

WATER SPECIALISTS TECHNOLOGIES LLC

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RB DEGREASER is an aqueous-based alkaline cleaner formulated to safely and quickly remove oils, grease and other soils from metal, plastic, rubber, tile, glass, cement, fabric and other hard and soft surfaces. It is a synergistic blend of surfactants, emulsifiers, wetting agents, alkaline builders, rust and corrosion inhibitors, anti-redeposition and rinsing aids.

RB DEGREASER is furnished as a high concentration cleaner which is water activated and must be diluted to do its jobs. By simply changing the dilution ratio, this multipurpose and multifunctional cleaner can be used for a wide variety of production and janitorial applications. No need to stock many different solvents and cleaners. It has a mild, non-citrus odor.

The solvent in RB DEGREASER is water, which makes this cleaner inherently safe; i.e., it is **NON-FLAMMABLE, NON-COMBUSTIBLE AND NON-TOXIC**. It does not contribute to ozone depletion or smog. RB DEGREASER contains no petroleum additives, no chlorinated solvents, no halogens, no butyl, no caustic soda, no VOC's, no borates, no chlorides, no photochemicals, no ammonia and no citrus by-products. No SARA reporting is required and RB DEGREASER meets OSHA, EPA and California standards. It is acceptable for use in federally inspected meat and poultry plants.

RB DEGREASER is non-toxic and nonhazardous to workers and the environment. It is completely biodegradable and compatible with sewer discharge requirements.

RB DEGREASER can be used with existing cleaning equipment including ultrasonic cleaning, batch washers, pressure washers, and floor scrubbers. It may be used cold or heated to 140°F for improved speed. Temperatures up to 200°F can be utilized without degradation.

RB DEGREASER contains rust inhibitors and is not corrosive to metals. A synergistic blend of corrosion inhibitors provides maximum metal protection during the cleaning process. It will not harm metals including aluminum, zinc, copper, steel and brass. Surfaces rinse squeaky clean of any film or residue and are ready for painting, plating, anodizing or packaging.

The environmental formulation includes a demulsifier which increases the active life of the cleaner and allows for easy treatment of spent solution. Oils/Greases/Soils stay emulsified with normal agitation. When agitation stops - complete separation occurs within 1 hour. Fats, oils and grease rise to the surface for easy skimming and removal.

HOW RB DEGREASER WORKS AND IS USED

RB DEGREASER (RBD) is shipped in concentrated form. It is water activated (water is the solvent) and must be diluted to do its job. The working solution chemically breaks the molecular chain of hydrocarbons so that all deposits of oil, grease, carbons, and other soils embedded in the pores of any surface are emulsified into a water soluble solution and easily rinsed away.

RB DEGREASER is applied by soaking, dipping, wiping, brushing and spraying.

CLEANING EQUIPMENT

RB DEGREASER is used in the following equipment at the given dilution ratios (RBD:Water)*:

Soak Tanks 1:10	Parts Washer 1:10	Floor Scrubbers 1:50
Ultrasonic Cleaners 1:20	Steam Cleaners 1:50	Foam Machines 1:5
Dip Tanks 1:10	Vapor Degreasers 1:10	Electrocleaners 1:9
Pressure Washers 1:20	Tumblers 1:5	Vibratory Deburring 1:10

APPLICATIONS & DILUTION RATIOS (RBD:WATER)*

The following are some applications with suggested dilution ratios* for RB Degreaser:

Carbon Removal 1:6	Tile & Grout 1:10	Formica, Plastics 1:6
Fiberglass & Stainless Steel 1:6	Aerospace 1:6	Soil Remediation 1:10
Gelled Oils 1:5	Carpet Cleaning 1:50	Concrete 1:20
Fabrics & Leather 1:20	Grease Filters 1:5	Boiler Fuel Oil 1:6
Glass 1:100	Drawing Compounds 1:6	General Maintenance 1:100
Chemical Decontamination 1:6	Smoke, soot, Diesel Fuel 1:6	Gear Greases 1:5
Jewelry 1:20	Varnish 1:5	P.C. Board Cleaning 1:10
Wooden Furniture/Fixtures 1:20	Inks, Graffiti 1:5	Drains & Grease Traps 1:5
Floors 1:50	Hydraulic Fluids 1:5	Bilgewater 1:5
Maintenance 1:6	Cutting Oils 1:5	Machinery 1:6
Stripping Floors 1:20	Laundry Additive 1:50	Electrostatic Precipitators 1:5
Food Service 1:6	Asphalt, Tar 1:5	Carwash/Trucks 1:50
Windows & Mirrors 1:200	Solidified Greases 1:5	Flux Removal 1:10
Marine 1:6	Tools 1:5	Electronics 1:10
Spot Cleaning 1:9	Latex Adhesives/Paints 1:5	Fleet Maintenance 1:6

* NOTE: These suggested dilution ratios are a starting point. Keep in mind RB DEGREASER must be diluted and is not made stronger by using less water. It is more effective and works faster when heated or used on a warm surface. A little experimentation will help determine the optimum dilution ratio and temperature for a specific application.

DILUTION & WATER QUALITY

RBD is water activated and must be diluted at least 1 to 5 with water. It is important to remember that the condition of the water used for diluting RBD will affect the results.

- Hard water (exceeding 25 grains of hardness) may cause deactivation of the surface active agents and, if used for rinsing cleaned parts, cause stains on the cleaned surface. Also, the higher the concentration of total dissolved solids (TDS) the more likelihood of foaming.
- We recommend the use of decaionized (soft) water or deionized (DI) water for the initial dilution and evaporative make-up. This will result in longer life of the cleaning solution, more effective cleaning and better rinsing - especially when DI water is used for rinsing.

USING RB DEGREASER (RBD) IN CLEANING EQUIPMENT

PARTS WASHERS, TANKS OR OPEN TOP DRUMS

- Before adding an initial charge of RBD, be sure the tank or drum is clean and free of all hydrocarbon deposits and sludge.
- RBD must be kept agitated to keep the oil and grease emulsified. To avoid foaming, subsurface agitation is required. A small submersible pump, 1/4 -1/3 HP, is adequate. Do not use air agitation as it will cause foaming.
- RBD is 10 times more effective when heated to 140°F, than at ambient temperature. A simple immersion heater can be used to heat the degreaser.
- A 7-Day timer will provide automatic start-up and shut-down of the pump and heater.
- Using a rack or basket to hold the parts permits easy tank immersion.
- After cleaning, follow with a clean water rinse - either a spray rinse over the tank or in a separate tank. For some applications, rinsing may not be required.
- After cleaning and rinsing, parts can be air dried or dried with an air blower.
- When agitation of the solution is discontinued, the oil and grease will float to the surface for easy removal by means of a built in skimmer or by floating oil absorbent pads or socks in the tank.
- To extend the useful life of RB DEGREASER, cover the tank or drum when not in use.
- To make up for evaporation, use the water from the dip rinse tank or allow water from the spray rinse above the tank to drain into the tank. Installation of a simple water float valve will maintain the desired tank level.
- To determine and maintain the solution strength, use a pH meter. The pH of the initial working solution is the desired set point. When the pH drops, add RB DEGREASER concentrate to raise the pH to the set point. When the set point cannot be maintained, it's time to replace the cleaning solution.
- Short-term protection against rust and corrosion is provided by inhibitors in RBD..Longer rust protection can be obtained by dipping the parts in RUST PROOF.

ULTRASONIC CLEANING

- RB DEGREASER enhances the cavitation activity needed to optimize ultrasonic cleaning.
- Typically, the recommended dilution ratio is 1:20. However, for some applications a 1:10 dilution is more effective.
- Always add RB DEGREASER to water (not vice-versa) to avoid foaming.
- Ultrasonic cleaning with RB DEGREASER is improved when the solution is heated.
- A little experimentation will help determine the optimum dilution ratio and temperature for specific applications.

PRESSURE WASHERS

- The suggested dilution ratio is 1:20.
- Set the metering valve on the washer to mid-range position and adjust as required to achieve maximum results.

VIBRATORY DEBURRING

- RB DEGREASER cleans faster, is safer to use, and lasts longer than most alkaline cleaners on the market. The suggested dilution ratio is 1:10
- To keep the deburring media free of oils and other contaminants, preclean the parts in RBD (and rinse) before vibratory deburring.

VAPOR DEGREASERS

- Review the suggestions for parts washers and tanks on the previous page. Be sure the sump is clean and free of all hydrocarbon deposits. An initial batch of RBD can be used for this purpose.
- Disconnect the cooling system of the vapor degreaser.
- Add a subsurface agitation pump.
- Maintain solution temperature at 140°F to 170°F.
- Disconnect the spray mechanism as it will cause foaming.
- Before each start up, skim off oil and grease from solution surface.
- Fill the sump of the unit to ensure complete immersion of parts.

GENERAL INFORMATION WHEN USING RB DEGREASER

PRODUCT LIFE: The useful life of RB DEGREASER can be extended significantly by following these suggestions:

- Remove contaminants in cleaner baths by filtering the solution. Media filters, diatomaceous earth filters, centrifuges and skimmers are effective for this purpose. If foaming occurs when circulating RBD through a filter, check the pump to make sure air is not being drawn into the suction. Also be sure the pump is properly sized and does not churn the solution or cavitate.
- When tap water is used for dilution or evaporation make up, chlorides and other salts will build up rapidly and decrease the useful life of the RBD bath. Use softened or deionized water.
- The pH of the solution can be used as an indicator of solution strength. After the initial preparation of the bath, check the pH value and record it. This value is the set point. Whenever the pH value decreases - add RBD concentrate to the working solution to achieve the pH set point. When the set point value can no longer be maintained, it's time to replace the bath.

FOAMING: All aqueous cleaners have a tendency to foam. RBD is a special formulation containing surface active agents which will cause foaming if sprayed or if air is allowed to become entrapped. Here are some suggestions for minimizing foaming:

- A "dishwasher" type cleaning unit with a spray will create foam. Use subsurface agitation, or ultrasonic transducer, preferably with heater.
- To minimize foaming, always add RBD to water during dilution, not water to RBD.
- Typically the higher the concentration of RBD in solution, the greater the tendency to foam.
- Likewise, the higher the level of total dissolved solids (TDS), attributed to the quality of the tap water used for dilution, the more the likelihood for foaming.
- Another cause for foaming is air entrapment - usually when air enters the suction of a pump used for agitation or recirculation/filtration. Spray nozzles of the atomizing type which mix air with liquid will also cause foaming. Use a coarse spray, full pattern type nozzle.
- The higher the solution temperature, the less foam will be generated. Also it takes less time to clean parts at an elevated temperature. Tests show that RBD is 10 times faster at 140°F, as compared to room temperature. And with a heated RBD tank, parts will be heated and rapidly air dry when removed.

Note: **RBDEGREASER-NO FOAM** is a formulation of anionic and nonionic surface active agents which counteract foaming (especially at higher temperatures) while, at the same time, having a longer useful life and an improved cleaning range.

RUST: Although RBD contains rust (and corrosion) inhibitors, it completely rinses from a cleaned item to facilitate subsequent plating, anodizing or painting. Meanwhile the surface is exposed to the atmosphere and potential "flash" rusting. To minimize or prevent rusting we suggest:

- Use deionized water for dilution and rinse water.
- Add a rust-inhibitor product to the rinse tank.
- Dip parts in a rust inhibitor product after rinsing.
- Alter production procedures to allow cleaned parts to move directly to plating, anodizing, painting, etc.

DISPOSAL: RBD is 100% biodegradable and compatible with sewer discharge requirements. RBD spent baths must be disposed in accordance with regulatory requirements.