



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

February 6, 2017

Micah Reynolds  
Technology Sciences Group, Inc.  
c/o Laboratoire Pareva  
1150 18<sup>th</sup> Street, Suite 1000  
Washington, DC 20036

Subject: Label Amendment – Updating Company Information, revise active ingredient nomenclature, revise select label language for state regulatory needs and various optional marketing claims add placeholder text for supplemental distribution registrations, additional uses consistent with other PHMB products  
Product Name: Revacil  
EPA Registration Number: 69461-1  
Application Date: November 1, 2016  
Decision Number: 523636

Dear Mr. Reynolds:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.


A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

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Decision No. 523636

Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. If you have any questions, please contact Stacey Grigsby by phone at 703.305.6440 or via email at [grigsby.stacey@epa.gov](mailto:grigsby.stacey@epa.gov)

Sincerely,

A handwritten signature in cursive script that reads "Stacey Grigsby". The signature is written in black ink on a white background.

Stacey Grigsby  
Risk Manager  
Regulatory Management Branch II  
Antimicrobials Division (7510P)

Enclosure

# REVACIL

[Alternate Brand Name: **PHMB P20 D**]

[SWIMMING POOL] [SPA] [AND] [HOT TUB] [SANITIZER] [AND] [ALGISTAT]

[Chlorine Free]

[1-877-REVACIL]

[Swimming pool sanitizer and algistat - Not a disinfectant]

[Microbiocide]

[Revacil is a high activity microbicide and in-can preservative for use in applications such as oil-in-water and water-in-oil emulsions, industrial reagents, silicone systems and cellulose solutions. Revacil can also be used for the preservation of animal hides and skins.]

### Active Ingredient:

Poly (hexamethyleneguanide hydrochloride) ..... 20.0%

Other Ingredients:..... 80.0%

TOTAL.....100.0%

**KEEP OUT OF REACH OF CHILDREN**

## WARNING

See [Side] [Back] Panel for [Additional] [Precautions] [Precautionary Statements] and First Aid [Treatment]

Net Contents:

Made in France by :

Laboratoire Pareva

Z.I. du Bois de Leuze

25 avenue Marie Curie

13310 Saint-Martin de Crau, France

[www.revacil.us](http://www.revacil.us)

EPA Reg. No. 69461-1

EPA Est. No. 69461-FRA-1

[Product of France] [Made in France]

[Member of National Spa & Pool Institute logo]

## PRECAUTIONARY STATEMENTS HAZARD TO HUMANS AND DOMESTIC ANIMALS

**WARNING: Causes substantial but temporary eye injury. Harmful if swallowed or absorbed through the skin.** Do not get in eyes or on clothing. Avoid contact with skin. Avoid breathing vapor or mist. Wear goggles or face shield. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

(Note to Reviewer: Boxed format or bullets may be used in First Aid Section if label space permits.)

| FIRST AID  |   |
|--|---|
| IF IN EYES:  | <ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>                                       |
| IF SWALLOWED:  | <ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to by a poison control center or doctor.</li> <li>• Do not give anything to an unconscious person.</li> </ul> |
| IF ON SKIN OR CLOTHING:  | <ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>   |
| IF INHALED:  | <ul style="list-style-type: none"> <li>• Move person to fresh air</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>  |
| Have the product container or label with you when calling a poison control center or doctor, or going for treatment. |   |

### Notes:

(1. If container size is 5 gallons or greater, use the following statement.)

### ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other water unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of EPA.

(2. If container size is less than 5 gallons, use the following statement.)

### ENVIRONMENTAL HAZARDS

This product is toxic to fish.

**Notes:**

*(1. User Safety Recommendation section required only for products sold with occupational use.)*

**USER SAFETY RECOMMENDATIONS**

Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

*(2. The following statement required only for products sold with oil-field uses.)*

Scenarios involving drilling muds and workover fluids must use metering pump systems.

[[This product][REVACIL] [sanitizer] is registered as a swimming pool, spa and hot tub sanitizer, not as a disinfectant.]

**DIRECTIONS FOR USE**

It is a violation of federal law to use this product in a manner inconsistent with its labeling. Important - REVACIL [sanitizer] is incompatible with chlorinating chemical products. Consult your [authorized] [Dealer of REVACIL] [REVACIL Dealer] [local pool supply store] for information on balancing your pool water.

**[Start up] [Treating the pool]**

**[Pools Previously Treated with Chlorinating Chemicals**

Check with chlorine test kit for free and combined chlorine prior to the beginning of neutralization. To destroy chlorine, add [STOP CHLORE] [REVASTOPCHLORINE] chlorine neutralizer per label directions. Filter overnight.

Check with chlorine test kit. If free chlorine is detected, repeat neutralizer treatment.

*(Note to reviewer: Directions may be lettered or numbered on final printed labelling.)*

**Freshly Filled and Dechlorinated Pools**

**Start up with REVACIL [sanitizer]**

Note: If the pool water contains algae or is hazy, consult [the problem-solving section of the "Pool [Owner's] [Care] Guide," available from] your [local pool supply store] [authorized] [Dealer of REVACIL] [REVACIL Dealer] [(See REVABLUE section)].

\* Backwash or clean pool filter. Check pool pH; adjust to 7.0 - 7.8 if necessary.

\* Add REVACIL [sanitizer] to give a content of 50 ppm (1/2 gallon product/10,000 gallons of [pool] water).

\* After 24 hours, check pH and REVACIL [sanitizer] concentration with the test kit for REVACIL [SANITIZER] and adjust if necessary.

**[Maintenance] Normal Pool Routine**

\* Every week, check REVACIL [sanitizer] concentration and pH.

\* Maintain REVACIL [sanitizer] concentration at about 50 ppm. If concentration falls 10 ppm or more, add a top-up dose. The level should not be allowed to drop below 30 ppm.

For example, to raise the REVACIL [sanitizer] level 10ppm, add [16 oz.] [1 pint] per 10,000 gallons of [pool] water. [Consult the booklet, "The Pool [Owner's] [Care] Guide for REVACIL [sanitizer]."] [Consult your REVACIL dealer] [Consult your local pool supply store] for calculation instructions.

**NOTE:** REVACIL [sanitizer] AND CHLORINE ARE INCOMPATIBLE.

[Refer to the Pool [Owner's] [Care] Guide for REVACIL [sanitizer]] [Consult your REVACIL dealer] [Consult your local pool supply store] for information on how to deal with accidental chlorination.

REVACIL®, REVATOP®, STOP CHLORE®, REVASTOPCHLORINE®, and STOP METAL® are trademarks of Laboratoire Pareva.

**Problem-Solving and Supplemental Pool Information.**

Do not use in unpainted plaster pools previously exposed to metals which may cause staining.

REVACIL [sanitizer] is not compatible with many detergents and some supplemental algaecides (such as those based on copper). Do not use in freestanding [spas] [hot tubs].

If algae development, cloudiness, or pool problems occur or additional information on water quality is desired, consult [your] ["The Pool [Owner's] [Care] Guide for REVACIL "] [available from your] [Authorized Dealer of REVACIL [sanitizer]] [REVACIL [sanitizer] Authorized Dealer] [your local pool supply store].

**[Treating the spa or hot tub]**

Important - REVACIL [sanitizer] is incompatible with chlorinating [and] [or] brominating chemical products.

*(Note to reviewer: Directions may be lettered or numbered on final printed labelling.)*

**Start up with REVACIL [sanitizer]**

\* Remove chlorine or bromine source and disconnect feeder. Discontinue use of ionizers and electrochlorinators if present.

\* Drain existing water in spa.

\* Clean [spa] [hot tub] [surface] [and filter] [with water].

\* Fill [spa] [hot tub] [surface] with water.

\* [Bring a sample of [spa] [hot tub] water to your [local pool supply store]

[REVACIL [sanitizer] Authorized dealer] [Authorized Dealer of Revacil [sanitizer]] to check it for proper water balance.] [Have your authorized dealer of REVACIL [sanitizer] check your water for proper water balance.]

\* After [your] [spa] [hot tub] water has been balanced, add REVACIL [sanitizer] to give a concentration of 50 ppm. (1 fl.) oz. of product [for] [per] 150 gallon of [spa] [hot tub] water).

\* Circulate [water] [for] 30 minutes then check the REVACIL [sanitizer] [level] [concentration] [with REVACIL TEST STRIPS] [and]. Adjust if necessary.

**[Normal] Spa/Hot Tub Maintenance**

\* Every week, check REVACIL [sanitizer] concentration and pH. Adjust if necessary.

\* The [level of] REVACIL [sanitizer] [level] should be maintained between 30 and 50 ppm. [When the level of REVACIL is 30 ppm or less, add enough REVACIL to bring the level up to 50 ppm.]

\* The [REVACIL level] [spa's level of REVACIL] should never [be allowed to] drop below 30 ppm.

\* To raise the [REVACIL] sanitizer level 10 ppm, add 0.2 oz. per 150 gal. of [spa] water.]

[[This product] [Revacil] is compatible with other [pool] [spa] maintenance products such as [REVATOP][REVABLUE][REVAOUT][REVAKLAR][REVAPH-UP][REVAPH-DOWN] [REVALKALINITY] [REVALCALIUM-UP] [REVAFLOCK] [REVAKLAR] [REVAPURE] [REVAFILTER] [REVALNET] [REVAPIPE] [REVASTOP- FOAM] [REVASTOP-CHLORINE] [REVASTOP MUSTARD ALGAE] [REVA-SPA Shock] [REVA-SPA Stain and Scale Control] [REVA-SPA Water Line Control] [REVA-SPA Foam Dispenser] [REVA-SPA Water Clarifier] [REVA-SPA Test Strips.]]

**(Note to Reviewer:** The following use directions will appear on product labels sold for industrial uses:)  
[Typical applications [of the industrial product **PHMB P20 D**] and suggested dosages include:]

**Silicones** such as silicone emulsions and silicone dispersions (Not for use in CA).  
Dosage: 1 lb. to 50 lb. **PHMB P20 D** per 10,000lb. of product (100 to 5000 ppm)

**Tunnel Pasteurization Waters** (Not for use in CA).  
For the preservation of waters used in tunnel pasteurization and tunnel cooling of sealed packages of canned and bottled foodstuffs.  
Dosage: 13 fl. oz. to 1 gal. of **PHMB P20 D** per 1,000 gal. tunnel pasteurization water (100 to 1000 ppm).

**Aqueous Industrial Chemicals** (Not for use in CA).  
For the preservation of aqueous industrial chemicals such as reagents, oil-in-water emulsions, water-in-oil emulsions, textile spin finish lubricants, wash water and cellulose solutions. Dosage: 1 lb. to 50 lb. of **PHMB P20 D** per 10,000 lb. of product (100 to 5000 ppm).

**Leather Processing** (Not for use in CA).  
For the preservation of leather processing solutions.  
Dosage: 1b. to 30 lb. of **PHMB P20 D** per 10,000 lb. of product (100 to 3000 ppm).

**Aqueous Based Polymer Lattices** (Not for use in CA).  
For the preservation of aqueous based polymer lattices such as polyvinyl acetate and polyvinyl alcohol. Do not use to preserve lattices used for paper coating compositions that may contact food. Dosage : 5 lb. to 50 lb. of **PHMB P20 D** per 10,000 lb. of product (500 to 5000 ppm).

**Aqueous Mineral Slurries** (Not for use in CA).  
For the preservation of aqueous mineral slurries such as calcium carbonate, titanium dioxide. Do not use to preserve slurries used for paper coating compositions that may contact food. Dosage: 5 lb. to 50 lb. of **PHMB P20 D** per 10,000 lb. of product (500 to 5000 ppm).

**Aqueous Based Adhesives** (Not for use in CA).  
For the preservation of aqueous based adhesives such as animal glues, latex adhesives based on polyvinyl acetate, PVA, etc., starch, synthetic, dextrin, casein and other glues. Dosage: 5 lb. to 50 lb. of **PHMB P20 D** per 10,000 lb. of product (500 to 5000 ppm). Preserved water-based adhesives may be used for food-contact purposes at a maximum use level of 1,000 ppm.

**Industrial Electrocoats** (Not for use in CA).  
For the preservation of aqueous solutions such as electrocoat resins and depositions systems.  
Dosage: 10 lb. to 50 lb. **PHMB P20 D** per 10,000 lb. of product (1000 to 5000 ppm).

**Household Consumer Products** (Not for use in CA).  
For the preservation of liquid, solids and paste consumer products such as surface cleaners, floor cleaners, fabric stain removers, fabric softeners, fabric conditioners, laundry detergents, laundry additives, automotive care silicone emulsions, and automotive cleaning products.  
Dosage: 2.5 lb. to 25 lb. of **PHMB P20 D** per 10,000 lb. of product (250 to 2500 ppm).

**Preservation of Fresh Animal Hides and Skins** (Not for use in CA).  
For the preservation of fresh animal hides and skins prior to use. During processing, use 15fl.oz. to 3Gal. Add the appropriate quantity of **PHMB P20 D** to the brine solution during the curing operation or treat hides or skins with an appropriately diluted aqueous solution during other portions of the processing operations. The specific use rate and contact time needed to control microbial attack will depend upon the degree of decomposition of the hides or skins prior to treatment.  
Dosage: 1.0 to 2.6 lbs. of **PHMB P20 D** per 1,000 lb. of hides or skins.

### **Cellulosic Materials and Textiles** (Not for use in CA).

**PHMB P20 D** can be used as an agent to control the growth and action of microorganisms, and control generation of odors, on textiles such as cotton, cotton blends, cellulosic materials, and synthetic fibers such as non-wovens, tissues, paper and pulps.

Dosage: **PHMB P20 D** is diluted and applied to give 0.025 to 2% on the dry weight of the substrate. Application is by conventional means such as padding, spraying, soaking or exhaustion. The optimum conditions for application of the dilute solution are pH 6.5 to 8 and temperature of 20 to 30 °C.

The following are examples of products (substrates) suitable for antimicrobial finishing with **PHMB P20 D**:

- Textiles such as: Household products, for example, upholstery, carpet, curtains, wall covering, mops, dishcloths, yarns, cords, toweling and blankets.
- Cellulosics such as: wipes, tissues, sponges, paper products (non-food contact) such as filters and cellulose pulp.
- Apparel items includes: slacks, shirts, underwear, sweatshirts, socks, oven mitts, slippers, bathrobes, gloves, hats, scarves, jackets, sheets, pillowcases, incontinence pads cover stock, washable incontinence briefs and panties.

### **Oil Recovery** (Not for use in CA).

Not for use in oil recovery systems that employ holding ponds for spent liquids.

Do not apply in, over or near marine and/or estuarine oil fields.

Dosage: Specific rates for use of **PHMB P20 D** should be determined by bacteriological tests made prior to treatment. These tests should establish (a) the presence of microorganisms, (b) the severity of the problem, and (c) required treating ratio. The effectiveness of a treatment can be evaluated by similar bacteriological tests. The compatibility of **PHMB P20 D** with the water should be determined prior to treatment. Some suggested treatment methods and treating rates for water systems include:

#### Oil Field Injection Water

1. **SLUG METHOD** - When the system is noticeably fouled, apply 4 gallons of **PHMB P20 D** per 1,000 barrels (42,000Gal) of water (95.2ppm of product). **PHMB P20 D** should be added to the system at a point where it will be uniformly mixed. Repeat on a weekly basis, or as needed to establish control.

When microbial control is evident, the treating rate may be lowered to 2 gallons of **PHMB P20 D** per 1,000 barrels of water (47.6ppm of product) weekly, or as needed to maintain control.

Badly fouled systems should be cleaned before treatment is begun.

2. **CONTINUOUS METHOD** - Before beginning a continuous treatment, apply a slug treatment of 4 gallons of **PHMB P20 D** per 1,000 barrels of water (95.2 ppm of product). Continue treatment by applying 0.15 to 0.8 gallons (19 to 102 ounces) of **PHMB P20 D** per 1,000 barrels of water (4 to 20 ppm of product).

#### Drilling Muds

1. Calculate the total volume of drilling mud system, and using this volume calculate the number of gallons of **PHMB P20 D** needed to produce a concentration of approximately 3,000 ppm. For example, 126 gallons of **PHMB P20 D** per each 1,000 barrels of total volume will produce this concentration.

2. While the system is circulating, add the amount of **PHMB P20 D** calculated above in a thin stream.

3. As the well depth increases, increasing the total volume of the system, add additional **PHMB P20 D** as required to maintain the proper concentration.

#### Workover Fluids

1. Calculate the total volume of the workover fluid system and, using this volume, calculate the number of gallons of **PHMB P20 D** needed to produce a concentration of approximately 3,000 ppm. For example, 60 gallons of **PHMB P20 D** per each 20,000 Gal (476 barrels) of total volume will produce this concentration.

2. Add **PHMB P20 D** into the system

3. Circulate the workover fluid system until the fluid returns clear.

4. Shut the system down and idle for several hours. Remove the workover fluid. The well should be ready for productive use.

### **Aqueous Paints and Coatings** (Not for use in CA).

For the preservation of aqueous based Paints and Coatings such as paper and wood coatings, paints and coatings used for architectural product finishes, industrial finishes and special purpose coatings. Special purpose coatings include uses as a:

- Preservative for electrodeposition paints or solutions,
- Preservative for photo-plating solutions or coatings,
- Preservative in fount (or fountain) solutions used in the printing process as a maintenance fluid/coating and as a special coating for printing plates, and
- Preservative in spin finish coatings for fibers.

Dosage: 5 lb. to 50 lb. **PHMB P20 D** per 10,000 of product (500 to 5000ppm).

### **[General Information]**

**[PHMB P20 D** is an effective preservative in most aqueous compositions. The concentration required to give protection depends on factors such as the susceptibility of the system to microbiological degradation, the extent to which micro-organisms can gain access and the type of micro-organisms present.]

[PHMB P20 D is a highly effective preservative for use in a wide variety of applications including oil-in-water and water-in-oil emulsions, industrial reagents, silicone systems, cellulose solutions and oil recovery systems. PHMB P20 D can also be used for the preservation of animal hides and skins and certain textiles and cellulosic products.]

### **[Chemical Description]**

[PHMB P20 D is an aqueous solution of PolyHexaMethylene Biguanide hydrochloride and is soluble in water and stable under all normal conditions of storage. The active ingredient, itself, is heat stable and nonvolatile.]

### **[Compatibility]**

[PHMB P20 D is a mild cationic compound and is compatible with nonionic and cationic compounds. PHMB P20 D nonionics and cationics should be metered through separate pumps. PHMB P20 D is not compatible with oxidizing chemicals, most anionic compounds and copper or other divalent metals. PHMB P20 D is precipitated by strong alkalis and complex phosphates. When doubt exists as to the compatibility of PHMB P20 D with other compounds, bottle tests at the concentrations to be used should be made with the material in question.]

[See Technical Information Bulletin for more detailed list of applications and appropriate dosages.]

### **[Packaging sizes include:**

**[Révacil][PHMB P20 D]** is packaged in:

- 1000kg IBCs (≈ 2204.6 lb. ≈ 210.5 US-Gal)
- 200kg drums (≈ 90.7 lb. ≈ 42.1 US-Gal) – 4 drums per pallet
- 20kg pails (≈ 9.1 lb. ≈ 4.21 US-Gal) – 24 drums per pallet
- 5kg pails (≈ 2.3 lb. ≈ 1.05 US-Gal) – 128 pails per pallet (32 cardboard of 4 pails)
- 2.5 gallons, 1 gallon, ½ gallon, and ¼ gallon (quart size) retail containers]

### **[Physical Properties]**

[Density (@20 °C) = 1.045 kg/L]

[Density (@68 °F) ≈ 8.7 lb/US-gal]

[Flash Point °F (TCC): n.a.]

[Pour Point, VF: 32]

[pH at 77 °F: 4.5 (approx.)]

## STORAGE AND DISPOSAL.

*(Bulk / Non-Residential Label:)*

Do not contaminate water, food or feed by storage or disposal.

**Pesticide storage:** Keep container closed when not in use. Store in original container in an area inaccessible to children. Protect from freezing. In case of a leak or spill, soak up with absorbent, such as sand earth, or sawdust, and shovel into waste container. Remove waste to chemical waste area, and dispose of in accordance with pesticide disposal instructions.

**Pesticide Disposal:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

**Container Handling:** Non-refillable container. Do not reuse or refill. Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

*(Residential Products)*

**[Pesticide] Storage and Disposal:** Store in original container and in an area inaccessible to children. Keep container closed when not in use. Protect from freezing. In case of a leak or spill, soak up with absorbent, such as sand earth, or sawdust, and shovel into waste container. Remove waste to chemical waste area, and dispose in accordance with pesticide disposal instructions. Non-refillable container. Do not reuse or refill. Securely wrap original container in several layers of newspaper and discard in trash.

## [NOTICE TO BUYER [AND USER]

### [I- LIMITED WARRANTY FROM LABORATOIRE PAREVA (XXXX)]

Laboratoire Pareva (XXXX) warrants that this product conforms to the chemical description on the label and that it is reasonably fit for the purposes stated on the label when used in accordance with Laboratoire Pareva's (XXXX's) directions under normal conditions of use. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal use conditions, or under conditions not reasonably foreseeable to Laboratoire Pareva (XXXX) and you as buyer or user assume the risk of any such use. Laboratoire Pareva (XXXX) will replace the product or refund the purchase price at your option should this warranty be breached within one year of sale. THE DURATION OF ANY IMPLIED WARRANTIES UNDER APPLICABLE STATE LAWS SHALL LIKEWISE BE LIMITED TO A PERIOD OF ONE YEAR.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

IN NO EVENT SHALL LABORATOIRE PAREVA (XXXX) BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, ON ANY THEORY WHATSOEVER, INCLUDING NEGLIGENCE, and no person is authorized to alter the terms of Laboratoire Pareva's (XXXX's) warranty. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

For warranty assistance, write Business Manager, [REVACIL (Distributor Product Name), Laboratoire Pareva (XXXX), (distributor address) or contact your [product name] [REVACIL] (Distributor Product Name) authorized dealer. This warranty gives you specific legal rights and you may have other rights that vary from state to state.

YOUR AUTHORIZED DEALER GIVES NO WARRANTY IN ADDITION TO LABORATOIRE PAREVA'S (XXXX'S) [WARRANTY] {WARRANTIES} AND DISCLAIMS ALL OTHER WARRANTIES INCLUDING THOSE OF FITNESS OR MERCHANTABILITY

(XXXX) Parenthesis denotes alternate text for distributor labels. XXXX is used solely for illustrative purposes. Additional distributor names may be substituted for XXXX.



OPTIONAL MARKETING TEXT (language that may be used on product labeling or collateral labeling):

- Chlorine-Free Revacil Swimming Pool sanitizer and algistat
- Say Goodbye to the annoying effects of chlorine (No more red eyes!, No more itchy dry skin!, No more odors!, No more bleaching effects!)
- Biguanide based sanitizer that contains no chlorine and is highly stable in use.
- With Revacil you will spend more time treating yourself in your pool than treating your pool!
- Become a happy Revacil user and forget the annoying effects of Chlorine! Say Goodbye to nasty chlorine odor, red eyes and itchy skin. Enjoy your swimming pool with your family and friends.
- Revacil is one of the most simple and user-friendly water treatment program available today.
- Revacil – easy for you, easy for your pool
- Revacil, a reliable product
- The next generation of chlorine-free pool sanitizing
- No chlorine & bad chemical smell
- Protect your pool liner, swimsuit, and hair [from bleaching] [effects of chlorine]
- Clean, Crystal Clear [Pool] Water
- [Use rate table for differing PPM levels and varying swimming pool sizes]
- [Switching Revacil and chlorine can also clean the bio film from the inside of the pool pipes. This will help to extend the life of your pool, as well as, help ensure clean sparkling water season after season.]
- What is Revacil? Revacil is a highly effective biguanide based swimming pool sanitizer and algistat with NO Chlorine. Revacil is very stable; it is not affected by heat, sunlight or changes in pH. Revacil can easily replace chlorine in all types of pools.
- Revacil is registered by the US Environmental Protection Agency (EPA). This biguanide based product has been fully tested all over the world. Pool owners have been using and enjoying Revacil worldwide for over 20 years! Revacil is EPA registered and has been formulated to suit any swimming pool surface and filtration system.
- Revacil: a chlorine-free product
- Totally chlorine-free product
- A clearer pool for a longer period of time
- Revacil is not absorbed by UV rays; therefore saving you money
- Révacil provides persistent control of bacteria and algae
- Révacil is stable, not affected by UV or heat, and lasts longer without any unpleasant side effect like chlorine
- The Révacil SPA line is a great odor free alternative to Bromine and Chlorine
- The Révacil SPA line is a gentle SPA treatment that will eliminate eye irritation, dry skin and bathing suit discoloration.
- Révacil SPA is a highly effective chlorine free EPA registered biguanide SPA sanitizer and algistat.

# PHMB P20 D

[Revacil]

## Technical Information Bulletin

### General Information

PHMB P20 D is a highly effective preservative for use in a wide variety of applications including oil-in-water and water-in-oil emulsions, industrial reagents, silicone systems, cellulose solutions and oil recovery systems. PHMB P20 D can also be used for the preservation of animal hides and skins and certain textiles and cellulosic products.

### Physical Properties

Specific Gravity at 68 °F : 1.04 (approx.)  
Density at 68 °F, lb/gal : 8.7 (approx.)  
Flash Point, °F (TCC) : n.a.  
Pour Point, VF : 32  
pH at 77 °F : 4.5 (approx.)

### Chemical Description

PHMB P20 D is an aqueous solution of PolyHexaMethylene Biguanide hydrochloride and is soluble in water and stable under all normal conditions of storage. The active ingredient, itself, is heat stable and non-volatile.

### Compatibility

PHMB P20 D is a mild cationic compound and is compatible with non-ionic and cationic compounds. PHMB P20 D, non-ionics and cationics should be metered through separate pumps. PHMB P20 D is not compatible with oxidizing chemicals, most of anionic compounds and copper or other divalent metals. PHMB P20 D is precipitated by strong alkalis and complex phosphates. When doubt exists as to the compatibility of PHMB P20 D with other compounds, bottle tests at the concentrations to be used should be made with the material in question.

### Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labelling.

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#### Product

#### Dosage

##### Silicones:

Use PHMB P20 D at levels of 100 to 5,000 ppm for the preservation of silicone systems such as silicone emulsions and silicone dispersions.

1 lb. to 50 lb. PHMB P20 D per 10,000 lb. product.

##### Tunnel Pasteurization:

For the preservation of waters used in tunnel pasteurization and tunnel cooling of sealed packages of canned and bottled foodstuffs, use PHMB P20 D at levels of 100 to 1,000 ppm.

13 fl.oz. to 1 gal. PHMB P20 D per 1,000 gal. tunnel pasteurization water

##### Aqueous Industrial Chemicals:

For the preservation of aqueous industrial chemicals such as reagents, oil-in-water emulsions, water-in-oil emulsions, textile spin finish lubricants, wash water and cellulose solutions, use PHMB P20 D at levels of 100 to 5,000 ppm.

1 lb. to 50 lb. PHMB P20 D per 10,000 lb. product

##### Leather Processing:

Use PHMB P20 D at levels of 100 to 3,000 ppm for the preservation of leather processing solutions.

1 lb to 30 lb. PHMB P20 D per 10,000 lb. product

##### Aqueous Based Polymer Lattices:

Use PHMB P20 D at levels of 500 to 5,000ppm for the preservation of aqueous based polymer lattices such as polyvinyl acetate and polyvinyl alcohol. Do not use to preserve lattices used for paper coating compositions that may contact food.

5 lb. to 50 lb. PHMB P20 D per 10,000 lb. product

##### Aqueous Mineral Slurries:

Use PHMB P20 D at levels of 500 to 5,000ppm for the preservation of aqueous mineral slurries such as calcium carbonate, titanium dioxide. Do not use to preserve slurries used for paper coating compositions that may contact food.

5 lb. to 50 lb. PHMB P20 D per 10,000 lb. product

**Product (Cont'd)****Dosage****Aqueous Based Adhesives:**

Use PHMB P20 D for the preservation of aqueous based adhesives such as animal glues, latex adhesives based on polyvinyl acetate, PVA, starch, synthetic, dextrin, casein and other glues at a concentration of 500 to 5,000 ppm.

Preserved water-based adhesives may be used for food-contact purposes at a maximum use level of 1,000 ppm.

5 lb. to 50 lb. PHMB P20 D per 10,000 lb. product

**Industrial Electrocoats:**

Use PHMB P20 D at levels of 1,000 to 5,000 ppm for the preservation of electrocoat resins and deposition systems.

10 lb. to 50 lb. PHMB P20 D per 10,000 lb. product

**Household Consumer Products:**

Use PHMB P20 D at levels of 250 to 2,500 ppm for the preservation of liquid and solid or paste consumer products such as surface cleaners, floor cleaners, fabric stain removers, fabric softeners, fabric conditioners, laundry detergents, laundry additives, automotive care silicone emulsions, and automotive cleaning products.

2.5lb. to 25 lb. PHMB P20 D per 10,000 lb. product

**Preservation of Fresh Animal Hides and Skins:**

To preserve the integrity of fresh animal hides and skins prior to, or during processing, use 15 fluid ounces to 3 gallons of PHMB P20 D. Add the appropriate quantity of PHMB P20 D to the brine solution during the curing operation or treat hides or skins with an appropriately diluted aqueous solution during other portions of the processing operation.

The specific use rate and contact time needed to control microbial attack will depend upon the degree of decomposition of the hides or skins prior to treatment.

1.0 to 2.6 lbs. of PHMB P20 D per 1,000 Pounds of hides or skins

**Cellulosic Materials and Textiles:**

PHMB P20 D can be used as an agent to control the growth and action of microorganisms, and control generation of odors, on textiles such as cotton, cotton blends, cellulosic materials and synthetic fibers such as non-wovens, tissues, paper and pulps.

0.025% to 2.0% of PHMB P20 D on the dry weight of the substrate to be treated

PHMB P20 D is diluted and applied to give 0.025 to 2.0% on the dry weight of the substrate. Application is by conventional means such as padding, spraying, soaking or exhaustion. The optimum conditions for application of the dilute solution are pH 6.5 to 8.0 and temperature of 20 to 30°C.

The following are examples of products (substrates) suitable for antimicrobial finishing with PHMB P20 D:

- Textiles such as: household products, for example, upholstery, carpet, curtains, wall coverings, mops, dishcloths, yarns, cords, toweling and blankets.
- Cellulosics such as: wipes, tissues, sponges, paper products (non-food contact) such as filters and cellulose pulp.
- Apparel items such as: slacks, shirts, underwear, sweatshirts, sweatpants, socks, oven mitts, slippers, bathrobes, gloves, hats, scarves, jackets, sheets, pillowcases, incontinence pads cover stock, washable incontinence briefs and panties.

**Oil Recovery:**

Not for use in oil recovery systems that employ holding ponds for spent liquids. Do not apply in, over or near marine and/or estuarine oil fields.

Specific rates for use of PHMB P20 D should be determined by bacteriological tests made prior to treatment. These tests should establish (a) the presence of microorganisms, (b) the severity of the problem, and (c) the required treating ratio. The effectiveness of a treatment can be evaluated by similar bacteriological tests. The compatibility of PHMB P20 D with the water should be determined prior to treatment.

Some suggested treatment methods and treating rates for water systems include:

**Oil Field Injection Waters**

1. SLUG METHOD - When the system is noticeably fouled, apply 4 gallons of PHMB P20 D per 1,000 barrels (bbl) of water (95.2 ppm of product). PHMB P20 D should be added to the system at a point where it will be uniformly mixed. Repeat on a weekly basis, or as needed to establish control.

Fouled systems :  
4 gallons of PHMB P20 D per 1,000 bbl of water (95.2 ppm).

When microbial control is evident, the treating rate may be lowered to 2 gallons of PHMB P20 D per 1,000 barrels of water (47.6 ppm of product) weekly, or as needed to maintain control.

Badly fouled systems should be cleaned before treatment is begun.

Clean systems :  
2 gallons of PHMB P20 D per 1,000 bbl of water (47.6 ppm).

**Product (Cont'd)**

**Dosage**

2. CONTINUOUS METHOD - Before beginning a continuous treatment, apply a slug treatment of 4 gallons of PHMB P20 D per 1,000 barrels of water (95.2 ppm of product). Continue treatment by applying 0.15 to 0.8 gallons (19 to 102 fl. Oz.) of PHMB P20 D per 1,000 barrels of water (4 to 20 ppm of product).

Before / During treatment:  
4 / 0.15 to 0.8 Gal of PHMB P20 D per 1,000 barrels of water

Drilling Muds

1. Calculate the total volume of drilling mud system and use this volume to calculate the quantity of PHMB P20 D needed to produce a concentration of approximately 3,000 ppm. For example, 126 gallons of PHMB P20 D per each 1,000 barrels of total volume will produce this concentration.
2. While the system is circulating, add the amount of PHMB P20 D calculated above in a thin stream.
3. As the well depth increases, increasing the total volume of the system, add additional PHMB P20 D as required to maintain the proper concentration.

126 gallons of PHMB P20 D per each 1,000 barrels of drilling mud.

Workover Fluids

1. Calculate the total volume of the workover fluid system and, using this volume, calculate the quantity of PHMB P20 D needed to produce a concentration of approximately 3,000 ppm. For example, 60 gallons of PHMB P20 D per each 20,000 Gal (476 barrels) of total volume will produce this concentration.
2. Add PHMB P20 D into the system
3. Circulate the workover fluid system until the fluid returns clear.
4. Shut the system down and idle for several hours.
5. Remove the workover fluid. The well should be ready for productive use.

60 gallons of PHMB P20 D per each 20,000 Gal of workover fluid

Aqueous Paints and Coatings:

Use PHMB P20 D at levels of 500 to 5,000 ppm for the preservation of aqueous based paints and coatings such as paper and wood coatings, paints and coatings used for architectural product finishes, industrial finishes and special purpose coatings. Special purpose coatings include uses as a:

5 lb. to 50 lb. PHMB P20 D per 10,000 lb. product.

- Preservative for electrodeposition paints or solutions;
- Preservative for photo-plating solutions or coatings;
- Preservative in fount (or fountain) solutions used in the printing process as a maintenance fluid/coating and as a special coating for printing plates; and
- Preservative in spin finish coatings for fibers.

**General Information**

PHMB P20 D is an effective preservative in most aqueous compositions. The concentration required to give protection depends on factors such as the susceptibility of the system to microbiological degradation, the extent to which micro-organisms can gain access and the type of micro-organisms present.

**WARNING**

**Keep Out of Reach of Children**

**Precautionary Statements**

**Hazards to Humans and Domestic Animals**

WARNING: Causes substantial but temporary eye injury. Harmful if swallowed or absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Avoid breathing vapor or mist. Wear goggles or face shield. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals.

**USER SAFETY RECOMMENDATIONS**

Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Scenarios involving drilling muds and workover fluids must use metering pump systems.

**First Aid:**

**If in Eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

**If Swallowed:** Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or doctor. Do not give anything to an unconscious person.

**If on Skin or Clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**If Inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**Environmental Hazards**

This product is toxic to fish. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other water unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of EPA.

**Packaging**

**[PHMB P20 D]** is packaged in:

- 1000kg IBCs (≈ 2204.6 lb. ≈ 210.5 Gal)
- 200kg drums (≈ 90.7 lb. ≈ 42.1 Gal) – 4 drums per pallet
- 20kg pails (≈ 9.1 lb. ≈ 4.21 Gal) – 24 drums per pallet

**[Révacil]** is packaged in:

- 20kg pails (≈ 9.1 lb. ≈ 4.21 Gal) – 24 drums per pallet
- 5kg pails (≈ 2.3 lb. ≈ 1.05 Gal) – 128 pails per pallet (32 cardboard of 4 pails)
- 2.5 gallons, 1 gallon, ½ gallon, and ¼ gallon (quart size) retail containers]

**Storage and Disposal**

Do not contaminate water, food or feed by storage or disposal.

**Pesticide storage:**

Keep container closed when not in use. Store in original container in an area inaccessible to children. Protect from freezing. In case of a leak or spill, soak up with absorbent, such as sand earth, or sawdust, and shovel into waste container. Remove waste to chemical waste area, and dispose of in accordance with pesticide disposal instructions.

**Pesticide disposal:**

Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

**Container Handling:**

Non-refillable container. Do not reuse or refill container. Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

For information, please contact Customer Services at 1-877-REVACIL.

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