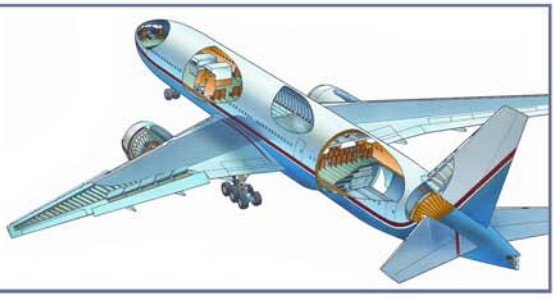
Calla® 1452
Neutral Disinfectant Concentrated Cleaner



Description:

Calla® 1452 meets the requirements of AMS 1452, AMS 1530, AMS 1453, AMS 1550, Boeing D6-7127, and D6-17487. The **Calla® 1452 Neutral Disinfectant Cleaner** is a phosphate-free formulation that is designed to provide effective cleaning, deodorizing, and disinfecting. This product, when used as directed, is formulated to disinfect hard, non-porous, and inanimate environmental surfaces. These surfaces include glazed ceramic tile, plastic surfaces, floors, walls, metal surfaces, stainless steel surfaces, and glazed porcelain.

Application:

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.

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.

Features:

- Cleaner
- Detergent
- Deodorizer
- Mildewstat (On Hard Non-Porous, Inanimate Surfaces)
- Disinfectant
- Fungicide (Pathogenic Fungi)
- Virucide

Physical Properties:

• % Active -	2.713%
• Density -	8.38 lbs/gal
• pH -	6.4
• Flash Point -	Not flammable

Specs:

- AMS 1452 Disinfectant Aircraft, General Purpose
- AMS 1453 (when diluted per label instructions)
- AMS 1530B Wipe-Off Cleaner
- AMS 1550B Cleaner for Interior
- Boeing D6-7127
- NAVAIR: 01-1A-509-2
- NSN: 6840-01-561-3126, Quart bottles
- NSN: 6840-01-600-4177, 5 gal pail
- T.O.: 1-1-691
- T.O.: 1C-130A-23
- T.O.: 1C-5A-23-1

Packaging:

Calla® 1452 is available as a concentrate in a case of 12 quarts (007245), a case of 4 gallons (009450), 5 gallon pails (007247), and 55 gallon drums (007248).
Pre-metered spray bottles of **Calla 1452® RTU** are available as a Starter Kit (103793) and a case of 24 Refill Cartridges (103795).
See the **Calla® 1452 RTU** technical data sheet for more details.

See next page to Page 11 For **Calla® 1452** Data

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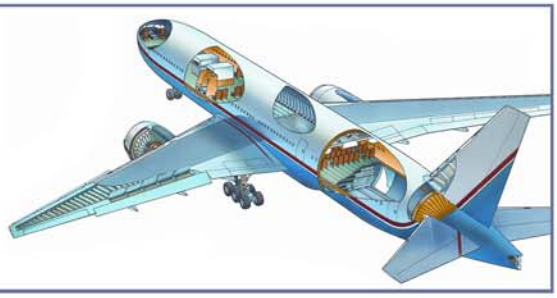
Rev: 9095 A
4/9/2019



Virucidal Data:

Virucidal Data For Calla® 1452

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	$\geq 6.25 \log_{10}$
*Feline Picornavirus, strain FRV (ATCC VR-649)	A	$\geq 4.25 \log_{10}$
	B	$\geq 4.25 \log_{10}$

Virucidal Data Continued On Next Page

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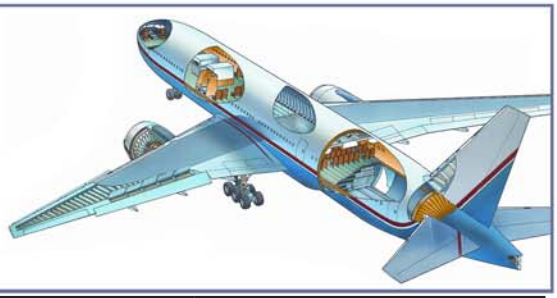

Virucidal Data Continued From Page 2:

†Hepatitis B Virus (HBV) (Duck Hepatitis B Virus-DHBV)	A	4.5 $\log_{10}$
	B	4.7 $\log_{10}$
‡Hepatitis C Virus (HCV) (Bovine Viral Diarrhea Virus-BVDV)	A	5.9 $\log_{10}$
	B	5.9 $\log_{10}$
*Herpes Simplex Type 1 (ATCC VR-260)	A	≥5.0 $\log_{10}$
	B	≥5.0 $\log_{10}$
*Herpes Simplex Type 2 (ATCC VR-734)	A	≥6.0 $\log_{10}$
	B	≥6.0 $\log_{10}$
Test Organism	**Sample**	**Titer Reduction**
*Human Coronavirus (ATTC VR-740, strain 229E)	A	≥3.0 $\log_{10}$
	B	≥3.0 $\log_{10}$
*Human Immunodeficiency Virus, HTLV-III$_{RF}$, strain of HIV-1 (associated with AIDS)	A	≥3.5 $\log_{10}$
	B	≥3.5 $\log_{10}$
*Human Immunodeficiency Virus type 2 (HIV-2), strain CBL-20	A	≥3.25 $\log_{10}$
	B	≥3.25 $\log_{10}$
*Influenza A$_2$, strain Hong Kong (ATCC VR-544)	A	≥4.25 $\log_{10}$
	B	≥4.25 $\log_{10}$
*Pandemic 2009 H1N1 Influenza A Virus	(Refer to NOTE on next page.)	
*Paramyxovirus (Mumps) (ATCC VR-1438)	A	≥3.0 $\log_{10}$
	B	≥3.0 $\log_{10}$
*Porcine Respiratory & Reproductive Syndrome Virus (PRRSV), strain NVSL	A	≥5.0 $\log_{10}$
	B	≥5.0 $\log_{10}$
*Pseudorabies, strain Aujeszky (ATCC VR-135)	A	≥5.25 $\log_{10}$
	B	≥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 $\log_{10}$

Virucidal Data Continued On Next Page

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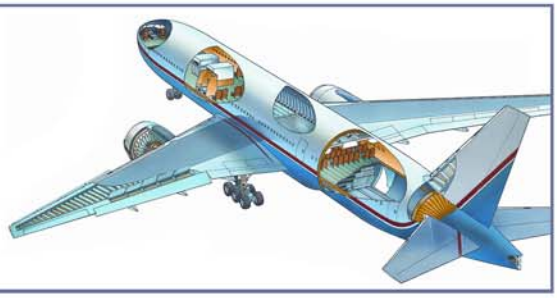

Virucidal Data Continued From Page 3:

*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 $\log_{10}$

Virucidal Data Conclusions:

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.

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.

See Next Page For Disinfection Data

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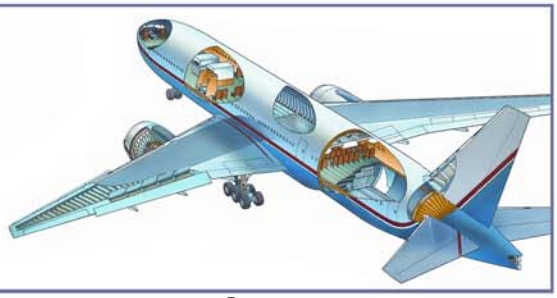

Disinfection Data:

Disinfection Data For Calla® 1452

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:

		No. of Carriers	
Test Organism	**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
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

Disinfection Data Continued On Next Page

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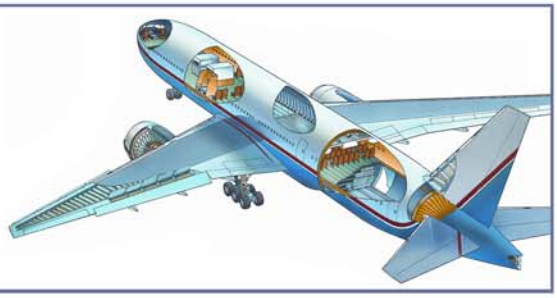

Disinfection Data Continued From Page 5:

Ciprofloxacin resistant *Acinetobacter baumannii* (Fairfax Hospital CI 02001)	A	10	0
	B	10	0
	No. of Carriers		
Test Organism	**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
Gentamicin resistant *Acinetobacter baumannii* (Fairfax Hospital CI 02001)	A	10	0
	B	10	0

Disinfection Data Continued On Next Page

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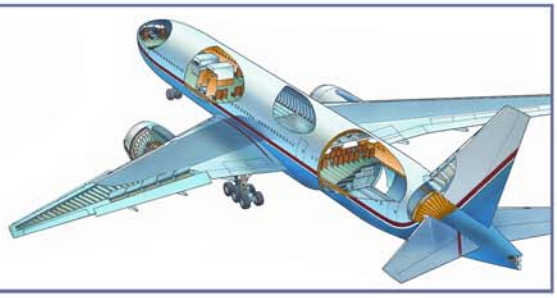

Disinfection Data Continued From Page 6:

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
	No. of Carriers		
Test Organism	**Sample**	**Exposed**	**Positive**
Proteus vulgaris (ATCC 13315)	A	10	0
	B	10	0
Salmonella (*paratyphi B*) *enterica* (ATCC 8759)	A	10	0
	B	10	0
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

Disinfection Data Continued On Next Page

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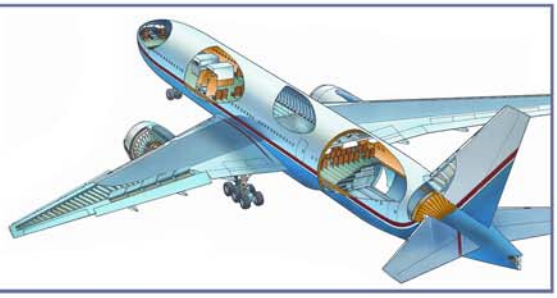

Disinfection Data Continued From Page 7:

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
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
Xanthamonas 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

See Next Page For Disinfection Data Conclusions

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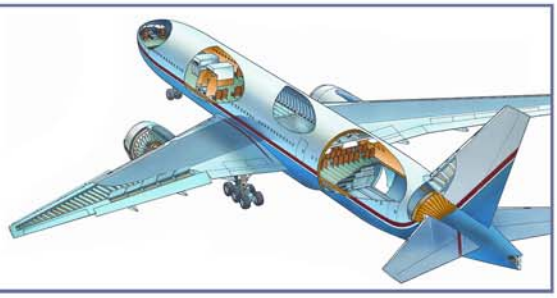

Disinfection Data Conclusions:

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, Ceftazdime 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. 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 Xanthamonas 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).

See Next Page For Fungicidal Data

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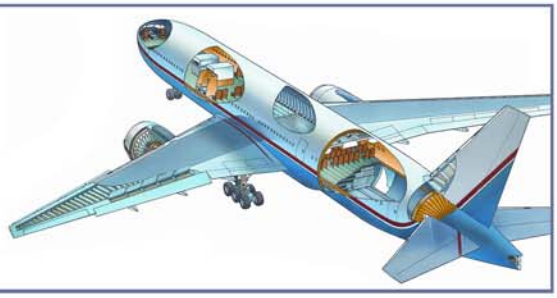

Fungicidal Data:

Fungicidal Data For Calla® 1452

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.

Results:

		Exposure Time (min.) vs. Growth		
Test Organism	**Sample**	**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

Fungicidal Data Conclusions:

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.

See Next Page For Mildew Fungistatic Data

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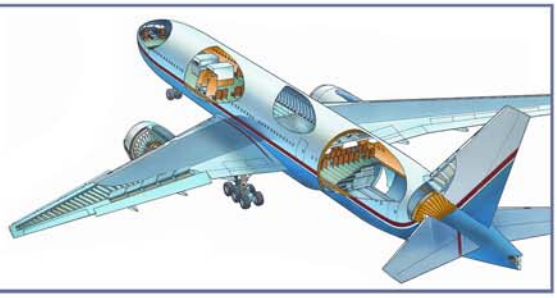

Mildew Fungistatic Data:

Mildew Fungistatic Data For Calla® 1452

Test Method: Hard Surface Mildew Fungistatic Test

Test Organism: *Aspergillus niger* (ATCC 6275)

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

Mildew Fungistatic Data Conclusions:

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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