Space Foundation is pleased to announce Universal Remediation Inc. (UniRem) as a new Certified Space Technology. The Space Certification program was created by the Space Foundation, in cooperation with NASA, to raise awareness and understanding about the significant and practical benefits of technologies originally developed for the space program, that have been adapted into products and services improving life on Earth.

Oil spills and leaks of all kinds threaten water resources around the world. UniRem, located in Pittsburg, has developed unique, hydrocarbon remediation tools using its Petroleum Remediation Product (PRP) that can be spread on water or soil to absorb, contain, and safely dispose of hydrocarbon pollutants. Essentially highly absorbent hollow spheres of beeswax, PRP immediately binds with hydrocarbons and provides nutrients to naturally occurring microbes. The feeding microbes then create enzymes that biodegrade contaminants.

The basic delivery system grew out of NASA biological encapsulation research and the orbital production of microspheres so uniformly precise they provide calibration standards for scientific and industrial equipment. Industry scientists worked with NASA's Jet Propulsion Laboratory and Marshall Space Flight Center to develop PRP. PRP was inducted into the Space Technology Hall of Fame in a ceremony during the 24th National Space Symposium earlier this year.

"The Space Foundation is pleased to welcome UniRem as a Certified Space Technology," said Kevin Cook, director of Space Technology Awareness for the Space Foundation. "It is nice to know that UniRem's application of cutting edge space technology is at work keeping our home planet healthy."

In 2004, UniRem commercialized this space technology by developing products including the BioSok Bilge Maintenance System, the BioBoom, the WellBoom, and OilBuster to treat contaminants in a wide variety of situations.

For more information about UniRem and other space technologies that improve life here on Earth, visit the Space Certification Program online at <u>www.SpaceConnection.org</u>.

About the Space Foundation

Founded in 1983 and celebrating its 25th anniversary this year, the Space Foundation is an international nonprofit organization advancing space-related endeavors to inspire, enable, and propel humanity. A leader in space awareness activities, major industry events, and educational enterprises that bring space in to the classroom, the Space Foundation is headquartered in Colorado Springs, Colo. It conducts research and analysis and government affairs activities from its Washington, D.C., office, and has field representatives in Houston, Texas, and Cape Canaveral, Fla. The Space Foundation also conducts the National Space Symposium, the premier gathering of the global space community. The 25th National Space Symposium will take place March 30 -- April 2, 2009, at The Broadmoor Hotel in Colorado Springs. For more information, visit www.SpaceFoundation.org-





Visit SpaceTechHallofFame.org where we pay tribute

to dozens of outstanding technologies and hundreds

of individuals and organizations.

PRP Hydrocarbon Spill Response Product

PRP[®] can be applied to most tracts of land and clings to most surfaces. It is effective in fresh and salt water to control the spreading of oil spills in a one step application. It significantly enhances the biodegradation of the spill. The product then ultimately biodegrades itself.



Because it will not sink and repels water even after oil absorption, the benefits of PRP® application are significant:

Rapid clean-up is facilitated.

Hard to reach areas such as sensitive marshlands can be treated remotely. If left in place, the PRP® and oil will biodegrade, minimizing any toxic effects of the oil.

PRP® reduces potential for the coating of mammals, wildlife, and plants which typically results in severe damage.

Damage to beaches is minimized because the contamination is prevented from getting below the surface.

If removal of the PRP/oil matrix is preferred, total recovered volumes are minimal, unlike vacuum systems which generate large volumes of contaminated water and minimal amounts of oil. The recovered matrix can then be landformed and bioremediated.

Apply PRP[®] on transfer areas, marshlands, drainage ditches, wetlands, holding ponds, lagoons, shores, marinas, and harbors. Reduce disposal costs of oil contaminated water at industrial sites or spill clean-up operations by using PRP[®] to separate the oil from the water.



Hydrocarbon Spill Response Product

These charts represent data from PRP® diesel fuel spill field test overseen and evaluated by National Environmental Technology Application Corporation (NETAC).



OIL BUSTERTM For Hard Surfaces

The Green Solution for Hydrocarbon Spills

Oil Buster absorbs and biodegrades oil safely and naturally. Be proactive! Apply **Oil Buster** to eliminate oil and other hydrocarbon spills and do your part to *"Act for the Future"*.

Applications

- Home Garages
- Machine/Auto Repair Shops
- Industrial Facilities
- Truck Depots

- Rail Yards
- Road Spills
- Gas Stations
- Maintenance
- Any place spills occur on hard surfaces
- Will not remove "OLD" oil stains



Don't throw oil away in the garbage and allow it to harm the environment!

OIL BUSTER[™] Environmental Solutions





The Space Foundation of Colorado Springs, CO. announced that Universal Remediation, Inc. (Unirem) is a new Certified Space Technology Company.





Reduction of 71% of the oil in the first week and 86% of the oil in 4 weeks.

How to use:

- 1. Completely cover the spill with Oil Buster.
- 2 When absorbed (time varies according to size), sweep up spill.
- If desired, biodegrade absorbed spill in a moist, warm environment.
- If not completed biodegrading, dispose of in accordance with federal, state and local regulations.

Ingredients: Corncob Fractions/Powdered Beeswax are 100% natural, biodegradable and nontoxic nutrients and micronutrients which are required for metabolic activity of microorganisms found naturally in the environment.

Oil Buster Packaging

Product	Size	No./Box
Shaker Container	6 oz.	24 per Box
Bag/Box 15x15x12	25 lb.	Each
Bag/Box 15x23x12	50 lb.	Each

Be Green, Be Aware.

Oil Buster is non-hazardous and safe for the home and workplace. This product does not contain any ingredients which are subject to the reporting requirements of Section 313 of SARA and its regulations or any component identified as hazardous under 40 CFR 261.24.

LIMITED WARRANTY: Seller warrants the goods will, assuming proper application, enhance and stimulate the biodegradation of certain hydrocarbons. Seller expressly limit its obligation and liability under this limited warranty to either, at Seller's option, replacement of defective goods or granting Buyer credit in the amount paid for the defective goods. If requested by Seller, goods for which a warranty claim is made will be returned to Seller, transportation prepaid. SELLER EXPRESSLY LIMITS ITS WARRANTY TO THE TERMS SET FORTH ABOVE AND HEREBY EXCLUDES ALL OTHER WARRANTIES EXPRESS OR IMPLIED, IN PARTICULAR EXCLUDING ANY AND ALL WARRANTIES OF MERCHANTABILITY AND WARRANTIES OF FITNESS FOR ANY PARTICULAR PURPOSE. SELLER LIKEWISE LIMITS THE REMEDIES AVAILABLE TO THOSE SET FORTH IN THIS LIMITED WARRANTY. IN NO EVENT SHALL SELLER BE RESPONSIBLE FOR ANY LOSS OF INCOME, LOSS OF PROFITS OR ANY OTHER FORM OF CONSEQUENTIAL OR INDIRECT DAMAGES WHATSOEVER.



BIOBOOM'. THE CONTAINMENT AND REMEDIATION ANSWER TO OIL SPILLS



OIL SPILL CONTAINMENT ... NATURALLY

BioBooms[®] contain a spreading spill while the PRP[®] inside consumes the pollution, eliminating it safely and cleanly. Whether the spill is in open water, marinas, holding ponds or lagoons, BioBooms hold the spill in place while the PRP works. When the oil is gone, the PRP degrades itself. There's no toxic waste requiring tedious expensive disposal.

Custom made in lengths up to 10 feet and three inches in diameter, each BioBoom contains eight pounds of PRP. When the PRP comes in contact with oil, it immediately absorbs up to twice its weight in contaminant and it degrades much more oil over time.

When the BioBoom becomes saturated with oil, simply leave it in place until the PRP degrades the oil and then itself. Then throw away the empty sleeve in accordance with local, state and federal regulations. It's quick, clean and easy.

THE COMPLETE OIL SPILL REMEDIATION SYSTEM

The PRP in a BioBoom consists of tiny spheres of treated wax, which contain nutrients. When a wax sphere comes in contact with spilled oil, it binds with the hydrocarbons. Nutrients in the sphere help microorganisms from the immediate environment flourish until they eat every droplet of oil.

PRP is also available as a loose powder for open water spills and in BioSoks[®] for boat bilges.

BIOBOOMS":

BIOBOOMS CAN BE CUSTOM MADE UP TO 10 FEET IN LENGTH

CAN IMMEDIATELY ABSORB 16 POUNDS OF CONTAMINANTS, AND IT CAN DEGRADE MUCH MORE OVER TIME

PERFECT FOR MARI-NAS, LAGOONS AND HOLDING PONDS

100% NATURAL, BIODEGRADABLE AND NONTOXIG





Bio-Sok... The Revolutionary Way to Effectively Eliminate Bilge Oil



Bio-Sok is easy to use.

Just put Bio-Sok into your bilge at the beginning of the season, and that's it. Bio-Sok works day in, day out - continually absorbing and breaking down any spilled or leaking bilge oil.

Bio-Sok is environment friendly.

Bio-Sok is specially designed to not only absorb the oil, but biodegrades it as well. The indigenous microorganisms biodearade that dirty, ualy oil, which in turn protects the environment and aquatic life.



Bio-Sok is effective.

Bio-Sok contains the same ingredients used to clean major oil spills. Plus, Bio-Sok floats - it never sinks... it's always right where oil collects.



When you clean up bilge oil the wrong way, with soaps and emulsifiers, the oll is only encapsulated, so when pumped out of the bilge the oil sinks. You not only harm the environment, but if discovered, you put yourself at risk for hefty fines as well.

Play it safe ... make sure Bio-Sok is hard at work in your bilge today. Satisfied boat owners can't be wrong.

"One impressive new product...BIO-SOK® will now be placed in the bilge of every boat tested by our magazine..." - Boating, December 1996



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