

PURTABS™

EFFERVESCENT SANITIZING / DISINFECTION TABLETS



TECHNICAL AND EFFICACY DATA SHEET

- Hospitals
- Schools
- Nursing Homes
- Daycares
- Restaurants
- Kitchens
- Gyms
- Health Clubs
- Restrooms
- Dental Facilities
- Veterinary Clinics
- Beverage & Food Processing Plants



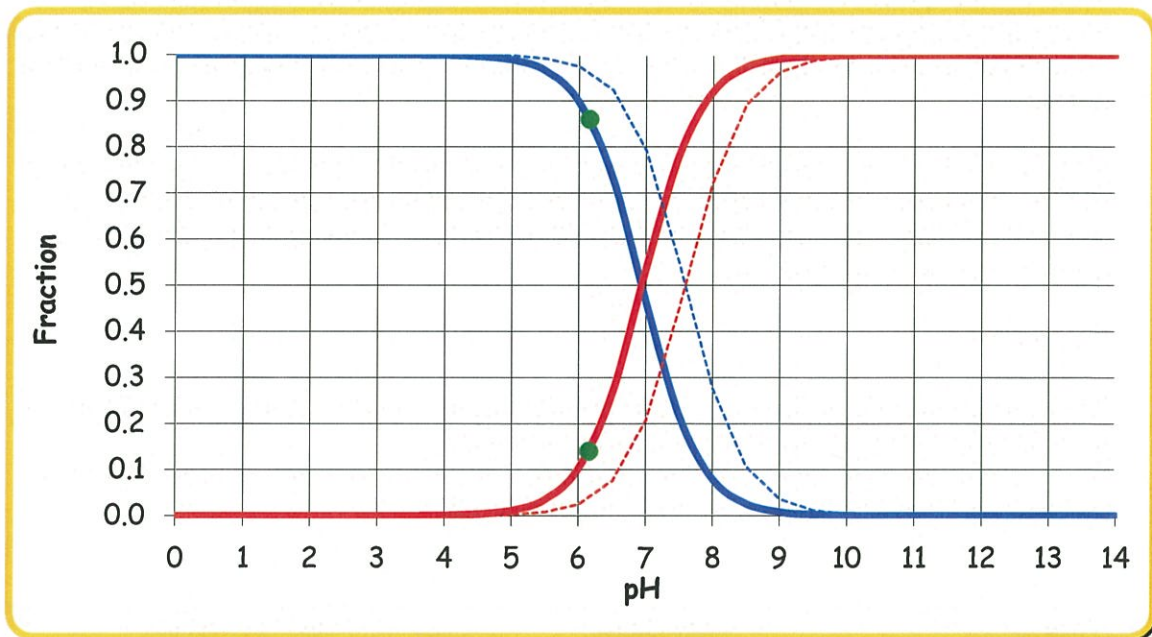
NaDCC contains no caustic and the in use diluted product causes only temporary mild eye irritation if directly impacting the eye. In this way, the product has an HMIS rating of 1/0/0 compared to 3/0/0 for bleach. Because there is no caustic produced, there is a significantly lower health risk.

Why pH is Important

The biologically active ingredient in both bleach and NaDCC is HOCl, when HOCl is in a solution it dissociates as follows:



Studies show that undissociated (HOCl) has four times the anti-microbial killing power compared to the dissociated hypochlorite ion (OCl⁻). It is believed that this is due to the fact that HOCl is very similar to the structure of H₂O (water), of similar molecular size, and is electrically neutral – thus allowing it to penetrate cell membranes as easily as water. The ratio of HOCl to OCl⁻ in a solution is dictated by the solution pH. The more acidic a solution the more HOCl is present the more alkaline a solution the more OCl⁻ is present. The graph below demonstrates the dissociation constant:



As can be seen from the graph, a solution of NaDCC with a pH of 6 to 7 has 80 to 90 percent of the active disinfectant in the form of HOCl, a solution of bleach with a pH of 11 to 12 has less than 10 percent of the active disinfectant in the more effective HOCl form. Essentially this means that NaDCC is far more effective as a disinfectant than bleach at much lower concentrations.

Third Party Air Sampling of PURTABS Applied with the Protexus PX200ES

On March 17, 2017, an Industrial Hygienist from American Environmental Consultants, Inc. (AEC) collected personal (and area) air samples. These samples were analyzed for Chlorine, at the request of EarthSafe Chemical Alternatives, LLC, as part of a worker exposure assessment during application of PURTABS using an electrostatic spraying application (Protexus Electrostatic Sprayer) in a variety of client settings (hospitals, kitchens, etc.). Samples of the Chlorine were collected according to National Institute of Occupational Safety and Health (NIOSH) Analytical Modified Method 6011. The collected samples were submitted to an experienced and accredited laboratory (SGS/Galson Laboratories).

Results

The following table presents the results of the personal sampling in mg/m³ and ppm compared to OSHA PEL ceiling values and the ACGIH TLV's for STEL's and 8-hour TWA's.

Sample Number	Volume (liters)	Sample Type	Sample Result (ppm)	OSHA PEL Ceiling (ppm)	ACGIH TLV (ppm)
17-0068320	15	STEL	<0.1	1	1
17-0068321	90	Personal	<0.2	1	0.5
17-0068319	15	STEL	<0.1	1	1
17-0068316	90	Personal	<0.02	1	0.5
17-0068317	30	Area/STEL	<0.06	1	1
17-0068318	15	STEL	<0.1	1	1
17-0068322	90	Personal	<0.02	1	0.5
17-0068314	0	Blank	NA	NA	NA
17-0068315	0	Blank	NA	NA	NA

Based on laboratory results, all Chlorine concentrations were below the OSHA Permissible Exposure Limits (PEL) and Threshold Limit Values (TLV), established by the American Conference of Governmental Industrial Hygienists (ACGIH).

Protexus Electrostatic Sprayers & Nozzles

For healthcare use, the Protexus Electrostatic Sprayers have been equipped with standard nozzles having one output of 60 microns. Usage guides and standard operating procedures (SOPs) developed for healthcare processes have been to disinfect with a 60-micron size nozzle to ensure simplified training, proper usage in any application -sanitizing or disinfecting – therefore providing repeatable results.

Users will continue to have the option for additional nozzle setting configuration with the availability of a tri-nozzle set at 60, 80, and 100 microns.

Recommended Personal Protective Equipment (PPE)

It is recommended to wear chemical-resistant gloves, safety glasses, and dust mask when diluting tablets.