TECHNICAL BULLETIN

PURELL® Professional Surface Disinfectant

Product Description:

EPA-Registered PURELL Professional Surface Disinfectant is a One-Step Disinfectant and Cleaner designed to kill the most relevant pathogens at work, schools, daycare centers and gyms. The 29.4% Ethyl alcohol based formula is effective against 27 microorganisms, with efficacy against 22 of those organisms in 30 seconds. Ideal for disinfecting hard, non-porous surfaces as well as sanitizing soft surfaces.

Please be sure to read the product label for use directions.

Physical Properties

Appearance: Colorless

Fragrance: Citrus

Form: Liquid

Active:	
Ethyl alcohol	29.4%

Efficacy Data – *In Vitro*

Timed – Exposure Kill Evaluation

Objective: **Evaluate the antimicrobial effectiveness of the product *in vitro.***

Description of Tests: **Testing was conducted according to the U.S. Environmental Protection Agency guidelines in effect at the time for determining efficacy of disinfectants intended for use on dry inanimate surfaces.**

Independent Laboratories: **MicroBioTest, A Division of Microbac laboratories, Sterling, VA 20164 and Microchem Laboratory, Inc., Euless, TX 76040.**

Results:

Test Organisms Reference List	
Hard, Nonporous Surface Disinfection Pathogens	
Bacteria	
Campylobacter jejuni	30 seconds
[1] Escherichia coli (E. coli) [E. coli[1]]	30 Seconds
Klebsiella pneumonia	30 seconds
Listeria monocytogenes (Listeria)	30 seconds
[2] Methicillin-resistant Staphylococcus aureus (MRSA) [MRSA[2]]	30 seconds
Pseudomonas aeruginosa	1 minute
[3] Salmonella enterica [Salmonella[3]]	30 seconds
Staphylococcus aureus (Staph)	1 minute
Streptococcus pneumoniae (Strep)	30 seconds
Streptococcus pyogenes (Strep)	30 seconds
[4] Vancomycin Resistant Enterococcus faecalis (VRE) [VRE[4]]	30 seconds
Vibrio vulnificus	30 seconds
Yersinia enterocolitica	30 seconds
Mold, Mildew & Fungi	
Aspergillus niger (Mold)	5 minutes
Candida albicans	30 seconds
Trichophyton mentagrophytes	30 seconds
Mycobacterium	
Mycobacterium bovis var. BCG (TB)	5 minutes

Viruses Enveloped	
2009-H1N1 Influenza A Virus (H1N1)	30 seconds
Influenza A virus [(Flu Virus)]	30 seconds
Viruses Non-Enveloped	
Hepatitis A virus (HAV)	1 minute
[5] Murine norovirus [Norovirus5]	30 seconds
Feline Calicivirus [as surrogate for Norovirus (Norwalk[-like] virus)]	30 seconds
Polio Type 1 virus	30 seconds
Rhinovirus [(a [common] cause of the common cold)]	30 seconds
Bloodborne Pathogens	
Human Hepatitis B virus (HBV)	30 seconds
Human Hepatitis C virus (HCV)	30 seconds
Human immunodefiency virus Type I (HIV-1)	30 seconds
Food Contact Surface Sanitization Pathogens	
Bacteria	
Escherichia coli (E. coli)	1 minute
Staphylococcus aureus (Staph)	1 minute
Non-Food Contact Surface Sanitization Pathogens	
Bacteria	
Klebsiella pneumonia	10 seconds
Staphylococcus aureus (Staph)	10 seconds
Soft Surface Sanitization Pathogens	
Bacteria	
Klebsiella pneumonia	20 seconds
Staphylococcus aureus (Staph)	20 seconds

Safety and Toxicity Test Results

Objective:	**Evaluate the acute safety and toxicity of product formulation *in vivo***
Description of Tests:	**Testing was conducted according to the U.S. Environmental Protection Agency guidelines in effect at the time for determining acute toxicity of disinfectants intended for use on dry inanimate surfaces.**
Independent Laboratories:	**Stillmeadow, Inc., 12852 Park One Drive, Suger Land, TX 77478**

Results:

Acute Oral Toxicity*:	**Meets EPA requirement for Category IV rating. Greater than 5000 mg/kg.**
Acute Dermal Toxicity*:	**Meets EPA requirement for Category IV rating. Greater than 5000 mg/kg.**
Acute Inhalation Toxicity*:	**Meets EPA requirement for Category IV rating. Greater than 2 mg/liter.**
Acute Eye Irritation:	**Testing Guideline: OCSPP 870.2400** **Results: Under the conditions of the test, the product did not produce eye irritation.** **Toxicity Category IV. Meets EPA requirement for Category IV rating. Minimal effects clearing in less than 24 hours.**
Acute Dermal Irritation*:	**Meets EPA requirement for Category IV rating. Mild or slight irritation at 72 hours (no irritation or slight erythema).**
Skin Sensitization*:	**Meets EPA requirements as a non-sensitizer.**

***The ingredients in this product are generally regarded as safe (GRAS) and toxicity testing was not required for registration of this product.**

Surface Compatibility Test Results

Compatibility Study To Measure The Effects Of
PURELL® Professional Surface Disinfectant On The Properties Of Common Surfaces

Objective:	**Determine if the product is compatible with common surfaces after extended and repeat contact exposures.**
Description of Test:	**Using a standardized test methodology, ten different hard and soft surface materials including vinyl floor flooring were exposed to the product under a worst case simulated use condition to simulate a year worth of extreme use.** **PURELL Professional Surface Disinfectant and seven other commercially available surface disinfectants were soaked for up to 11 cycles in "use dilution."** • **1 cycle = 20 hrs. static soak followed by 2 -4 hr. air dry at room temperature** • **11 cycles = simulates ~ 1300 exposures or one year (3-4x day) with a 10 minute contact time.** **Test materials included:** • **Metals: Aluminum, Anodized Aluminum, Brass, Copper (positive control), Stainless steel 316, Stainless Steel A2** • **Plastics: poly vinyl chloride (PVC) type 1, Polyethylene terephthalate (PET), high density polyethylene (HDPE), and vinyl flooring tile**
Date:	**October 2014**

Conclusions:

PURELL Professional Surface Disinfectant has good compatibility with common hard and soft surface materials. It is not recommended that PURELL Professional Surface Disinfectant be used on untreated copper or brass surfaces.

Cleaning Capability Test Results

Cleaning Study To Measure The Effectiveness Of PURELL® Professional Surface Disinfectant in Removing Soils and Organic Matter from Common Surfaces

Objective:	**Evaluate cleaning performance compared to leading cleaning, sanitizing and disinfecting products found in professional and retail markets.**
Description of Test:	**Standardized test methodology provides numerical evaluation (0 to 100) of a products capability in removing/cleaning five difficult soils from common surfaces.** **Data compared cleaning capability of products on five difficult soils (blood, coke, ketchup, salad dressing, and syrup) applied to four common surfaces (ABS plastic, Formica, stainless steel, vinyl composite).** **Data was generated for PURELL Professional Surface Disinfectant in addition to six leading products.**
Independent Laboratory; Study#:	**Project 14261FM29** **Sterling Laboratories, Toledo, Ohio**
Date:	**December 15, 2014**

Conclusions:

All products had statistically equivalent cleaning performance for the respective soil and surface combinations

Product Stability Test Results

Stability Study To Measure The Properties of
PURELL® Professional Surface Disinfectant Over Time (On Shelf, Unopened, Opened)

Objective:	**Determine if the product meets the performance requirements over the desired two year product shelf life.**
Description of Test:	**Using standardized test methods defined by the EPA and other international standards, testing was completed under accelerated (54°C) and real time (25°C) conditions for up to two years.**

Conclusions:

PURELL Professional Surface Disinfectant has met the requirements necessary to show that the product is stable for a minimum of two years of shelf life if stored according to label conditions.

Document#: