UNIT CHEMICAL CORP.

PRODUCT SPECIFICATION SHEET

LIQUID TIMSEN®

EPA Number 10324-111-507

Overview

LIQUID TIMSEN is an economical 10% ADBAC quat sanitizer for no rinse food contact surfaces.

New Expanded Range Now approved to be used at 1-2 ounce per 4 gallons, 200 -400 ppm active without a rinse.

Contains small amount of IPA to add in rapid drying

Uses

Disinfectant, Sanitizer, Food Contact Sanitizer, Deodorizer, Mildewstat, Fungicide, Virucide*, With Organic Soil Tolerance For Hospitals, Nursing Homes, Whirlpool, Home, Institutional, Industrial, School, Dairy, Equine, Poultry/Turkey, Farm, Veterinary, Restaurant, Food Handling and Process Areas, Wineries, Federally Inspected Meat and Poultry Plants, Bar and Institutional Kitchen Use and for Sanitizing Ice Machines.
Small Fly Ovicidal Treatment.
Formulated for effective Poultry Sanitation.
Formulated for effective Swine Premise Sanitation.
Formulated for effective Potato Farm Sanitation

Use Dilutions

		Quat Active Hard Water	
Hospital disinfectant	1.0 oz per gal of water	800 ppm	--
Virucidal	1.0 oz per gal of water	800 ppm	--
Fungicidal	1.0 oz per gal of water	800 ppm	--
Mold and Mildew	1.0 oz per gal of water	800 ppm	--
Sanitization non-food contact	1.0 oz per 4 gal of water	200 ppm	--
Sanitization food contact	1.0 oz per 4 gal of water	200 ppm	500 ppm

Properties

Appearance @25°C.....Clear Liquid
pH, as is.....6.0-8.0
Density, lbs/U.S. gal (g/ml)..... 8.32 (0.9971)
Viscosity, cps @ 25°C .....<100
Flash Point. SETA, °C (°F) ..... >94 (>201)

Toxicity

Acute Oral LD_{50} 2.94g/kg
Acute Dermal LD_{50}.....>2 g/kg
Eye Irritation ..... Category I
Skin Irritation..... Category I
Not a Skin Sensitizer
DOT Corrosivity ..... Packing Group III

UNIT CHEMICAL CORPORATION - 7360 COMMERCIAL WAY - HENDERSON, NV 89011
(800) 879-8648 - (702) 564-6454 - www.unitchemical.com - info@unitchemical.com

Efficacy

Hospital Disinfection

LIQUID TIMSEN is bactericidal according to the AOAC Use Dilution Test method on hard inanimate surfaces modified in the presence of 5% organic serum at 1 ounce of this product per gallon of water (800 ppm active) Treated surfaces must remain wet for 10 minutes

(Testing is performed per the AOAC UDT/GST method (DIS/TSS-1). Sixty carriers are required on 3 separate lots, one of which must be > 60 days old against Pseudomonas aeruginosa, Salmonella choleraesuis and Staphylococcus aureus. Killing of 59 out of 60 carriers is required (total carriers = 540).)

Organism	Carrier Population	Sample	# Carriers	# Positive
Pseudomonas aeruginosa ATCC #15442	5.6 X 10^6 CFU/Carrier	A (60 Days Old)	60	0/60
	7.0 X 10^5 CFU/Carrier	B	60	1/60
		C	60	0/60
Salmonella choleraesuis ATCC #10708	7.4 X 10^6 CFU/Carrier	A (60 Days Old)	60	0/60
		B	60	0/60
		C	60	0/60
Staphylococcus aureus ATCC #6538	1.1 X 10^7 CFU/Carrier	A (60 Days Old)	60	0/60
		B	60	0/60
		C	60	0/60

Virucidal against

LIQUID TIMSEN was evaluated at 1 ounce per gallon use level (800 ppm quat active), in the presence of 5% serum with a 10 minute contact time and found to be effective against the following viruses on hard nonporous environmental surfaces.

(Testing is performed per EPA Guidance (DIS/TSS-7). Two separate lots are tested. Inactivation of virus must be demonstrated at all dilutions when no cytotoxicity is observed or at all dilutions above the cytotoxic level when it is observed. The data must demonstrate a 3-log reduction in viral titer for both lots (3 lots for Canada).

Organism	Dried Virus Control;	Sample	Result	Log Reduction
Herpes Simplex Type 1 ATCC VR-733	5.5 Log_{10}	A	≤0.5 Log_{10}	≥5.0 Log_{10}
		B	≤0.5 Log_{10}	≥5.0 Log_{10}
Herpes Simplex Type 2 ATCC VR-734	5.75 Log_{10}	A	≤0.5 Log_{10}	≥5.25 Log_{10}
		B	≤0.5 Log_{10}	≥5.25 Log_{10}
Human Immunodeficiency Virus type 1 (HIV 1) HTLV-III_B	5.25 Log_{10}	A	≤1.5Log_{10}	≥3.75 Log_{10}
		B	≤1.5Log_{10}	≥3.75 Log_{10}

Fungicidal against

LIQUID TIMSEN was evaluated at 1 ounce per gallon with a 10 minute contact time and found to be effective against the following fungi on hard nonporous environmental surfaces.

(Testing is performed per the AOAC fungicidal method (DIS/TSS-6). Two separate lots are tested against Trichophyton mentagrophytes in a suspension test. Killing of all fungal spores in 10 minutes is required.)

Organism	Carrier Population	Sample	# Carriers	# Positive
Trichophyton mentagrophytes ATCC #9533	3.1 X 10^5 CFU/Carrier	A	10	0/10
	3.3 X 10^6 CFU/Carrier	B	10	0/10

Mold and Mildew Control

Use **LIQUID TIMSEN** to control the growth of mold and mildew and their odors on hard, non-porous surfaces. Thoroughly wet all treated surfaces completely. Let air-dry. Repeat application weekly or when growth or odor reappears.

Organism	Tile Number	Untreated After 7 Days	Sample A After 7 Days	Sample B After 7 Days
Aspergillus niger ATCC #16404	1	Growth 100%	No Growth 0%	No Growth 0%
	1	Growth 50%	No Growth 0%	No Growth 0%
	3	Growth 50%	No Growth 0%	No Growth 0%
	4	Growth 50%	No Growth 0%	No Growth 0%
	5	Growth 60%	No Growth 0%	No Growth 0%
	6	Growth 80%	No Growth 0%	No Growth 0%
	7	Growth 90%	No Growth 0%	No Growth 0%
	8	Growth 60%	No Growth 0%	No Growth 0%
	9	Growth 90%	No Growth 0%	No Growth 0%
	10	Growth 70%	No Growth 0%	No Growth 0%

Non-Food Contact Surface Sanitizer

Add ¼ ounce of **LIQUID TIMSEN** to 1 gallon of water to sanitize hard porous and non-porous non-food contact surfaces. Treated surfaces must remain wet for 2 minutes. Then wipe with sponge, mop or cloth or allow to air dry. At this dilution food contact surfaces must be rinsed.

Testing is performed per EPA Guidance (DIS/TSS-10). Three lots are required, one of which must be > 60 days old. Testing is performed against Staphylococcus aureus and Klebsiella pneumoniae containing 5% organic load. Enterobacter aerogenes may be substituted for Klebsiella pneumoniae. The results must show a reduction of at least 99.9% in the number of each test microorganism over the parallel control count within 5 minutes.

Organism	Carrier Population	Sample	2 Minute Survivors	Percent Kill
Klebsiella pneumoniae ATCC #4352	4.61 Log_{10}	A (60 Days Old)	<1.48 Log_{10}	>99.9
	5.72 Log_{10}	B	<2.55 Log_{10}	>99.9
		C	<1.87 Log_{10}	>99.9
Staphylococcus aureus ATCC #6538	6.55 Log_{10}	A (60 Days Old)	>1.48 Log_{10}	>99.9
		B	>1.48 Log_{10}	>99.9
		C	>1.56 Log_{10}	>99.9

Food Contact Sanitizer (No Rinse)

At 0.25 ounces per gallon (1 ounce per 4 gallons) (200 ppm) **LIQUID TIMSEN** is an effective food-contact surface sanitizer eliminating 99.999% of the of the following bacteria in 60 seconds in 500 ppm hard water (calculated as $CaCO_3$) according to the AOAC Germicidal and Detergent Sanitizing Action of Disinfectants test.

Testing is performed per the AOAC method (AOAC Germicidal and Detergent Sanitizers) on 3 separate lots, one of which must be > 60 days old, against both Escherichia coli and Staphylococcus aureus. Acceptable results must demonstrate a 99.999% reduction in the number of test microorganisms within 30 seconds.

Organism	Carrier Population	Sample	30 Second Kill CFU/mL	Reduction
Escherichia coli ATCC #11229	8.3×10^7 CFU/Carrier	A	1.8×10^2	>99.999%
		B	3.0×10^1	>99.999%
		C	2.2×10^2	>99.999%
Staphylococcus aureus ATCC #6538	8.4×10^7 CFU/Carrier	A	$<1.0 \times 10^1$	>99.999%
		B	$<1.0 \times 10^1$	>99.999%
		C	$<1.0 \times 10^1$	>99.999%
Campylobacter jejuni ATCC #29428	7.5×10^7 CFU/Carrier	A	$<1.0 \times 10^1$	>99.999%
		B	$<1.0 \times 10^1$	>99.999%
Escherichia coli O157:H7 ATCC #43895	9.0×10^7 CFU/Carrier	A	1.0×10^1	99.999%
		B	1.5×10^1	99.999%
Listeria monocytogenes ATCC #19117	7.7×10^7 CFU/Carrier	A	$<1.0 \times 10^1$	>99.999%
		B	$<1.0 \times 10^1$	>99.999%
Shigella dysenteriae ATCC #11835	7.6×10^7 CFU/Carrier	A	$<1.0 \times 10^1$	>99.999%
		B	$<1.0 \times 10^1$	>99.999%