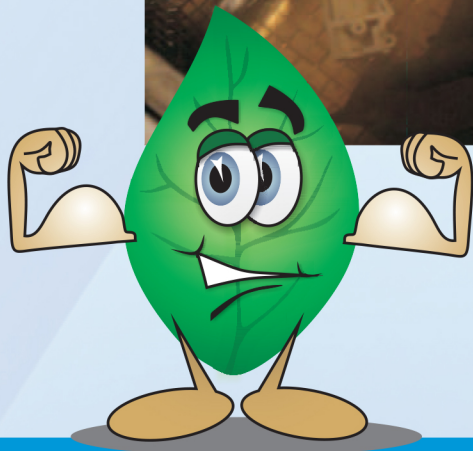
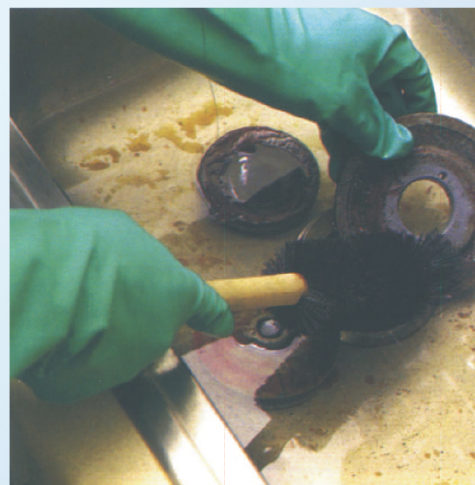


# BioRem 2000™ PARTS CLEANER



## Parts Washing Solutions

**“Bioremediation”** 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 parts’ 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 Parts 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 soil from the toughest industrial cleaning tasks without the risks of conventional cleaners.

**BioRem-2000 Parts Cleaner** are all-natural botanically-blended enzymatic system which is coupled with 12 strains of microbes that accelerates the digestion of hydrocarbons in part-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 Parts Cleaners 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:

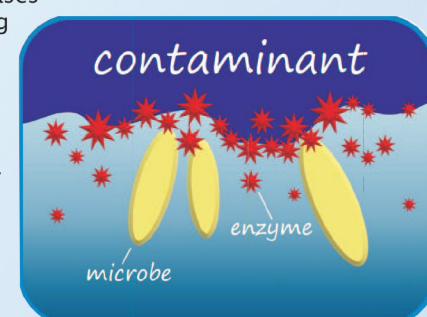
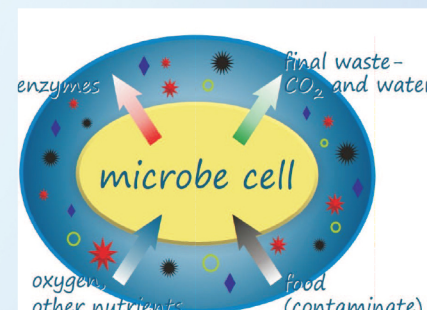
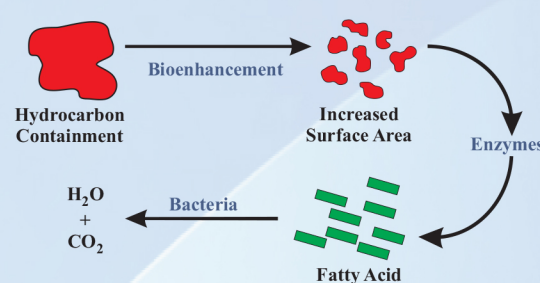
Microbe-based parts cleaners differ from solvent and caustic-based systems by using a non-toxic and pH-neutral chemical solution that does not require special handling or disposal. High cleaning efficiency is maintained, unlike that of caustic and solvent-based cleaners. Caustic and solvent-based cleaners 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 odors.
- **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 Parts Cleaners are concentrated formulas whereas most other biological parts’ cleaners are a ready-to-use product. The BioRem-2000 Parts Cleaners can be used in a variety of parts’ washers. BioRem-2000 Parts Cleaners 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 1:20
- **Effective** – Microbes in solution - no mats or packets.
- **Powerful** – Works well on heavy synthetic oils and greases.



# BioRem 2000™ PARTS CLEANER - Liquid

**BioRem-2000 Parts Cleaner Liquid™** is a powerful, concentrated water-based bio-remediating parts’ cleaner with superior cleaning capabilities which eliminates waste disposal costs, as well as health and safety risks. The BioRem-2000 Parts Cleaner Liquid™ is a mixture of naturally-occurring microbes and several enzymes coupled with a nutrient package that accelerates the bioremediation process. Effectively degrades gasoline (BTEX), diesel, motor oils, fuel oils, grease, anti-freeze, hydraulic, brake, ATF, cutting fluids, as well as animal and vegetable oils and heavy synthetic oils and greases. Contains corrosion inhibitors to prevent flash rusting. Designed for use with most manual parts’ washers.

### Benefits:

- **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 metals, including copper and brass, rubber, plastic, painted and all washable surfaces.
- **Safe** – No VOC’s, pH neutral, caustic and solvent-free, non-flammable and non-hazardous.

Number of Microbial Strains:	12
Microbial Count:	50 Billion/gram
Microbial Characteristic:	GRAS Listed
Number of Enzyme Species:	7
Enzyme Activity Range:	6,000 u/mg.
pH Activity Range:	5-11 pH
Appearance:	Amber Liquid
Bioluminescence Test:	Positive
Phosphorous:	None

Usage	Dilution Ratio	01:20
Physical Properties	Appearance	Liquid
	Color	Amber
	Fragrance	None
	pH	8
	Shelf Life	1 Year
Primary Packaging	8003-005L	5 Litres
	8003-020L	55 Litres

### Instructions:

**BioRem-2000 Parts Cleaner Liquid™** is a concentrate and must be diluted with water before using. Dilute 1 part of BioRem-2000 Parts Cleaner Liquid™ with 20 parts water. Type, age and build-up of soils will determine cleaning time and life of solution, as well as the soil load, concentration and frequency of use. Drains excess oil and fluids from parts before placing in the solution. Do not use any type of oils or chemicals into the solution. Circulation and aeration are essential for microbial growth as continuous aeration is recommended. Fluid should be heated before and during use (usually 38° to 45°C.). Never exceed 48°C. Filters for removing solids must be cleaned (if applicable) and/or solids removed from bottom of reservoir periodically. A significant decline in cleaning strength is a sure sign that the system may be overloaded or microbes may not be functioning as intended for some reason (causing oil build-up). Foul odors indicate that the aerobic microbe population is low and sludge is probably collecting at the bottom of the reservoir. Be certain the fluid is getting adequate aeration and circulation and that everyone is following the recommended guidelines for both product and machine use.