Spotless™ Sanitize 15

Spotless™ Sanitize 15 is a non-foaming, fast acting, free rinsing Peroxyacetic Acid based sanitizer. The active ingredient, also known as peracetic acid or simply PAA, is a broad spectrum anti-microbial agent ideal for sanitization in the food and beverage industry, chlorine free bleaching in the laundry and pulp & paper industries, biocide in water treatment and sanitizer for medical applications. Unlike Hydrogen Peroxide it continues to be effective in the presence of catalase and peroxidase and is safe for rinse based food applications and non-rinse based food contacting surface applications, leaving only biodegradable residues that become carbon dioxide and water.

Packaging

Even while unopened in storage, Spotless Sanitize solutions continually generate very small amounts of oxygen gas. Because of this, the product is shipped with a special type of threaded cap. This cap features a gas permeable membrane that permits gas to leave the container, relieving any pressure build-up. In rare circumstances, heavy agitation (for instance, during trucking) may result in liquid moving through the gas permeable membrane so that liquid may be found on the top of the container. This is normal and not a cause for alarm.

Spotless Sanitize solutions are shipped with tamper proof seals. This seal freely rotates over the container opening where the cap with gas permeable membrane is threaded in place. The tamper proof seal is not air tight, as that would interfere with the function of the cap with gas permeable membrane. The seal ensures the cap cannot be removed without first removing the seal.

Operating Conditions

Temperature:	0 - 40°C
pH:	3.0 - 7.5
Concentration:	Varies by application. For all applications, it is recommended that micro-biological tests be performed to confirm that adequate sterilization is achieved.

Applications

SANITIZATION for the FOOD INDUSTRY

FOOD, MEAT, FISH, FRUIT and VEGETABLES: Spotless™ Sanitize 15 can be used both directly and indirectly on raw or processed red meat. The performance is improved by increasing temperature and spray application. It is also effective on poultry. Fish and other seafood can be sanitized by coming in contact with water or ice containing the sanitizer. Fruits and vegetables can be put through spray, dip and brush washers containing the Peroxyacetic Acid solution.

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Soak or Spray for a minimum of 45 seconds with a 0.05% solution (providing 75 ppm peroxyacetic acid). Prepare solution by diluting 0.5 mL per 1 L of potable water. Rinse with potable water. Do not reuse solution.

HARD SURFACES: Spotless™ Sanitize 15 is suitable for uses in spraying, soaking, circulation or flooding applications designed to sanitize pre-cleaned, hard surfaces such as utensils, glass and plastic bottles and containers, walls, floors, drains, pipes and equipment in dairy, beverage, brewery, winery, egg, food processing plants and other clean-in-place (CIP) processes.

All food must be covered or removed from the area to be sanitized. Spray, soak, circulate or flood for 2 to 5 minutes with a solution at a concentration of 0.07 to 0.17% (providing 100 to 250 ppm peroxyacetic acid). Prepare solution by diluting 0.7 to 1.7 mL per 1L of potable water. Drain any excess solution.

PULP & PAPER

Spotless™ Sanitize 15 is an effective biocide that uses the strong oxidizing properties of Peroxyacetic Acid. It is used to prevent bio-film or "slime" formation. In turn, it is a proactive eliminator of odours generated by bacteria in paper mills. In addition, the effectiveness of Spotless™ Sanitize 15 at low temperatures and over a wide pH range makes it an ideal bleaching agent for the pulp and paper industry. The resulting products reach and maintain their brightness goals without yellowing. Spotless™ Sanitize 15 is an environmentally friendly alternative to aldehydes, bromium, organic sulphur, and quaternary ammonium biocides, as well as chlorinated bleaches.

LAUNDRY

The combination of sanitizing and bleaching properties make Spotless™ Sanitize 15 an ideal product for laundry in hotel, restaurants, medical facilities and food processing industries. The strength of the product means that only a small amount is required to be added to a washing machine to attain desired results. It is a chlorine free and environmentally conscious bleaching agent. The effectiveness of Spotless™ Sanitize 15 at low temperatures makes it ideal for energy saving by cold water washing.

WATER TREATMENT and COOLING TOWER

Spotless™ Sanitize 15 is a biocide that will treat industrial and municipal waste water, recycled, RO and cooling water, as well as sanitizing sewage waste. It prevents biofilm and odour formation by eliminating algae, mussel larva, legionella and other bacteria. Its ease of use eliminates expensive capital costs associated with UV, Ozone or Chlorine Dioxide. Spotless™ Sanitize 15 is not chlorinated and has biodegradable decomposition products. It will help with light solids floating clarifiers and improve effectiveness of heat exchangers.

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For RO and other membrane sanitization, clean with appropriate cleaner to remove organic soils. Rinse with potable water or permeate. If necessary, remove mineral deposit with acid cleaner and rinse with potable water or permeate. Fill membrane with 0.4 - 0.5% Spotless™ Sanitize 15 (providing 600 - 700 ppm peroxyacetic acid). Prepare solution by diluting 4 - 5 ml per 1L of potable water. Open and close solenoid valves to ensure the entire system is exposed to the solution. Circulate solution as needed for a minimum of 10 minutes, and up to 4 hours. Rinse with potable water or permeate to remove Spotless Sanitize residue leaving under 1 ppm of PPA.

For continuous RO systems, use 0.02 – 0.06 % Spotless™ Sanitize 15 (providing 30 – 90 ppm peroxyacetic acid). Intermittent feeds should not exceed 0.067 % (providing 100 ppm peroxyacetic acid). Do not use continuous or intermittent feeds for on-line use in potable water or systems with direct food contact.

Please confirm with the membrane manufacturer that peroxyacetic acid is compatible with their membrane.

Extension of Shelf Life

The following analytical procedure allows to test the actual level of active ingredient – peracetic acid – in the product. Even after recommended shelf life of the product has ended due to inevitable degradation of PAA, the product still can be used based upon actual percentage of peracetic acid content. Once the analytical procedure outlined below has been followed and actual level of peracetic acid has been obtained, the necessary corrections to the dilution formulas need to be implemented. To keep the desired concentration on the same level, the amount of the product added to the same amount of water should be increased by the factor of ratio between original PAA concentration in the fresh product (15% for Spotless™ Sanitize 15) and the result of actual PAA measurement in the aged product at hand.

As an example, if the analytical procedure yields 7.5% for peracetic acid concentration, then the amount of the product to be used in preparation instructions should be increased by 2 times: 15% / 7.5% = 2.

Procedure for determination of hydrogen peroxide and peracetic acid content

Instruments: Analytical balance
250mL Erlenmeyer flask
10mL Graduated cylinder
Disposable pipet

Reagents: Potassium Iodide (Solid)
0.1N Potassium Permanganate
1% (w/v) Starch indicator
0.1N Sodium Thiosulfate

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6N Sulfuric Acid (83ml conc. Sulfuric acid into 500mL volumetric flask, dilute with DI water to mark)
DI water (cooled down to 1°C - 10°C)

Phase 1:

1. Add approximately 25ml of DI Water into 250ml Erlenmeyer flask.
2. Place and ZERO a 250ml Erlenmeyer flask on an analytical balance.
3. Using disposable pipet, add approximately 250mg (10-11 drops) of Spotless™ Sanitize 15 solution in the 250ml Erlenmeyer flask, accurately measure and record this weight as "m".
4. Add 10ml 6N Sulphuric Acid.
5. Add DI water until the solution is approximately 100ml.
6. While mixing the solution, start titrating with 0.1N Potassium Permanganate until solution attains a faint pink colour (the first 5ml can be added quickly).
   Note: Do NOT overshoot the end point as excess titrant will react with the next phase of the titration.
7. Record the volume of 0.1N Potassium Permanganate titrated as "A".

Phase 2:

1. Add 2g of Potassium Iodide to the above solution (from Phase 1, Step 6).
2. While mixing, titrate the liberated iodine (brown colour) with 0.1N Sodium Thiosulphate until a pale yellow colour develops.
3. Add 10 drops of Starch Indicator solution. A strong blue colour will appear. Continue to titrate until the solution changes from blue to colourless.
4. Record the volume of 0.1N Sodium Thiosulphate titrated as "B".

Calculations:

$\% H_2O_2 = 0.1701 * A / m$

$\% PAA = 0.3803 * B / m$

m = weight (g) of PAA transferred to 250ml Erlenmeyer flask.
A = volume (ml) of 0.1N Potassium Permanganate titrated.
B = volume (ml) of 0.1N Sodium Thiosulphate titrated.

The data and statements contained in this fact sheet are based on testing information and are believed to be accurate and reliable. This fact sheet is not a Guarantee or Warranty, express or implied, regarding the products use. The product is sold on the condition that the purchaser will do their own tests to determine the suitability of the product in a particular application.

READ THE SDS BEFORE USING THIS PRODUCT.

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