

BioRem 2000TM SURFACE CLEANER



Reversing Years of Spills



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BIOREMEDIATION TECHNOLOGY

"BioRem" short for biological remediation, is an environmentally-preferred "green" technology and economically-desirable option for companies searching for a viable alternative to caustic and solvent-based parts cleaners. Bioremediation is the natural process of biologically converting hazardous chemicals, such as hydrocarbons, into non-toxic by-products using microbes, enzymes, oxygen and other nutrients to biologically convert hydrocarbons into carbon dioxide and water.

These innovative, biological cleaners are ideal for removing oil and grease from tools, engine components and other parts. Bioremediation can provide the opportunity for facilities to eliminate and/or reduce hazardous waste, workplace health and safety risks, environmental liability and costs. It is an ideal replacement for d-limonene, naphtha, mineral spirits, MEK, methylene chloride and other petroleum-based solvents.

BioRem-2000 Surface Cleaner use state-of-the-art microbe technology to provide superior cleaning results without the disposal costs and safety risks of traditional solvent and surfactant-based cleaners. They are strong enough to remove heavy build-up of oil, grease and grime from the toughest industrial cleaning tasks without the risks that conventional cleaners cause.

BioRem-2000 Surface Cleaner are all-natural botanically-blended enzymatic system which is coupled with 12 strains of microbes that accelerates the digestion of hydrocarbons in surface-washing applications. Microbes convert hydrocarbons enzymatically prior to the ingestion of the organic material. It breaks down macroscopic clumps of hydrocarbons into smaller molecules and increases the surface area of the molecules making them more water-soluble.

The microbes use a process of extracellular and intracellular enzyme production in which enzymes are excreted from the microbial cell. The microbes secrete various enzymes that begin the process of cleavage and digestion of the hydrocarbons. The enzymes chop the long-chains of the hydrocarbons into two carbon units which are used as a source of food for the microbes to reproduce.

The resulting by-products are carbon dioxide and water. Once the reaction is complete, the microbes and enzymes break free and attach to another chain of hydrocarbons in order to repeat the same process.

The unique characteristic of the microbial blend is its ability to adapt to the changing distribution of hydrocarbons and produce more of the enzymes needed to digest that particular type of chemical allowing the statistics of the reaction to improve by increasing the number of collisions per second.

All of the microbes used in the BioRem-2000 Surface Cleaner are completely safe, non-pathogenic and are classified as ATCC Class I, which has no recognized hazard potential under normal operating conditions.

Biological Cleaners Versus Caustic and Solvent-Based Cleaners:

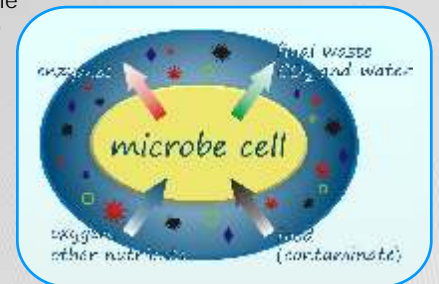
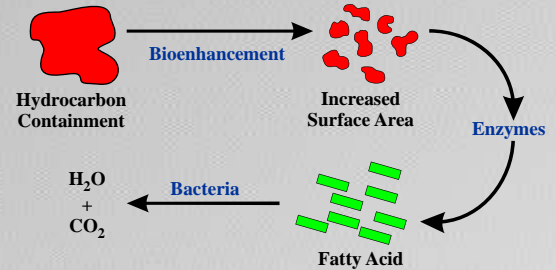
Microbe-based cleaners differ from solvent and caustic-based systems by using a non-toxic and pH-neutral solution that does not require special handling or disposal. High cleaning efficiency is maintained, unlike that of caustic and solvent-based cleaners. Caustic and solvent-based cleaners lose their performance quickly, as oils and greases damage the cleaning solution. Biological cleaners maintain performance over very long periods, as oils and greases are broken down into carbon dioxide and water by the microbes in the system. Unlike caustic and solvent-based cleaners, biological cleaners offer a consistently high cleaning performance by using natural micro-organisms which break down contaminants such as oil and grease.

- ◆ Effective - Consistent performance is maintained over a long period, unlike that of caustic or solvent-based cleaners.
- ◆ Economy - Concentrated formula which eliminates costs for transportation, storage or disposal of cleaning solution.
- ◆ Safety - Neutral pH, non-flammable, no VOC's and is non-hazardous. No unpleasant odours.
- ◆ Environmental - Reduces your carbon footprint and does not generate hazardous waste disposal.
- ◆ Versatile - Use on all metals and washable surfaces.

Biological Products Versus Other Bio Products:

BioRem-2000 Multi-Surface Cleaner are concentrated formulas whereas most other biological cleaners are a ready-to-use product. The BioRem-2000 Multi-Surface Cleaner can be used in a variety of cleaning applications. BioRem-2000 Multi-Surface Cleaner do not require impregnated mats or filters, as the solution contains multiplying microbes and enzymes for a consistently effective and safe cleaning.

- ◆ Versatile - Can be used in virtually any manual parts' washer.
- ◆ Economical - Concentrated formula with a dilution of up to 100:1
- ◆ Effective - Microbes in solution - no mats or packets.
- ◆ Powerful - Works well on heavy synthetic oils and greases.



BENEFITS

- ◆ **Powerful** - Microbe Technology remediates hydrocarbons into water and carbon dioxide.
- ◆ **Effective** - Eliminates 100% of disposal costs.
- ◆ **Superior** - Replaces granular absorbents, socks, pads and caustic degreasers.
- ◆ **Versatile** - Easily applied with mops, auto floor scrubbers and degreasing equipment.
- ◆ **Fast** - Removes all oily, slick film leaving a non-slip surface to prevent slip-and-fall accidents.
- ◆ **Advanced** - Safe to use on any water-safe surface, including metal, concrete, plastic and rubber.
- ◆ **Economical** - Disposable in waste sewer drains, reduces discharge figures and is compatible with skimming, evaporators and polymer systems.
- ◆ **Safe** - Non-hazardous, neutral pH and low toxicity to plant, animal and marine life.

USE & DILUTION - CHARTS

Use to Clean - Chart

Crude Oil	Aviation Fuels	Diesel
Gasoline	Synthetic Oils	Methanol
BTEX	ATF/Brake Fluid	Solvents
Ethanol	Glycols/Antifreeze	Naphtha
Kerosene	Lubricating Oil	Motor Oil
Heating Oil	Hydraulic Fluids	Grease/Tar
Skydrol	Food-Grade Oil	Cutting Fluids

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
Pressure Washing	1:50	1:75	1:100
Spill Control	1:1	1:5	1:10

PRODUCT LIST

- BioRem-2000 - Multi-Surface Cleaner [Item No. 8900-xxx] All Surface Degreaser
- BioRem-2000 - Fuel Eliminator [Item No. 8901-xxx] Fuel Elimination, Spill Remediation
- BioRem-2000 - Parts Cleaner (Liquid) [Item No. 8003-xxx] General Parts Cleaner
- Beyond Green Cleaning - Oil Vanisher [Item No. 8805-xxx] Remove Deep Rooted Oil Stains

CERTIFICATIONS

- ◆ **Recognized** - By the EPA's DfE Program as a safe alternative to chemicals without sacrificing performance.
- ◆ **Listed** - On the U.S. EPA National Contingency Plan ("NCP") Product Schedule.
- ◆ **Approved** - For food processing and food service facilities (A-1, A-4).

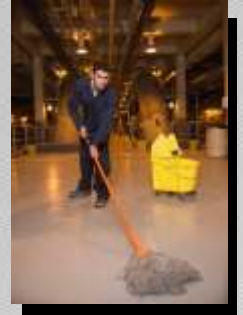
BioRem-2000 Surface Cleaner™ is on the U.S. Environmental Protection Agency's NCP Product Schedule. This listing does NOT mean that EPA approves, recommends, licenses, certifies, or authorizes the use of BioRem-2000 Surface Cleaner™ on an oil discharge. This listing means only that data have been submitted to EPA as required by subpart J of the National Contingency Plan, Sec. 300.915. EPA/DfE recognition does not constitute endorsement of this product. The Design for the Environment logo signifies that the formula for this product, as Clift Industries, Inc. has represented it to the EPA, contains ingredients with more positive health and environmental characteristics than conventional cleaners. EPA/DfE relies solely on Clift Industries, Inc., its integrity and good faith, for information on the composition, ingredients, and attributes of this product. EPA/DfE has not independently identified, i.e., via chemical analysis, the ingredients in the product formula, nor evaluated any of the non-ingredient claims of Clift Industries, Inc. EPA/DfE expresses its judgment and professional opinion only as to the environmental and human health characteristics of the product, based on currently available information and scientific understanding.



USES & APPLICATIONS

BioRem-2000 Multi-Surface Cleaner [Mopping]:

- ◆ **Powerful** - Outperforms traditional “degreasers” which emulsify and re-deposit oil.
- ◆ **Effective** - Dries quickly and increases traction eliminating slippery, greasy floors.
- ◆ **Superior** - Cleans mop buckets and mop heads extending life and performance.
- ◆ **Economical** - Lasts 5 times longer and treats more area than traditional cleaners.



BioRem-2000 Multi-Surface Cleaner [Auto Floor Scrubber]:

- ◆ **Powerful** - Performs better than “degreasers” which emulsify and re-deposit oil.
- ◆ **Effective** - Leaves oily, slippery floors clean, dry and residue-free.
- ◆ **Superior** - Cleans scrubbers brushes/pads, tanks, hoses and squeegees increasing performance.
- ◆ **Economical** - Dilution up to (1:40).

BioRem-2000 Multi-Surface Cleaner [Degreasing]:

- ◆ **Powerful** - Performs better than “degreasers” which emulsify and re-deposit oil.
- ◆ **Effective** - Leaves oily surfaces clean, dry and residue-free.
- ◆ **Economical** - Dilution from (1:8) to full strength for pre-soak and rinse.
- ◆ **Safe** - On any water-safe surface (plastic, rubber, concrete, painted and metal).

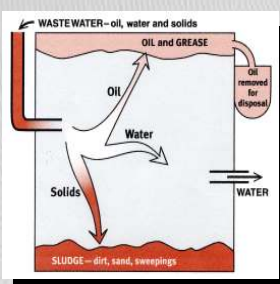


BioRem-2000 Multi-Surface Cleaner [Pressure Washing]:

- ◆ **Powerful** - Removes tough oil, grease and grime deposits on all types of surfaces.
- ◆ **Effective** - Significantly reduces wash water pollutant levels.
- ◆ **Versatile** - Effective with cold and hot-water pressure washers.
- ◆ **Safe** - Will not harm pressure washer seals or pumps.

BioRem-2000 Multi-Surface Cleaner [Spill Control]:

- ◆ **Powerful** - Suppresses odors and vapors from volatile spills.
- ◆ **Effective** - Reduces “cradle-to-grave” liabilities.
- ◆ **Versatile** - Gas pump, railroad spills and disconnects and tank cleaning.
- ◆ **Economical** - Reduces cost of spill response and treatment.



BioRem-2000 Multi-Surface Cleaner [Oil / Water Separators (“OWS”)]:

- ◆ **Powerful** - Reduces the frequency of pumping.
- ◆ **Effective** - Decreases sludge build-up and eliminates odors.
- ◆ **Versatile** - Dissolves the suspended or emulsified oils in the water.
- ◆ **Safe** - Complies with regulations and reduces violations.

USES & APPLICATIONS

Parts Cleaning- Liquid

BioRem-2000 Parts Cleaner - is a powerful, concentrated water-based bio-remediating cleaner with superior cleaning capabilities which eliminates waste disposal costs and health and safety risks. Effectively converts gasoline (BTEX), diesel, motor oils, fuel oils, grease, antifreeze, hydraulic, brake, ATF, cutting fluids, as well as heavy synthetic oils and greases into carbon dioxide and water. Contains corrosion inhibitors to prevent flash rusting.

- ◆ **Powerful** - Microbe-powered concentrated water-based formula with superior cleaning capabilities.
- ◆ **Effective** - Consistent performance with quick breakdown and removal of oils and greases.
- ◆ **Versatile** - Safe to use on all washable surfaces, including metal, rubber, plastic and painted surfaces.
- ◆ **Safe** - No VOC's, pH neutral, caustic and solvent-free, non-flammable and non-hazardous.
- ◆ **Economical** - Dilute 20:1 (6.4 ounces per gallon) with water.



Spill Remediation & Fuel Elimination

BioRem-2000 Fuel Eliminator - as a Fuel Eliminator, which significantly reduces the ability of flammable hydrocarbons to ignite. The VOC's are immobilized on contact, eliminating the possibility of ignition and removes the fuel slickness and surface grime.

BioRem-2000 Fuel Eliminator - Fuel Eliminator at work.

A 5,000 litre underground fuel storage tank containing contaminated jet fuel with standing grime, residue and flammable vapors needs to be dismantled with a cutting torch, before doing this, the remaining fuel in the tank needs to be neutralized and thoroughly cleaned. With only 5 litres of BioRem-2000 Multi-Surface Cleaner and spray equipment, applied the product and allow it to circulate throughout the tank. Immediately the remaining jet fuel will be rendered non-flammable. The tank can then be rinsed with pressurized water making the tank residue and vapor-free. The process begins immediately upon contact with hydrocarbons and continues until all hydrocarbons are consumed.



Directions for Average Spill or Vehicle Accident

With a pressurized sprayer, cover the spill with BioRem-2000 Fuel Eliminator completely saturating the surface of the spill. Allow product to dwell for 3 to 4 minutes. re-apply the product again, then rinse surface with clean water.

- ◆ **Powerful** - Microbe Technology remediates hydrocarbons into water and carbon dioxide.
- ◆ **Effective** - Renders Flammable liquids, such as petrol, diesel and jet fuel, non-flammable within minutes
- ◆ **Versatile** - Safe to use on all washable surfaces, including metal, rubber, plastic and painted surfaces
- ◆ **Safe** - Non-toxic, non-pathogenic and is completely harmless to human, plant, animal and marine life.
- ◆ **Economical** - Dilute 20:1 (6.4 ounces per gallon) with water.

Oil Vanisher - Ultimate Stain Remover

- ◆ **Powerful** - Microbe-powered oil stain remover.
- ◆ **Effective** - Quickly removes stains regardless of age.
- ◆ **Versatile** - Removes stains from concrete, asphalt, pavers & more.
- ◆ **Safe** - Bio-based using only 100% all-natural ingredients.

How to Apply?

Concrete and Pavers: Add product to the stained area. Then apply half the amount of water as product used on the stained area. Use a brush to agitate the stained area for 1 to 2 minutes. Make sure the solution does not dry. If necessary, add more product and water. Rinse the area completely with clean, high-pressure water. If necessary, repeat the application. The product may take longer to remove stains in cooler temperatures.

Asphalt: Use the above directions; however, only agitate the stained area for 30 seconds. A long dwell time is NOT RECOMMENDED because of the oil content in asphalt.

