

BioRem-2000™

CLEANING THE EARTH



ONE SPILL AT A TIME

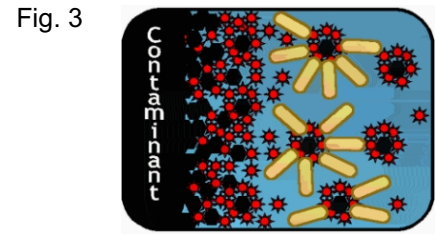
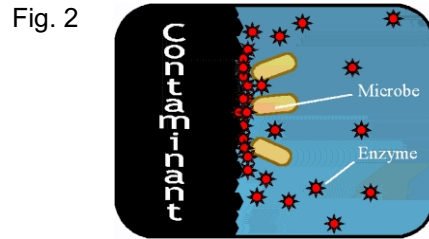
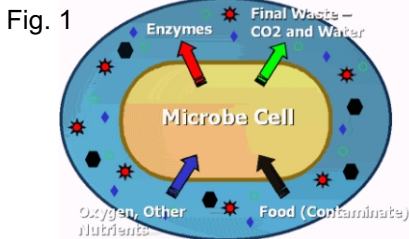
BioRem-2000TM SURFACE CLEANER

FEATURES & BENEFITS

- ◆ Ground-breaking Microbe Technology remediates hydrocarbons into water and carbon dioxide.
- ◆ Eliminates 100% of disposal costs.
- ◆ Eliminates granular absorbents, socks, pads and caustic degreasers.
- ◆ Easily applied with mops, auto floor scrubbers and degreasing equipment.
- ◆ Excellent rinseability, dries quickly and removes all oily, slick film leaving a non-slip surface.
- ◆ NSF-approved A-1, A-4 class; biodegradable with a pH of 7.
- ◆ Safe to use on any water-safe surface, including metal, concrete, plastic and rubber.
- ◆ Disposable in waste sewer drains whether or not facilities are private or public municipal pre-treatment plants.
- ◆ Renders flammable liquids, such as gasoline, diesel and jet fuel, non-flammable.
- ◆ Non-toxic, non-pathogenic and is completely harmless to human, plant, animal and marine life.
- ◆ Compatible with oil/water separators, skimming units, evaporators, polymers and more.

BIOREMEDIATION TECHNOLOGY

Bioremediation is the application of biological microbes for the clean up of hazardous oil spills resulting in a safe, efficient and cost-effective solution. Bioremediation (Fig. 1) uses microbes, enzymes, oxygen and other nutrients to chemically transform oil into carbon dioxide and water. BioRem-2000 Surface CleanerTM (Fig. 2) increases the surface area of the oil while the enzymes break down the contaminants into smaller molecules. The enzymes then attract the microbes (Fig. 3) and consume the oil leaving only water and carbon dioxide as by-products. Once the reaction is complete, the enzymes break free to attach to another hydrocarbon source in order to repeat the same reaction.



SAFETY SOLUTIONS

BioRem-2000 Surface CleanerTM has a pH of 7 and does not have any odor or contain any corrosives or butyls. These microbes are naturally-occurring, not genetically engineered, and are non-toxic and non-pathogenic. It prevents slip and fall accidents, which are 30% of all workplace accidents, by removing the oily film and leaving surfaces dry and oil-free. BioRem-2000 Surface CleanerTM significantly reduces the ability of flammable hydrocarbons to ignite. First, the VOC's are inerted on contact eliminating the potential of ignition. Second, it removes the fuel and slickness resulting in reduction of future accidents and surface degradation.



FOOD PROCESSING SOLUTIONS

BioRem-2000 Surface CleanerTM removes and degrades vegetable, animal oils and greases as well as proteins, starches and carbohydrates. It is NSF-approved (A-1, A-4) for use as a general cleaner and a floor and wall cleaner. Provides "deep-cleaning" by penetrating the floor's surface and removing embedded oil/grease left in pores, cracks, grout and crevices by soap-based degreasers. Floor drains, normally clogged by soap-based cleaners, stay clean, free-running and odor-free.



Reg. #123558

DILUTIONS SOLUTIONS



Drum Dilution System

BioRem-2000 Surface CleanerTM is highly concentrated and works best when properly diluted. We offer a variety of proportioner systems for drums and totes. The drum proportioner automatically mixes water with BioRem-2000 Surface CleanerTM precisely to the prescribed ratio and is capable of being wall-mounted. The tote dispensing system consists of one 275-gallon tote (empty), a proportioner and a delivery hose. When added to a 275-gallon tote of BioRem-2000 Surface CleanerTM (bottom tote), the proportioner dilutes the product at the prescribed ratio and stores the ready-to-use product in the top tote for continuous dispensing.



Tote Dilution System

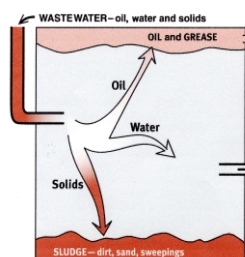
USES & APPLICATIONS

Mopping: Fill the container with properly diluted product. Unlike degreasers, BioRem-2000 Surface Cleaner™ digests oil and grease. As a result, there will not be an oily film in the water of the mop bucket. The solution may be used for several days until a film begins to appear. Although the water may look dirty, it does not mean the solution has stopped working. If the solution does not seem to be “picking up” the oil very well, then it is time to change the solution. For best results, with oily floors or visible oil, allow the solution to remain on the surface for about 30 seconds before mopping. Liberally apply to floor with a wet mop, dip mop again into bucket and agitate solution into surface. If the grease and/or oil is very thick, use an old push broom to scrub the solution into the surface before mopping. BioRem-2000 Surface Cleaner™ will remove the oily film and leave the surface dry and clean preventing slip-n- fall accidents.



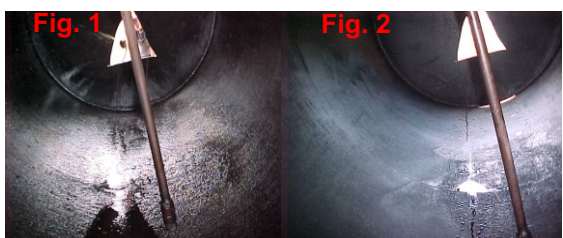
Auto Floor Scrubber: Fill scrubber with properly diluted product. Start with a 1:25 dilution rate and adjust after testing. Add product to the solution tank which should be full of clean water or dispense through a proportioner system. For best results, employ the double-scrub method. For the first auto floor scrubber pass, do not lower the squeegee. Spray solution while scrubbing. For the second pass, spray solution, scrub and lower squeegee for soiled water removal. BioRem-2000 Surface Cleaner™ will clean the auto floor scrubber by removing the hydrocarbon build up in the tanks therefore enhancing the overall performance. Leaves surface dry and oil-free without any residue and prevents slip and fall accidents.

Degreasing: Fill container with properly diluted product. The dilution rate may be determined if the operator will be using rags to clean (stronger), scrub brush (medium) or rinsing with a power washer (weaker). When cleaning heavy oil/grease deposits, allow product to soak for 1-2 minutes before removing. Heavy deposits of synthetic grease may require additional dwell time. BioRem-2000 Surface Cleaner™ will remove the oily film leaving the surface dry and clean. It may be used on any water-safe surface.



Oil/Water Separators (OWS): BioRem-2000 Surface Cleaner™ improves OWS operations and reduces costs and liabilities. Conventional degreasers disperse oil in wash water and make OWS's ineffective allowing oil to bypass the collection system straight to the sewer. BioRem-2000 Surface Cleaner™ added to an OWS breaks down petroleum products suspended or dissolved in the waste water, floating oil, and/or sludge. Facilities using BioRem-2000 Surface Cleaner™ have eliminated waste water violations and have reported reducing their sludge petroleum content by more than 80 percent.

Soil Remediation: BioRem-2000 Surface Cleaner™ can be applied to topical spills of hydrocarbons on soil and gravel areas. It can be applied by spraying directly onto the surface of the soil or gravel. Tilling the soil and re-spraying provides an even distribution of microbes throughout the soil, as well as providing aeration (oxygen) for the microbes. Repeated tilling accelerates the biological degradation of the soil contaminants. Initially, any odor associated with the fuel or oil contamination will disappear quickly.



Fuel Remediation: In Figure 1, there is shown a 1,000 gallon underground fuel storage tank containing jet fuel residue and flammable vapors. Before this tank could be dismantled with cutting torches, the remaining fuel needed to be neutralized. Two gallons of BioRem-2000 Surface Cleaner™ were applied and circulated throughout the tank. In Figure 2, the remaining jet fuel was remediated, rendering the fuel non-flammable and neutralizing any flammable vapors.

Hydrocarbon Degrade Chart

Crude Oil	Gasoline	Diesel Fuel	Glycols
Kerosene	Fuel Oils	Jet Fuel	Carbon Black
Transmission Fluid	Motor Oil	Anti-Freezer	Animal Grease
Skydrol	Lubricating Oil	Grease/Tars	Solvents
Vegetable Oils	Hydraulic	Cutting Fluids	Heating Oil

Dilution Chart

Applications & Ratios	Heavy Duty	Medium Duty	Light Duty
Floor Scrubber	1:20	1:30	1:40
Mopping	1:5	1:10	1:15
Degreasing	1:2	1:4	1:8

BioRem-2000™

Parts Cleaner Liquid

FEATURES & BENEFITS

- ◆ Highly effective Microbe-Powered formula (liquid) to be used for parts' cleaning.
- ◆ Designed for use with manual, immersion, dip tank and agitation cleaning applications.
- ◆ Remediates oil and grease into carbon dioxide and water.
- ◆ Contains inhibitors for superior rust and corrosion prevention.
- ◆ Excellent rinseability, fast drying - leaving no residue.
- ◆ Non-toxic, non-caustic, non-flammable and non-hazardous.
- ◆ Dilute 10:1 with water.



BioRem-2000™

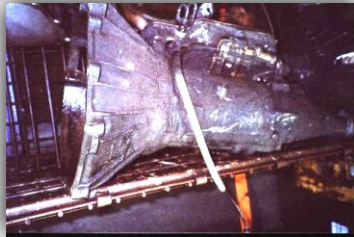
Parts Cleaner Powder

FEATURES & BENEFITS

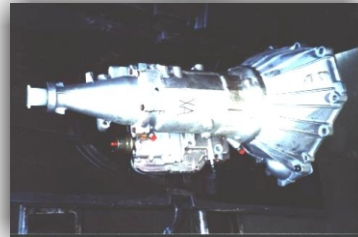


- ◆ Highly effective Microbe-Powered formula (powder) to be used for parts' cleaning applications.
- ◆ Designed for use in automated spray cabinets and systems with high or low pressure.
- ◆ Remediates oil and grease into carbon dioxide and water.
- ◆ Contains inhibitors for superior rust and corrosion prevention.
- ◆ Excellent rinseability, fast-drying - leaving no residue.
- ◆ Non-toxic, non-caustic, non-flammable and non-hazardous.

Before



After



Item Number	Product Description	Unit Size	Unit Weight
8008-015	BioRem-2000 Surface Cleaner™	15 Gal.	145 lbs.
8008-055	BioRem-2000 Surface Cleaner™	55 Gal.	540 lbs.
8008-275	BioRem-2000 Surface Cleaner™	275 Gal.	2550 lbs.
9999-000	Drum Dilution System	N/A	2 lbs.
9999-999	Tote Dilution System	N/A	225 lbs.
8002-005	BioRem-2000 Parts Cleaner™ Powder	5 Gal.	42 lbs.
8002-055	BioRem-2000 Parts Cleaner™ Powder	55 Gal.	500 lbs.
8003-005	BioRem-2000 Parts Cleaner™ Liquid	5 Gal.	45 lbs.
8003-015	BioRem-2000 Parts Cleaner™ Liquid	15 Gal.	145 lbs.
8003-055	BioRem-2000 Parts Cleaner™ Liquid	55 Gal.	540 lbs.

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