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Attn: Dolana Blount
Pure BioScience
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Date: 19-Nov-2008

SMI/REF: 0810-828

Product: **AXEN 30** (received 28-Oct-2008)

Dilution: As received

Page 1 of 4

AMS 1452B
DISINFECTANT, AIRCRAFT; GENERAL PURPOSE

3.2.1.1	Flash Point	<u>Conforms</u>
3.2.1.2	Storage Stability	
3.2.1.2.1	Elevated Temperature	<u>Informational</u>
3.2.1.2.2	Cold Temperature	<u>Informational</u>
3.2.2.1	Corrosion of Metal Surfaces	
3.2.2.1.1	Total Immersion Corrosion	<u>Conforms</u>
3.2.2.1.2	Sandwich Corrosion	<u>Does not conform</u>
3.2.2.2.1	Effect on Transparent Plastic	<u>Conforms</u>
3.2.2.2.2	Effect on Painted Surfaces	<u>Conforms</u>
3.2.2.2.3	Effect on Rubber	<u>Conforms</u>
3.2.2.2.4	Effect on Vinyl Surfaces	<u>Conforms</u>
3.2.2.2.5	Effect on Tedlar Surfaces	<u>Conforms</u>

Respectfully submitted,



Patricia D. Viani, SMI Inc.

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Page 2 of 4

3.2.1 As received Disinfectant:

3.2.1.1 Flash Point: Shall be not lower than 100°C (210°F), determined in accordance with ASTM D56.

Product: No flash observed to 212°F

Result Conforms

3.2.1.2 Stability: Disinfectant shall meet the requirements of 3.2.1.2.1 and 3.2.1.2.2, determined in accordance with ASTM F 1104.

3.2.1.2.1 Elevated Temperature: Disinfectant shall evince no separation or stratification after exposure for 120 hr ± 1 at 50°C ± 3 (122°F ± 5).

Complete ASTM F 1104 requires 12 months storage of product, with subsequent retest. This test was performed on un-aged product.

Product: No separation or stratification after exposure.

Result Informational

3.2.1.2.2 Cold Temperature: Disinfectant shall evince no precipitation, stratification, layering, or separation after being exposed for 120 hrs ± 1 at -10°C ± 3 (14°F ± 5), warmed to room temperature, and the sample container inverted 3 times prior to evaluation.

Complete ASTM F 1104 requires 12 months storage of product, with subsequent retest. This test was performed on un-aged product.

Product:

No precipitation, stratification, layering or separation after exposure.

Result Informational

3.2.2 As received Disinfectant:

3.2.2.1 Corrosion of Metal Surfaces:

3.2.2.1.1 Total Immersion Corrosion: Disinfectant shall neither show evidence of staining, pitting, or corrosion nor cause an average weight change of AMS 4049 alclad aluminum alloy panels greater than 0.3 mg/cm² per 24 hours, determined in accordance with ASTM F 483.

Product: 0.08 mg/cm²/24hrs

Result Conforms

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3.2.2.1.2 Sandwich Corrosion: Specimens of AMS 4049 alclad aluminum alloy, after test, shall show a rating not worse than 1 or not worse than control panels using ASTM D 1193, Type VI water, determined in accordance with ASTM F 1110.

	RATING: AMS 4049 ALCLAD ALUMINUM
PRODUCT	*4
CONTROL	1

Result *Does not conform

3.2.2.2 Effect on Aircraft Materials:

3.2.2.2.1 Effect on Transparent Plastics: Disinfectant shall not craze, stain, or discolor Type C acrylic plastic, determined in accordance with ASTM F484. Disinfectant shall not craze, stain, or discolor MIL-P-83310 polycarbonate plastic or polysulfone plastic, determined in accordance with test procedures specified in ASTM F484 on specimens stressed for 10 min. \pm 1 to an outer fiber stress of 2000 psi (20MPa).

	As received
Type C Acrylic (MIL-P-25690) [4500 psi / 8 hours]	No craze, stain nor discoloration
Polycarbonate (AMS-P-83310) [2000 psi / 10 minutes]	No craze, stain nor discoloration
Polysulfone plastic [2000 psi / 10 minutes]	No craze, stain nor discoloration

Result Conforms

3.2.2.2.2 Effect on Painted Surfaces: Disinfectant shall neither decrease the hardness of the paint film by more than two pencil hardness levels nor shall it produce any streaking, discoloration, or blistering of the paint film, determined in accordance with ASTM F502.

**Product: No decrease in film hardness.
No evidence of streaking, discoloration or blistering.**

Result Conforms

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3.2.2.2.3 Effect on Rubber: Disinfectant shall neither cause more than 25% loss of tensile strength and 25% loss in elongation nor cause more than $\pm 15\%$ change of volume, when tested on material specified by the purchaser, in accordance with ASTM D 471. The test conditioning shall be performed at room temperature and the immersion period shall be 24 hours.

Rubber: *AMS 3209 Chloroprene Rubber, 65-75*
Product: *< 10% change in tensile strength*
< 10% change in elongation
< 10% change in volume

Result Conforms

3.2.2.2.4 Effect on Vinyl Surfaces: Disinfectant shall neither cause scratching nor more than a minimal color change or staining, when tested in accordance with ASTM F 2109.

Product: *No scratching nor discoloration*

Result Conforms

3.2.2.2.5 Effect on Tedlar Surfaces: Disinfectant shall neither cause scratching nor more than a minimal color change or staining, when tested in accordance with ASTM F 2109.

Product: *No scratching nor discoloration*

Result Conforms

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Page 1 of 5

Boeing D6-7127 Revision M (April 11, 2003)

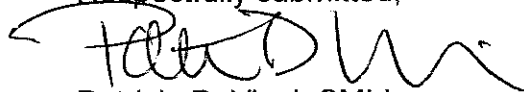
CLEANING INTERIORS OF COMMERCIAL

TRANSPORT AIRCRAFT

Category: Disinfectants

11.3.1	Sandwich Corrosion	<u>Does not conform</u>
11.3.2	Immersion Corrosion Test	<u>Conforms</u>
11.3.3	Rubber Test	<u>Conforms</u>
11.3.4	Sealant Test	<u>Does not conform</u>
11.3.5	Painted Surface Test	<u>Conforms</u>
11.3.6	Tedlar Surface Test	<u>Conforms</u>
11.3.7	Vinyl Surface Test	<u>Conforms</u>
11.3.8	Fabric and Carpet Test	<u>Conforms</u>
11.3.9	Leather and Naugahyde Test	<u>Conforms</u>
11.3.10	Flash Point Test	<u>Informational</u>
11.3.11	Polycarbonate Crazing Test	<u>Conforms</u>

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 Boeing D6-7127

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11.3.1 Sandwich Corrosion Test: Corrosion in excess of that on the control panel constitutes failure when tested in accordance with Section 12.1.

	Clad 7075-T6 Aluminum (AMS 4049)	Bare 7075-T6 Aluminum (AMS 4045) anodized per Mil-A-8625 Type I
PRODUCT	*4	1
Control	1	1

Result *Does not conform

11.3.2 Immersion Corrosion Test: The average weight change of each test specimen shall not exceed ± 10 mg in a 24 hour immersion period when tested in accordance with Section 12.2.

	PRODUCT (Loss per 1"x2" panel)	RESULT
Clad 2024-T3 Aluminum (QQ-A-250/5)	0.9 mg	PASS
Bare 2024-T3 Aluminum (QQ-A-250/4) alodined per MIL-C-5541	0.1 mg	PASS
Bare 2024-T3 Aluminum (QQ-A-250/4) anodized per MIL-A-8625 Ty I	1.2 mg	PASS
Bare 7178-T6 Aluminum (QQ-A-250/14) anodized per MIL-A-8625 Ty I	0.9 mg	PASS

Result Conforms

11.3.3 Rubber Test: Changes in properties shall not exceed the following, when tested in accordance with Section 12.3:

PROPERTY	MAX. CHANGE ALLOWED	PRODUCT
Tensile Strength	25 % loss	< 5%
Elongation	25 % loss	< 5%
Volume	$\pm 15\%$ change	< 5%

24 hour immersion at room temperature.

Result Conforms

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Boeing D6-7127

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SMI/REF: 0810-828

Page 3 of 5

11.3.4 Sealant Test: The sealant shall not lift at the edges or lose adhesion when tested in accordance with Section 12.4.

PRODUCT: Sealant lifted at the edges and lost adhesion.

Result Does not conform

11.3.5 Painted Surface Test: When tested in accordance with Section 12.5 and Section 7c., the following is required:

- a. Paint film hardness shall not decrease more than 2 pencil hardnesses.
- b. Greater than minimal color change or staining constitutes test failure.

**PRODUCT: Paint film hardness: 0 pencil hardness change
Color change: none**

Result Conforms

11.3.6 Tedlar Surface Test: When tested in accordance with Section 12.6 and Section 7c., the following is required:

- a. Scratching of exposed specimens constitutes test failure.
- b. Greater than minimal color change or staining constitutes test failure.

PRODUCT: No scratching, color change, or staining of specimens.

Result Conforms

11.3.7 Vinyl Surface Test: When tested in accordance with Section 12.7 and Section 7c., the following is required:

- a. Cracking, scratching or brittleness of exposed specimens constitutes test failure.
- b. Greater than minimal color change or staining constitutes test failure.

PRODUCT: No scratching, color change, or staining of specimens.

Result Conforms

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Page 4 of 5

11.3.8 Fabric and Carpet Test: When tested in accordance with Section 12.8 and Section 7c., the following is required:

Upholstery:

- a. Greater than minimal color change or staining constitutes test failure.

No color change or staining

Result Conforms

- b. Flammability: maximum values:

PROPERTY	MAXIMUM VALUE	PRODUCT
Extinguishing Time	15 seconds	Less than 5 seconds
Burn Length	8 inches	Less than 5 inches
Drip Extinguish Time	5 seconds	Less than 3 seconds

Result Conforms

Carpet:

- a. Greater than minimal color change or staining constitutes test failure.

No color change or staining

Result Conforms

- b. Flammability: maximum values:

PROPERTY	MAXIMUM VALUE	PRODUCT
Extinguishing Time	15 seconds	Less than 5 seconds
Burn Length	8 inches	Less than 5 inches
Drip Extinguish Time	5 seconds	Less than 3 seconds

Result Conforms

11.3.9 Leather and Naugahyde Test: When tested in accordance with Section 12.9 and Section 7c., the following is required:

Leather: a. *Scratching or brittleness of exposed specimen constitutes test failure.*

No scratching or brittleness of exposed specimen.

- b. *Greater than minimal color change or staining constitutes test failure.*

No color change or staining.

Result Conforms

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Page 5 of 5

11.3.9 Leather and Naugahyde Test (continued):

- Naugahyde: a. *Scratching or brittleness of exposed specimen constitutes test failure.*
No scratching or brittleness of exposed specimen.
b. *Greater than minimal color change or staining constitutes test failure.*
No color change or staining.

Result Conforms

- 11.3.10 Flash Point Test: All cleaning candidates having a flash point shall be approved by Fire Protection Engineering before they can be evaluated for use.

PRODUCT: No flash point observed to 212^oF.

Result Informational

- 11.3.11 Polycarbonate Crazing Test: Any cracking or crazing of the polycarbonate sheet constitutes failure, when tested in accordance with Section 12.11.
LEXAN 9600 (2000 psi/10 minutes)

PRODUCT: No cracking or crazing

Result Conforms