

Anasphere

Anasphere is a 10% active food contact sanitizer utilizing the four-chain quat, 5th Generation Quat.

EPA Number 10324-131-72786

Use

Hospital disinfectant -
 Virucidal
 Sanitization food contact
 Non food contact sanitizer --
 Laundry Sanitizer

Formulation Anasphere

MQ615M% (50%)	20.000%
Dye* (Optional)	0.005%
Water	<u>79.995%</u>
	100.000%
OR	
MQ624M (80%)	12.500%
Dye* (Optional)	0.005%
Water	<u>87.495%</u>
	100.000%

*

Typical Properties

Appearance @25°C	Clear Liquid
pH, as is	7.5
Density, lbs/U.S. gal (g/ml)	8.26 (0.99)
Viscosity, cps @ 25°C	<100
Flash Point. SETA, °C (°F)	>94 (>201)
RVOC, U.S. EPA, %	2.0

Toxicity Profile

Acute Oral LD₅₀ is 1.85 g/kg
 Acute Dermal LD₅₀ was found to be greater than 2 g/kg
 Eye Irritation – Category I
 Skin Irritation – Category I
 Not a Skin Sensitizer
 DOT Corrosivity – Packing Group II

Efficacy For Anasphere

Hospital Disinfection

This product is bactericidal according to the AOAC Use Dilution Test method on hard inanimate surfaces modified in the presence of 5% organic serum) 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 enterica* and *Staphylococcus aureus*. Killing of 59 out of 60 carriers is required (total carriers = 540).)

	Carrier Population	Sample	# Carriers	# Positive
<i>Pseudomonas aeruginosa</i> ATCC #15442	8.2 X 10 ⁵ CFU/Carrier	A (60 Days Old)	60	0/60
		B	60	0/60
		C	60	0/60

<i>Salmonella enterica</i> ATCC #10708	1.05 X 10 ⁶ CFU/Carrier	A (60 Days Old)	60	0/60
		B	60	0/60
		C	60	0/60
<i>Staphylococcus aureus</i> ATCC #6538	1.55 X 10 ⁶ CFU/Carrier	A (60 Days Old)	60	0/60
		B	60	0/60
		C	60	0/60

Supplemental Organisms

(Testing is performed per the AOAC UDT/GST method. Ten carriers are required on 2 separate lots against each supplemental organism. Killing of 10 out of 10 carriers is required (total carriers = 20).)

	Carrier Population	Sample	# Carriers	# Positive
<i>Burkholderia cepacia</i> ATCC 25416	4.3 X 10 ⁴ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Campylobacter jejuni</i> ATCC 29428	2.9 X 10 ⁵ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Clostridium perfringens</i> -vegetative ATCC 13124	1.34 X 10 ⁵ CFU/Carrier	A	10	0/10
		A	10	0/10
<i>Corynebacterium ammoniagenes</i> ATCC 6871	6.0 X 10 ⁴ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Enterococcus faecium</i> (Ciprofloxacin Resistant)	1.6 X 10 ⁵ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Enterococcus faecium</i> (Penicillin-G Resistant)	1.6 X 10 ⁵ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Enterococcus faecium</i> Vancomycin Resistant (VRE)	1.6 X 10 ⁵ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Escherichia coli</i> 0157:H7 ATCC 35150	5.9 X 10 ⁵ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Klebsiella pneumoniae</i> ATCC 13883	1.8 X 10 ⁴ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Listeria monocytogenes</i> ATCC 984	1.85 X 10 ⁵ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Rhodococcus equi</i> ATCC 7699	4.1 X 10 ⁶ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Salmonella enterica</i> serovar <i>agona</i> ATCC 51957	3.9 X 10 ⁶ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Salmonella enterica</i> serovar <i>anatum</i> ATCC 9270	8.4 X 10 ⁶ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Salmonella enterica</i> serovar <i>infantis</i> ATCC 51741	6.9 X 10 ⁶ CFU/Carrier	A	10	0/10

		B	10	0/10
<i>Salmonella enterica</i> serovar <i>Newport</i> ATCC 27869	3.6 X 10 ⁷ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Salmonella enterica</i> serovar <i>typhimurium</i> ATCC 23564	8.1 X 10 ⁶ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Salmonella typhi</i> ATCC 6539	4.0 X 10 ⁴ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Shigella sonnei</i> ATCC 9290	1.3 X 10 ⁴ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Staphylococcus aureus</i> (Methicillin Resistant) (MRSA) ATCC 33591	1.4 X 10 ⁵ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Staphylococcus aureus</i> (Community Associated Methicillin Resistant) (CA-MRSA) (NRS 123) (Genotype USA400)	9.8 X 10 ⁴ CFU/Carrier	A	10	0/10
		B	10	0/10
<i>Streptococcus equi</i> ATCC 33398	1.78 X 10 ⁶ CFU/Carrier	A	10	0/10
		B	10	0/10

General Disinfection

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 *Salmonella enterica* and *Staphylococcus aureus*. Killing of 59 out of 60 carriers is required (total carriers = 360).)

	Carrier Population	Sample	# Carriers	# Positive
<i>Salmonella enterica</i> ATCC #10708	8.3 X 10 ⁴ CFU/Carrier	A (60 Days Old)	60	0/60
		B	60	0/60
		C	60	0/60
<i>Staphylococcus aureus</i> ATCC #6538	1.1 X 10 ⁷ CFU/Carrier	A (60 Days Old)	60	0/60
		B	60	1/60
		C	60	0/60

Virucidal against

This product was evaluated, 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))

	Dried Virus Control;	Sample	Result	Log Reduction
Avian Influenza A H5N1 virus	5.25 Log ₁₀	A	≤0.5 Log ₁₀	≥4.75 Log ₁₀
		B	≤0.5 Log ₁₀	≥4.75 Log ₁₀
Avian influenza /Turkey/Wisconsin ATCC VR-798	6.0 Log ₁₀	A	≤1.5 Log ₁₀	≥4.5 Log ₁₀
	5.8 Log ₁₀	B	≤1.5 Log ₁₀	≥4.3 Log ₁₀
Canine Distemper ATCC VR-128	6.75 Log ₁₀	A	≤0.5 Log ₁₀	≥6.25 Log ₁₀
		B	≤0.5 Log ₁₀	≥6.25 Log ₁₀

		C	$\leq 0.5 \text{ Log}_{10}$	$\geq 6.25 \text{ Log}_{10}$
Canine Coronavirus ATCC VR-809	5.5 Log_{10}	A	$\leq 0.5 \text{ Log}_{10}$	$\geq 5.0 \text{ Log}_{10}$
		B	$\leq 0.5 \text{ Log}_{10}$	$\geq 5.0 \text{ Log}_{10}$
	5.0 Log_{10}	C	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.5 \text{ Log}_{10}$
Equine Influenza A H3N8 virus	5.5 Log_{10}	A	$\leq 0.5 \text{ Log}_{10}$	$\geq 5.0 \text{ Log}_{10}$
		B	$\leq 0.5 \text{ Log}_{10}$	$\geq 5.0 \text{ Log}_{10}$
Equine Herpes Virus Type 1 ATCC VR-2229 Strain 438/77	4.75 Log_{10}	A	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.25 \text{ Log}_{10}$
		B	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.25 \text{ Log}_{10}$
Hepatitis B Virus	6.85 Log_{10}	A	$\leq 1.79 \text{ Log}_{10}$	$\geq 5.06 \text{ Log}_{10}$
	6.85 Log_{10}	B	$\leq 1.92 \text{ Log}_{10}$	$\geq 4.93 \text{ Log}_{10}$
	7.14 Log_{10}	Confirmatory B	$\leq 2.34 \text{ Log}_{10}$	$\geq 4.80 \text{ Log}_{10}$
Hepatitis C Virus	6.85 Log_{10}	A	$\leq 1.29 \text{ Log}_{10}$	5.56 Log_{10}
	6.85 Log_{10}	B	$\leq 1.13 \text{ Log}_{10}$	5.68 Log_{10}
	6.85 Log_{10}	Confirmatory B	$\leq 1.06 \text{ Log}_{10}$	5.79 Log_{10}
Herpes Simplex Type1 ATCC VR-260	4.5 Log_{10}	A	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.0 \text{ Log}_{10}$
		B	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.0 \text{ Log}_{10}$
	4.5 Log_{10}	C	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.0 \text{ Log}_{10}$
Herpes Simplex Type 2 ATCC VR-734	4.75 Log_{10}	A	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.25 \text{ Log}_{10}$
		B	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.25 \text{ Log}_{10}$
	4.5 Log_{10}	C	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.0 \text{ Log}_{10}$
Human Coronavirus ATCC VR-740	4.5 Log_{10}	A	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.0 \text{ Log}_{10}$
		B	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.0 \text{ Log}_{10}$
		C	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.0 \text{ Log}_{10}$
Human Immunodeficiency Virus type 1 (HIV 1) HTLV-III _B	6.0 Log_{10}	A	$\leq 0.5 \text{ Log}_{10}$	$\geq 5.5 \text{ Log}_{10}$
		B	$\leq 0.5 \text{ Log}_{10}$	$\geq 5.5 \text{ Log}_{10}$
		C	$\leq 0.5 \text{ Log}_{10}$	$\geq 5.5 \text{ Log}_{10}$
Infectious Bovine Rhinotracheitis virus (IBR) ATCC VR-188	4.75 Log_{10}	A	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.25 \text{ Log}_{10}$
		B	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.25 \text{ Log}_{10}$
	5.0 Log_{10}	C	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.5 \text{ Log}_{10}$
Infectious Laryngotracheitis Virus (LT) Strain LT-IVAX	5.0 Log_{10}	A	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.5 \text{ Log}_{10}$
		B	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.5 \text{ Log}_{10}$
		C	$\leq 0.5 \text{ Log}_{10}$	$\geq 4.5 \text{ Log}_{10}$
Influenza A2/Hong Kong ATCC VR-544	5.75 Log_{10}	A	$\leq 0.5 \text{ Log}_{10}$	$\geq 5.25 \text{ Log}_{10}$
		B	$\leq 0.5 \text{ Log}_{10}$	$\geq 5.25 \text{ Log}_{10}$
		C	$\leq 0.5 \text{ Log}_{10}$	$\geq 5.25 \text{ Log}_{10}$
Influenza A2/J305 ATCC VR-100	7.0 Log_{10}	A	$\leq 1.5 \text{ Log}_{10}$	$\geq 5.5 \text{ Log}_{10}$
		B	$\leq 1.5 \text{ Log}_{10}$	$\geq 5.5 \text{ Log}_{10}$

Newcastle disease virus ATCC VR-108	4.75 Log ₁₀	A	≤0.5 Log ₁₀	≥4.25 Log ₁₀
		B	≤0.5 Log ₁₀	≥4.25 Log ₁₀
		C	≤0.5 Log ₁₀	≥4.25 Log ₁₀
Porcine Respiratory & Reproductive (PRRSV) Strain NVSL	5.5 Log ₁₀	A	≤1.5 Log ₁₀	≥4.0 Log ₁₀
		B	≤1.5 Log ₁₀	≥4.0 Log ₁₀
	6.25 Log ₁₀	C	≤0.5 Log ₁₀	≥5.75 Log ₁₀
Porcine Rotavirus ATCC VR-893	7.25 Log ₁₀	A	≤0.5 Log ₁₀	≥6.75 Log ₁₀
		B	≤0.5 Log ₁₀	≥6.75 Log ₁₀
	6.75 Log ₁₀	C	≤0.5 Log ₁₀	≥6.25 Log ₁₀
Pseudorabies virus ATCC VR-135	5.25 Log ₁₀	A	≤0.5 Log ₁₀	≥4.75 Log ₁₀
		B	≤0.5 Log ₁₀	≥4.75 Log ₁₀
	5.5 Log ₁₀	C	≤0.5 Log ₁₀	≥5.0 Log ₁₀
Transmissible Gastroenteritis (TGE) ATCC VR-742	6.25 Log ₁₀	A	≤0.5 Log ₁₀	≥5.75 Log ₁₀
		B	≤0.5 Log ₁₀	≥5.75 Log ₁₀
	6.5 Log ₁₀	C	≤0.5 Log ₁₀	≥6.0 Log ₁₀
Vaccinia virus ATCC VR-742	7.25 Log ₁₀	A	≤0.5 Log ₁₀	≥6.75 Log ₁₀
		B	≤0.5 Log ₁₀	≥6.75 Log ₁₀
		C	≤0.5 Log ₁₀	≥6.75 Log ₁₀

Mold and Mildew Control

The test and control tiles are examined after 7 days of incubation. The presence or absence of fungal growth on tiles is the criterion for determining the effectiveness of the test product. When no visual growth is evident at the end of 7 days, a magnified examination is performed. To be considered a valid test, untreated control tiles must be at least 50% covered with fungal growth after 7 days. The EPA efficacy performance requirements for label claims state that all ten treated replicates must be free of fungal growth.

	Tile Number	Untreated After 7 Days	Sample A After 7 Days	Sample B After 7 Days
Aspergillus niger ATCC #6275	1	Growth 80%	No Growth 0%	No Growth 0%
	2	Growth 100%	No Growth 0%	No Growth 0%
	3	Growth 80%	No Growth 0%	No Growth 0%
	4	Growth 80%	No Growth 0%	No Growth 0%
	5	Growth 80%	No Growth 0%	No Growth 0%
	6	Growth 80%	No Growth 0%	No Growth 0%
	7	Growth 80%	No Growth 0%	No Growth 0%
	8	Growth 100%	No Growth 0%	No Growth 0%
	9	Growth 100%	No Growth 0%	No Growth 0%
	10	Growth 80%	No Growth 0%	No Growth 0%

Food Contact Sanitizer (No Rinse)

This product 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 CaCO₃) 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.

	Initial Organism Population	Sample	30 Second Kill	60 Second Kill
<i>Escherichia coli</i> ATCC #11229	7.92 Log ₁₀	A	5.63 Log ₁₀	6.89 Log ₁₀
		B	5.26 Log ₁₀	6.54 Log ₁₀
		C	5.52 Log ₁₀	6.62 Log ₁₀
<i>Staphylococcus aureus</i> ATCC #6538	7.91 Log ₁₀	A	>7.91 Log ₁₀	>7.91 Log ₁₀
		B	>7.91 Log ₁₀	>7.91 Log ₁₀
		C	>7.91 Log ₁₀	>7.91 Log ₁₀
<i>Aeromonas hydrophila</i> ATCC 23213	8.05 Log ₁₀	A	>7.05 Log ₁₀	-
		B	>7.27 Log ₁₀	-
<i>Campylobacter jejuni</i> ATCC #29428	7.27 Log ₁₀	A	>7.27 Log ₁₀	>7.27 Log ₁₀
		B	>7.27 Log ₁₀	>7.27 Log ₁₀
<i>Clostridium perfringens</i> -vegetative ATCC 13124	7.95 Log ₁₀	A	>6.95 Log ₁₀	-
		B	>6.95 Log ₁₀	-
<i>Enterococcus faecalis</i> Vancomycin resistant (VRE) ATCC 51299	9.69 Log ₁₀	A	>8.69 Log ₁₀	-
		B	>8.69 Log ₁₀	-
<i>Enterobacter sakazakii</i> ATCC 29544	7.99 Log ₁₀	A	>5.33 Log ₁₀	-
		B	5.04 Log ₁₀	-
<i>Escherichia coli</i> O157:H7 ATCC #35150	7.9 Log ₁₀	A	5.11 Log ₁₀	>7.9 Log ₁₀
		B	5.72 Log ₁₀	>7.9 Log ₁₀
<i>Klebsiella pneumoniae</i> ATCC 4352	8.09 Log ₁₀	A	5.08 Log ₁₀	-
		B	>7.09 Log ₁₀	-
<i>Listeria monocytogenes</i> ATCC #984	8.22 Log ₁₀	A	6.39 Log ₁₀	>8.22 Log ₁₀
		B	6.13 Log ₁₀	7.18 Log ₁₀
<i>Salmonella enterica</i> ATCC #10708	6.95 Log ₁₀	A	6.91 Log ₁₀	>6.95 Log ₁₀
		B	>6.95 Log ₁₀	>6.95 Log ₁₀
<i>Salmonella enteritidis</i> ATCC #4931	7.95 Log ₁₀	A	6.07 Log ₁₀	>7.95 Log ₁₀
		B	6.67 Log ₁₀	>7.95 Log ₁₀
<i>Salmonella typhi</i> ATCC 6539	8.14 Log ₁₀	A	>7.14 Log ₁₀	-
		B	>7.14 Log ₁₀	-
<i>Shigella dysenteriae</i> ATCC #9361	7.87 Log ₁₀	A	>7.87 Log ₁₀	>7.87 Log ₁₀
		B	>7.87 Log ₁₀	>7.87 Log ₁₀
<i>Shigella sonnei</i> ATCC #25931	7.6 Log ₁₀	A	7.6 Log ₁₀	-
		B	7.6 Log ₁₀	-
<i>Staphylococcus aureus</i> Methicillin Resistant (MRSA) ATCC 33592	7.98 Log ₁₀	A	>5.55 Log ₁₀	-
		B	>6.98 Log ₁₀	-

<i>Streptococcus pyogenes</i> ATCC 12344	7.78 Log ₁₀	A	>6.78 Log ₁₀	-
		B	>6.78 Log ₁₀	-
<i>Yersinia enterocolitica</i> ATCC #23715	7.88 Log ₁₀	A	>7.88 Log ₁₀	>7.88 Log ₁₀
		B	>7.88 Log ₁₀	>7.88 Log ₁₀

Non-Food Contact Surface Sanitizer

. Treated surfaces must remain wet for 3 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.

	Carrier Population	Sample	60 Second Kill cfu/Carrier	3 Minute Kill cfu/Carrier
<i>Klebsiella pneumoniae</i> ATCC 4352	4.57 Log ₁₀	A (60 Days Old)	1.99 Log ₁₀	4.58 Log ₁₀
		B	4.56 Log ₁₀	4.58 Log ₁₀
		C	4.56 Log ₁₀	4.58 Log ₁₀
<i>Staphylococcus aureus</i> ATCC #6538	4.20 Log ₁₀	A (60 Days Old)	1.92 Log ₁₀	4.11 Log ₁₀
		B	4.20 Log ₁₀	4.11 Log ₁₀
		C	4.20 Log ₁₀	4.11 Log ₁₀