



## AIRCRAFT CLEANERS & DISINFECTANTS

**CALLA® 1452**



*Product description:*  
**NEUTRAL DISINFECTANT CLEANER**

**FEATURES:**

- ▶ A phosphate-free disinfectant and cleaner
- ▶ Detergent
- ▶ Deodorizer
- ▶ Virucide
- ▶ Fungicide (Pathogenic Fungi)
- ▶ Mildewstat (On Hard Non-Porous, Inanimate Surfaces)

**KEY BENEFITS:**

- ▶ Disinfects hard non-porous surfaces by killing 99.9% of SARS-CoV-2 virus strains responsible for Covid-19 in just one step
- ▶ Does not stain aircraft interiors and plastics
- ▶ Included on the US EPA's list N of products with emerging viral pathogens and human coronavirus claims for use against new strains of SARS-CoV-2
- ▶ Disinfects hard, non-porous, and inanimate environmental surfaces, such as glazed ceramic tile, plastic surfaces, floors, walls, metal surfaces, stainless steel surfaces and glazed porcelain (when used as directed)
- ▶ Provides effective cleaning, deodorizing, and disinfecting



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EPA expects all products on List N to kill all strains and variants of SARS-CoV-2. Genetic changes to the virus do not impact the efficacy of disinfectants.

List N disinfectants work by chemically inactivating viruses. The difficulty of killing a virus depends on its physical features, and the recent mutations to SARS-CoV-2 have not changed the basic physical properties. For more information see <https://www.epa.gov/coronavirus/do-disinfectants-kill-newer-strains-coronavirus>

### **SPECS:**

- AMS 1452 (Disinfectant Aircraft, General Purpose) (Meets requirements)
- AMS 1453 (Disinfectant Cleaner For Aircraft Interior) (Meets requirements),
- AMS 1530B (Wipe-Off Cleaner) (Meets requirements)
- 1550B (Cleaner for Interior) (Meets requirements)
- Boeing D6-7127 (Meets requirements)
- Boeing D6-17487 (Meets requirements)
- NAVAIR: 01-1A-509-2
- NSN: 6840-01-600-4177 (5 Gallon Pail)
- NSN: 6840-01-656-7851 (4 Gallon Cases)
- T.O.: 1-1-691, 1C-130A-23 and 1C-5A-23-1

### **APPLICATIONS:**

- ✓ **Disinfection** – To disinfect inanimate, hard, and non-porous surfaces, add 4 ounces of this product per 1 gallon of water. Apply the solution with a mop, cloth, sponge, hand pump trigger sprayer, or low pressure coarse sprayer. That way, all of the surfaces can be thoroughly coated with water. Allow the surfaces to remain wet for 10 minutes.



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#### **APPLICATIONS:**

- ✓ **Mildewstat** – To control mold and mildew (such as *Aspergillus niger*) including the odors they create on pre-cleaned, hard, and non-porous inanimate surfaces, add 4 ounces of this product per 1 gallon of water. Apply the solution with a cloth, mop, sponge, or hand pump trigger sprayer. Make sure all of the surfaces are completely covered with water. Allow the surfaces to air dry after covering them with water. Prepare a fresh solution for each use. Repeat application at weekly intervals or when mildew growth appears.
- ✓ **Fungicidal Activity** – At the 4 ounces per dilution level, this product is fungicidal against pathogenic fungi, such as *Trichophyton Mentagrophytes* and *Candida Albicans*. Apply the solution with a cloth, sponge, or hand pump trigger sprayer to hard and non-porous surfaces. Allow the surface to remain wet for 10 minutes. Remove the excess liquid after 10 minutes. The diluted product should be applied daily or more frequently if it is used heavily in a facility.

#### **PHYSICAL PROPERTIES:**

- ▶ **% Active:** 2.713%
- ▶ **Density:** 8.38 lbs/gal
- ▶ **Flash Point:** Not Flammable
- ▶ **pH:** 6.4

#### **AVAILABLE PACK SIZES:**

- ▶ Case of 4 Gallons (**Calla® 1452 Concentrate**)-009450]
- ▶ 5 Gallon Pails (**Calla® 1452 Concentrate**)-007247]
- ▶ Starter Kit (**Calla® 1452 RTU Pre-Metered Spray Bottles**)-103793]
- ▶ Case of 24 Refill Cartridges (**Calla® 1452 RTU Pre-Metered Spray Bottles**)- 103795]

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#### VIRUCIDAL DATA:

**Test Method:** U.S. E.P.A. Pesticide Assessment Guidelines, Subdivision G: Product Performance, Section 91-2 (f), and Section 91-30, (d), (e), November 1982.

Protocols for Testing the Efficacy of Disinfectants against Hepatitis B Virus (HBV) (EPA, Federal Register, Vol. 65, No. 166, 8/25/2000, p. 51828).

Protocol for Testing Disinfectants against Hepatitis C Virus using Bovine Viral Diarrhea Virus as approved by the U.S. EPA on August 15, 2002.

**Test Conditions:** 10 minute contact time, 5% organic soil load, sterile glass petri dishes, 400 ppm hard water, 21-24°C exposure temperature, and 4 oz/gal dilution.

#### Results:

Test Organism	Sample	Titer Reduction
*Avian Influenza A Virus (H3N2) (Avian Ressortant) (ATCC VR-2072)	A	$\geq 4.25 \log_{10}$
	B	$\geq 4.25 \log_{10}$
*Avian Influenza Virus, Type A (Turkey/WIS/66) (H9N2)	A	$\geq 4.0 \log_{10}$
	B	$\geq 4.0 \log_{10}$
*Bovine Rhinotracheitis, strain LA (ATCC VR-188)	A	$\geq 5.0 \log_{10}$
	B	$\geq 5.0 \log_{10}$
‡Bovine Viral Diarrhea Virus (BVDV)	A	$5.9 \log_{10}$
	B	$5.9 \log_{10}$
*Canine Distemper Virus, strain Lederle (ATCC VR-128)	A	$\geq 6.25 \log_{10}$
	B	$\geq 6.25 \log_{10}$



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**VIRUCIDAL DATA:**

Test Organism	Sample	Titer Reduction
*Feline Picornavirus, strain FRV (ATCC VR-649)	A B	≥4.25 log <sub>10</sub> ≥4.25 log <sub>10</sub>
†Hepatitis B Virus (HBV) (Duck Hepatitis B Virus-DHBV)	A B	4.5 log <sub>10</sub> 4.7 log <sub>10</sub>
‡Hepatitis C Virus (HCV) (Bovine Viral Diarrhea Virus-BVDV)	A B	5.9 log <sub>10</sub> 5.9 log <sub>10</sub>
*Herpes Simplex Type 1 (ATCC VR-260)	A B	≥5.0 log <sub>10</sub> ≥5.0 log <sub>10</sub>
*Herpes Simplex Type 2 (ATCC VR-734)	A B	≥6.0 log <sub>10</sub> ≥6.0 log <sub>10</sub>
*Human Coronavirus (ATCC VR-740, strain 229E)	A B	≥3.0 log <sub>10</sub> ≥3.0 log <sub>10</sub>
*Human Immunodeficiency Virus, HTLV-III <sub>RF</sub> , strain of HIV-1 (associated with AIDS)	A B	≥3.5 log <sub>10</sub> ≥3.5 log <sub>10</sub>
*Human Immunodeficiency Virus type 2 (HIV-2), strain CBL-20	A B	≥3.25 log <sub>10</sub> ≥3.25 log <sub>10</sub>
*Influenza A2, strain Hong Kong (ATCC VR-544)	A B	≥4.25 log <sub>10</sub> ≥4.25 log <sub>10</sub>
*Pandemic 2009 H1N1 Influenza A Virus	(Refer to Note below table on next page)	
*Paramyxovirus (Mumps) (ATCC VR-1438)	A B	≥3.0 log <sub>10</sub> ≥3.0 log <sub>10</sub>



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#### VIRUCIDAL DATA:

Test Organism	Sample	Titer Reduction
*Porcine Respiratory & Reproductive Syndrome Virus (PRRSV), strain NVSL	A	$\geq 5.0 \log_{10}$
	B	$\geq 5.0 \log_{10}$
*Pseudorabies, strain Aujeszky (ATCC VR-135)	A	$\geq 5.25 \log_{10}$
	B	$\geq 5.25 \log_{10}$
*Rabies Virus (attenuated CDC ERA strain)	A	$3.0 \log_{10}$
	B	$3.0 \log_{10}$
*Rotavirus, strain SA-11 (ATCC VR-899)	A	$4.5 \log_{10}$
	B	$4.5 \log_{10}$
*SARS Associated Coronavirus (ZeptoMetrix)	A	$3.03 \log_{10}$
	B	$3.03 \log_{10}$
*Vaccinia, strain WR (ATCC VR-119)	A	$\geq 5.5 \log_{10}$
	B	$\geq 5.5 \log_{10}$

**Conclusions:** Under the conditions of this investigation, **Calla® 1452** demonstrated virucidal activity against Avian Influenza A Virus (H3N2), Avian Influenza Virus, Type A (H9N2), Bovine Rhinotracheitis, Bovine Viral Diarrhea Virus (BVDV), Canine Distemper Virus, Feline Picornavirus, Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), Herpes Simplex Type 1, Herpes Simplex Type 2, Human Coronavirus, Human Immunodeficiency Virus (HIV-1), Human Immunodeficiency Virus Type 2 (HIV-2), Influenza A2, Pandemic 2009 H1N1 Influenza A Virus, Paramyxovirus (Mumps), Porcine Respiratory & Reproductive Syndrome Virus (PRRSV), Pseudorabies, Rabies Virus, Rotavirus, SARS Associated Coronavirus, and Vaccinia, according to criteria established by the U.S. Environmental Protection Agency for registration and labeling of a disinfectant product as a virucide.

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#### VIRUCIDAL DATA:

**Note:** Per the EPA guidance document dated October 21, 2009, disinfectant products that bear label claims against human, avian, or swine influenza A virus, and have submitted and received approval of efficacy data to support these label claims, may include a label claim against the Pandemic 2009 H1N1 Influenza A Virus.

#### DISINFECTION DATA:

**Test Method:** AOAC Use Dilution

**Test Conditions:** 5% organic soil load, 10 minute contact time, stainless steel carrier substrates, 400 ppm hard water, 20°C exposure temperature, and 4 oz/gal dilution.

#### Results:

Test Organism	No. of Carriers		
	Sample	Exposed	Positive
Staphylococcus aureus (ATCC 6538)	A	60	1
	B	60	1
	C	60	1
Salmonella (choleraesuis) enterica (ATCC 10708)	A	60	0
	B	60	0
	C	60	1
Pseudomonas aeruginosa PRD-10 (ATCC 15442)	A	60	0
	B	60	0
	C	60	1
Ampicillin resistant Acinetobacter baumannii (Fairfax Hospital CI 02001)	A	10	0
	B	10	0

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### DISINFECTION DATA:

Test Organism	No. of Carriers		
	Sample	Exposed	Positive
Bactrim resistant Acinetobacter baumannii (Fairfax Hospital CI 02001)	A	10	0
	B	10	0
Bordetella bronchiseptica (ATCC 31437)	A	10	0
	B	10	0
Cefazolin resistant Acinetobacter baumannii (Fairfax Hospital CI 02001)	A	10	0
	B	10	0
Ceftazdime resistant Acinetobacter baumannii (Fairfax Hospital CI 02001)	A	10	0
	B	10	0
Ceftriaxone resistant Acinetobacter baumannii (Fairfax Hospital CI 02001)	A	10	0
	B	10	0
Ciprofloxacin resistant Acinetobacter baumannii (Fairfax Hospital CI 02001)	A	10	0
	B	10	0
Community Associated Methicillin Resistant Staphylococcus aureus (CA-MRSA) (NRS 123, Genotype USA400)	A	10	0
	B	10	0
	C	10	0
Community Associated Methicillin Resistant Staphylococcus aureus (CA-MRSA) (NRS 384, Genotype USA300)	A	10	0
	B	10	0
	C	10	0
Corynebacterium ammoniagenes (ATCC 6871)	A	10	0
	B	10	0
Ciprofloxacin resistant Acinetobacter baumannii (Fairfax Hospital CI 02001)	A	10	0
	B	10	0

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### DISINFECTION DATA:

Test Organism	No. of Carriers		
	Sample	Exposed	Positive
Community Associated Methicillin Resistant Staphylococcus aureus (CA-MRSA) (NRS 123, Genotype USA400)	A	10	0
	B	10	0
	C	10	0
Community Associated Methicillin Resistant Staphylococcus aureus (CA-MRSA) (NRS 384, Genotype USA300)	A	10	0
	B	10	0
	C	10	0
Corynebacterium ammoniagenes (ATCC 6871)	A	10	0
	B	10	0
Enterobacter aerogenes (ATCC 13048)	A	10	0
	B	10	0
Enterobacter cloacae (ATCC 23355)	A	10	0
	B	10	0
Enterobacter cloacae (clinical isolate)	A	10	0
	B	10	0
Enterococcus faecalis (ATCC 19433)	A	10	0
	B	10	0
Enterococcus faecalis (clinical isolate)	A	10	0
	B	10	0
Escherichia coli (ATCC 11229)	A	10	0
	B	10	0
Escherichia coli (clinical isolate)	A	10	0
	B	10	0
Fusobacterium necrophorum (ATCC 27852)	A	10	0
	B	10	0

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**DISINFECTION DATA:**

Test Organism	No. of Carriers		
	Sample	Exposed	Positive
Gentamicin resistant Acinetobacter baumannii (Fairfax Hospital CI 02001)	A	10	0
	B	10	0
Levofloxacin resistant Acinetobacter baumannii (Fairfax Hospital CI 02001)	A	10	0
	B	10	0
Klebsiella pneumoniae subsp. pneumoniae (ATCC 13883)	A	10	0
	B	10	0
Lactobacillus casei subsp. rhamnosus (ATCC 7469)	A	10	0
	B	10	0
Listeria monocytogenes (ATCC 35152)	A	10	0
	B	10	0
Methicillin Resistant Staphylococcus aureus (MRSA) (ATCC 33592)	A	10	0
	B	10	0
Pasteurella multocida (ATCC 7707)	A	10	0
	B	10	0
Proteus mirabilis (ATCC 9921)	A	10	0
	B	10	0
Proteus mirabilis (ATCC 25933)	A	10	0
	B	10	0
Proteus vulgaris (ATCC 13315)	A	10	0
	B	10	0
Salmonella (paratyphi B) enterica (ATCC 8759)	A	10	0
	B	10	0

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Test Organism	No. of Carriers		
	Sample	Exposed	Positive
Salmonella (pullorum) enterica (ATCC 9120)	A	10	0
	B	10	0
Salmonella (typhi) enterica (ATCC 6539)	A	10	0
	B	10	0
Salmonella (typhimurium) enterica (ATCC 14028)	A	10	0
	B	10	0
Salmonella (enteritidis) enterica (ATCC 13076)	A	10	0
	B	10	0
Serratia marcescens (ATCC 8100)	A	10	0
	B	10	0
Shigella dysenteriae (ATCC 12180)	A	10	0
	B	10	0
Shigella flexneri Type 2b (ATCC 12022)	A	10	0
	B	10	0
Shigella sonnei (ATCC 25931)	A	10	0
	B	10	0
Staphylococcus aureus subsp. aureus (ATCC 33592)	A	10	0
	B	10	0
Staphylococcus aureus (clinical isolate)	A	10	0
	B	10	0
Staphylococcus epidermidis (ATCC 29641)	A	10	0
	B	10	0
Staphylococcus epidermidis (clinical isolate)	A	10	0
	B	10	0

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Test Organism	No. of Carriers		
	Sample	Exposed	Positive
Streptococcus pyogenes Group A (ATCC 19615)	A	10	0
	B	10	0
Streptococcus pyogenes (clinical-flesh eating strain, BIRD M3)	A	10	0
	B	10	0
Tobramycin resistant Acinetobacter baumannii (Fairfax Hospital CI 02001)	A	10	0
	B	10	0
Vancomycin Resistant Enterococcus faecalis (VRE) (ATCC 51575)	A	10	0
	B	10	0
Vancomycin Intermediate Resistant Staphylococcus aureus (VISA) (HIP-5836)	A	10	0
	B	10	0
Xanthomonas maltophilia (clinical isolate)	A	10	0
	B	10	0
Xanthomonas axonopodis pathovar citri @ a dilution ratio of 1:13.5 (2000 ppm active quaternary)	A	10	0
	B	10	0

**Conclusions:** Under the conditions of this investigation, **Calla® 1452** demonstrated disinfectant activity against *Staphylococcus aureus*, *Salmonella (choleraesuis) enterica*, *Pseudomonas aeruginosa* PRD-10, Ampicillin resistant *Acinetobacter baumannii*, Bactrim resistant *Acinetobacter baumannii*, *Bordetella bronchiseptica*, Cefazolin resistant *Acinetobacter baumannii*, Cefprozil resistant *Acinetobacter baumannii*, Ceftriaxone resistant *Acinetobacter baumannii*, Ciprofloxacin resistant *Acinetobacter baumannii*, Community Associated Methicillin Resistant *Staphylococcus aureus* (CAMRSA) (NRS 123, Genotype USA400), Community Associated Methicillin Resistant *Staphylococcus aureus* (CA-MRSA) (NRS384, Genotype USA300), *Corynebacterium ammoniagenes*, *Enterobacter aerogenes*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Escherichia coli*, *Fusobacterium necrophorum*, Gentamicin resistant *Acinetobacter baumannii*, Levofloxacin resistant *Acinetobacter baumannii*, *Klebsiella pneumonia* subsp.

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pneumoniae, Lactobacillus casei subsp. rhamnosus, Listeria monocytogenes, Methicillin Resistant Staphylococcus aureus (MRSA), Pasteurella multocida, Proteus mirabilis (ATCC 9921), Proteus mirabilis (ATCC 25933), Proteus vulgaris, Salmonella (paratyphi B) enterica, Salmonella (pullorum) enterica, Salmonella (typhi) enterica, Salmonella (typhimurium) enterica, Salmonella (enteritidis) enterica, Serratia marcescens, Shigella dysenteriae, Shigella flexneri Type 2b, Shigella sonnei, Staphylococcus aureus subsp. aureus, Staphylococcus epidermidis, Streptococcus pyogenes Group A, Streptococcus pyogenes (clinical flesh eating strain, BIRD M3), Tobramycin resistant Acinetobacter baumannii, Vancomycin Resistant Enterococcus faecalis (VRE), and Vancomycin Intermediate Resistant Staphylococcus aureus (VISA), according to criteria established by the U.S. Environmental Protection Agency for registration and labeling of a disinfectant product as a bactericide.

**Calla® 1452** also demonstrated disinfectant activity against the following antibiotic resistant clinical isolates: Enterobacter cloacae, Enterococcus faecalis, Escherichia coli, Staphylococcus aureus, Staphylococcus epidermidis, and Xanthomonas maltophilia. At a dilution ratio of 1:13.5 (2000 ppm active quaternary), **Calla® 1452** demonstrated disinfectant activity against Xanthomonas axonopodis pathovar citri (Citrus Canker Disease).

#### **FUNGICIDAL DATA:**

**Test Method:** AOAC Fungicidal Activity of Disinfectants

**Test Conditions:** 5% organic soil load, 20°C exposure temperature, 200 ppm hard water, and 4 oz/gal dilution.

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**FUNGICIDAL DATA:**

**Results:**

Test Organism	Sample	Exposure Time (min.) vs. Growth		
		5 Min	10 Min	15 Min
Trichophyton mentagrophytes (ATCC 9533)	A	+	0	0
	B	+	0	0
Candida albicans (ATCC 10231)	A	0	0	0
	B	0	0	0

**Conclusions:** Under the conditions of this investigation, **Calla® 1452** demonstrated fungicidal activity against Trichophyton mentagrophytes and Candida albicans, according to criteria established by the U.S. Environmental Protection Agency for registration and labeling of a disinfectant product as a fungicide.

**MILDEW FUNGISTATIC DATA:**

**Test Method:** Hard Surface Mildew Fungistatic Test

**Test Organism:** Aspergillus niger (ATCC 6275)0

**Test Conditions:** 400 ppm hard water, ceramic tile carriers, and 4 oz/gal dilution.

**Results:**

Sample	No. of Exposed Tiles	No. of Tiles Showing Growth
A	10	0
B	10	0
Control	10	10

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#### **MILDEW FUNGISTATIC DATA:**

**Conclusion:** Under the conditions of this investigation, **Calla® 1452** demonstrated fungistatic activity against *Aspergillus niger*, according to criteria established by the U.S. Environmental Protection Agency for registration and labeling of a disinfectant product as a fungistat.



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