

**AeroCosmetics  
PlexWax  
Information Pack**

**Plex  
WAX**

**Available from Frasers Aerospace**

**1 St James Rd, Brentwood, Essex, CM14 4LH**

**[www.frasersaerospace.com](http://www.frasersaerospace.com)**





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**Product Name:** PlexWax (Aero Cosmetics)

**Part Number:**

- 16 oz RFU – ACRFU06

**Manufacturer:** Aero Cosmetics

**Approvals:**

- AIMS 09-00-002
- Boeing D6-17487
- Boeing 7127

**HS Commodity Code:** 34022011

**Product Description.**

PlexWAX is an extremely effective cleaner for all types of aircraft windows and is also safe for cockpit instruments and displays. As well as its superior cleaning capabilities, PlexWAX also leaves a glossy, protective antistatic coating on both plastic and heated glass.

**Core Benefits.**

- Cleans and polishes in a single pass.
- Extremely economical.
- Suitable for exterior and interior use.
- Suitable for use on all aircraft windows.
- Water-based - free from alcohol and ammonia.

- Biodegradable - safe for users and the environment.
- Non-flammable and non-corrosive.
- Hard water stable, cold water efficient.

## **Directions for use.**

Take two new clean towels and fold them in half twice to make a square. Wet one with fresh water and wring it out until it is only damp. Pre-spray the window with Plex WAX. Let it soak for 5-10 minutes. Re-spray a section of the window you would like to clean with Plex WAX. Only spray an area you can clean before the Plex WAX dries on its own. Wipe the area with the damp towel. Using the dry towel, thoroughly dry the area before it dries on its own. Continue using steps 3 through 5 for the rest of the pre-soaked windows, unfolding and re-folding the towels to expose new clean sides as you clean each area.

## **Safety & storage.**

Full guidance on the handling and disposal of this product is provided in a separate Safety Data Sheet (SDS). Only for professional users/specialists. Store in original closed containers away from extremes of temperature.



# SAFETY DATA SHEET

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH) & 1272/2008 (CLP)

## 1. SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

<b>1.1 Product identifier</b>	
Product Name	PlexALL (Aero Cosmetics Inc.- Mnf)
Product Code(s)	Not available
<b>1.2 Relevant identified uses of the substance or mixture and uses advised against</b>	Aircraft multi-surface cleaner/protector.
Identified use(s)	For specific instruction see the appropriate Instruction Sheet. Product is for professional use only Must not be used by persons under the age of 18, except when adult supervision is available.
Uses advised against	None
<b>1.3 Details of the supplier of the Safety Data Sheet</b>	
Company Identification	Alexander Fraser and Son Trading Ltd, t/as Frasers Aerospace 185-187 High Road Chadwell Heath Romford Essex RM6 6NR United Kingdom
Telephone	+44 (0)20 8597 8781
E-Mail (competent person)	jason.england@alex-fraser.co.uk
<b>1.4 Emergency telephone number</b>	
Emergency Phone No.	+44 (0)20 8597 8781 (08.00 – 17.00 GMT Monday - Friday)

## 2. SECTION 2: HAZARDS IDENTIFICATION

<b>2.1 Classification of the substance or mixture</b>	
<b>2.1.1 Regulation (EC) No. 1272/2008 (CLP)</b>	Acute Toxicity (Category 4). Harmful if swallowed. Skin Irritation (Category 2). Causes skin irritation. Eye Damage (Category 1). Causes serious eye damage. STOT RE (Category 2). May cause damage to organs.



**2.2 Label elements**

**2.2.1 Label elements**

GHS Product Identifier  
Hazard Pictogram

According to Regulation (EC) No. 1272/2008 (CLP)  
Not available



Signal word(s)

Hazard statement(s)

Precautionary statement(s)

Danger

H302: Harmful if swallowed.

H315: Causes skin irritation.

H318: Causes serious eye damage.

H373: May cause damage to organs.

P102: Keep out of reach of children.

P262: Do not get in eyes, on skin, or on clothing.

P271: Use only in a well-ventilated area.

P281: Use personal protective equipment as required.

P301: IF SWALLOWED: seek medical advice immediately and show the container or label.

P302 + P352: IF ON SKIN: Wash with plenty of soap and water.

P305+P351+P338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.

P501: Dispose of contents/container to: hazardous waste site

**2.3 Other hazards**

**2.4 Additional Information**

None

None

### 3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.2 Mixtures

EC Classification No. 1272/2008

Hazardous ingredient(s)	%W/W	Cas No.	EC No.	REACH Registration No.	Hazard pictogram(s) and Hazard statement(s)
2-methylpentane-2,4-diol	<10	107-41-5	203-489-0	01-2119539582-35	Skin Irrit. 2, H315 Eye Irrit. 2, H319
Diethanolamine	1 - 5	111-42-2	203-868-0	01-2119488930-28	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT RE 2, H373
Glycerol	1 - 2	56-81-5	200-289-5	Not available	Not classified as hazardous

#### 3.3 Additional Information

For full text of H/P phrases see section 16. For full text of R/S phrases see section 16.

### 4. SECTION 4: FIRST AID MEASURES



#### 4.1 Description of first aid measures

Inhalation

According to the manufacturer's data they list no risk through inhalation.

Skin Contact

Remove contaminated clothing and wash affected skin with water. Wash contaminated clothing before reuse.

Eye Contact

Eyes should be washed with plenty of water. Obtain immediate medical attention.

Ingestion

Wash out mouth with water. Do not induce vomiting. If symptoms persist, obtain medical attention.

#### 4.2 Most important symptoms and effects, both acute and delayed

None stated.

#### 4.3 Indication of immediate medical attention and special treatment needed

Treatment should in general be symptomatic and directed to relieving any effects.

## 5. SECTION 5: FIRE-FIGHTING MEASURES

<b>5.1 Extinguishing Media</b>	.
Suitable Extinguishing Media	Extinguish with dry chemical, foam, water spray, or carbon dioxide.
Unsuitable Extinguishing Media	None
<b>5.2 Special hazards arising from the mixture</b>	None
<b>5.3 Advice for fire-fighters</b>	Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

## 6. SECTION 6: ACCIDENTAL RELEASE MEASURES

<b>6.1 Personal precautions, protective equipment and emergency procedures</b>	Avoid contact with spilled material. Wear suitable protective equipment. Refer to section 5 for fire-fighting; section 4 for first-aid advice; and section 8 for minimum requirements for personal protective equipment.
<b>6.2 Environmental precautions</b>	Do not allow to enter drains, sewers or watercourses.
<b>6.3 Methods and material for containment and cleaning up</b>	Adsorb spillages onto sand, earth or any suitable adsorbent material.
<b>6.4 Reference to other sections</b>	Section 1 for emergency contact. Section 8 for information on appropriate personal protective equipment.
<b>6.5 Additional Information</b>	None

## 7. SECTION 7: HANDLING AND STORAGE

<b>7.1 Precautions for safe handling</b>	Avoid contact with skin and eyes. Avoid ingestion. Keep away from heat and sources of ignition. Keep container tightly closed. Wear protective gloves/clothing and eye/face protection. Prevent small spills and leakages to avoid slip hazard.
<b>7.2 Conditions for safe storage, including any incompatibilities</b>	
Storage Temperature	Store in a cool area. Keep from freezing and extreme heat.
Storage Life	No data available
Incompatible materials	No data available
<b>7.3 Specific end use(s)</b>	For specific instruction see the appropriate Instruction Sheet.

## 8. SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### 8.1.1 Occupational Exposure Limits

SUBSTANCE.	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m <sup>3</sup> )	STEL (ppm)	STEL (mg/m <sup>3</sup> )	Note:
2-methylpentane-2,4-diol	107-41-5	25	123	25	123	EH40
Glycerol	56-81-5	-	10	-	-	EH40

#### 8.1.2 Biological limit value

Not established

#### 8.1.3 PNECs and DNELs

Not established

#### 8.2.1 Appropriate engineering controls

Not established

#### 8.2.2 Personal protection equipment

Eye/face protection

Wear chemical safety glasses with side shields, or splash-proof goggles



Skin protection (Hand protection/ Other)

Any specific glove information provided is based on published literature and glove-manufacturer data. Contact the glove manufacturer for glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. Chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet –style gloves. CEN standards EN 420 and EN 374 provide general requirements and list of glove types.



Respiratory protection

Respiratory protection is unnecessary, provided the concentration of vapour, mist or fumes is properly controlled.

If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements. Types of respirator to be considered for this mixture include: Half-face filter respirator; Type A filter material CEN standards EN136, EN140 and EN 405 provide respirator masks and EN 149 and EN 143 provide filter recommendations.



Thermal hazards

None Known

#### 8.2.3 Environmental Exposure Controls

See sections 6,7,12,13



## 9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	Liquid
Colour	Opaque Pink
Odour	None
Odour Threshold (ppm)	No data available
pH (Value)	7.5 – 7.8
Melting Point (°C) / Freezing Point (°C)	Freezing point = 0
Boiling point/boiling range (°C):	100
Flash Point (°C)	No data available
Evaporation rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	No data available
Explosive limit ranges.	No data available
Vapour Pressure (psia)	14.7 at 100°C
Vapour Density (Air=1)	No data available
Density (g/ml)	1.05
Solubility (Water)	Completely soluble
Solubility (Other)	No data available
Partition Coefficient (n-Octanol/water)	No data available
Auto Ignition Temperature (°C)	No data available
Decomposition Temperature (°C)	No data available
Viscosity (mPa.s)	No data available
Explosive properties	No data available
Oxidising properties	No data available

### 9.2 Other information

None

## 10. SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Non-reactive under normal conditions of use
10.2 Chemical stability	Stable under normal conditions.
10.3 Possibility of hazardous reactions	See 10.5
10.4 Conditions to avoid	None established.
10.5 Incompatible materials	None established.
10.6 Hazardous Decomposition Product(s)	Hazardous decomposition products are not expected to form during normal storage.

## 11. SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### 11.1.2 Mixtures

Acute toxicity	No data available
Irritation	No data available
Corrosivity	No data available
Sensitisation	No data available
Repeated dose toxicity	No data available
Carcinogenicity	No data available
Mutagenicity	No data available
Toxicity for reproduction	No data available

#### 11.2 Other information

None

## 12. SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	No data available.
12.2 Persistence and degradability	The product is inherently biodegradable.
12.3 Bioaccumulative potential	There is no evidence to suggest that bio-accumulation will occur.
12.4 Mobility in soil	Product is degraded in soil.
12.5 Results of PBT and VPVB assessment	No PBT or VPVB Components
12.6 Other adverse effects	None

## 13. SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods	<p>Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8. Empty containers retain residue (liquid and/or vapour) and can be dangerous. Do not burn, or use a cutting torch on, the empty drum.</p> <p>Dispose of in accordance with the European Directives on waste and hazardous waste. Waste must be classified and labelled prior to recycling or disposal. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.</p>
13.2 Additional Information	None

## 14. SECTION 14: TRANSPORT INFORMATION

### 14.1 Land transport (ADR/RID)

UN number	1760
Proper Shipping Name	CORROSIVE LIQUID (Diethanolamine)
Transport hazard class(es)	8
Packing Group	II
Hazard label(s)	No
Environmental hazards	No
Special precautions for user	None

### 14.2 Sea transport (IMDG)

UN number	1760
Proper Shipping Name	CORROSIVE LIQUID (Diethanolamine)
Transport hazard class(es)	8
Packing Group	II
Marine Pollutant	No
Special precautions for user	None

### 14.3 Air transport (ICAO/IATA)

UN number	1760
Proper Shipping Name	CORROSIVE LIQUID (Diethanolamine)
Transport hazard class(es)	8
Packing Group	II
Environmental hazards	No
Special precautions for user	None

### 14.4 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable

## 15. SECTION 15: REGULATORY INFORMATION

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture substance or mixture

1907/2006 – REACH  
1272/2008 – CLP  
648/2004/EC - Detergents Directive  
98/8/EC - BPD

#### 15.1.1 EU regulations

Authorisations and/or restrictions on use

Refer to EU regulation for details of any actions or restrictions by the above regulations or directives

#### 15.1.2 National regulations

Refer to national regulation for details of any actions or restrictions by the above regulations or directives

### 15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out for this mixture

## 16. SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16.

### LEGEND

LTEL	Long Term Exposure Limit
STEL	Short Term Exposure Limit
STOT	Specific Target Organ Toxicity
DNEL	Derived No Effect Level
PNEL	Predicted No Effect Concentration
RCP	Reciprocal Calculation Procedure

**References:** Sources of information used in preparing this SDS included one or more of the following: results from in-house or supplier toxicology studies; publications from trade associations; ECHA publications; EU guidelines and other sources as appropriate

### Hazard statement(s) and Precautionary statement(s)

H302: Harmful if swallowed.  
H315: Causes skin irritation.  
H318: Causes serious eye damage.  
H373: May cause damage to organs.

P102: Keep out of reach of children.  
P262: Do not get in eyes, on skin, or on clothing.  
P271: Use only in a well-ventilated area.  
P281: Use personal protective equipment as required.  
P301: IF SWALLOWED: seek medical advice immediately and show the container or label.  
P302 + P352: IF ON SKIN: Wash with plenty of soap and water.  
P305+P351+P338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.  
P501: Dispose of contents/container to: hazardous waste site.

### Additional Information

This Safety Data Sheet has been produced from information supplied by the formulators of the product, and Information contained in this publication or as otherwise supplied to users is believed to be accurate and is given in good faith, but it is for the users to satisfy themselves of the suitability of the product for their own particular purpose. Frasers Aerospace gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law. Frasers Aerospace accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.



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Aero Cosmetics  
P.O. Box 460025  
San Antonio, TX 78246

Date: 06-Mar-2007

SMI/REF: 0702-306

Product: **Plex ALL / Plex WAX** (received 15-Feb-2007)

Dilution: Ready to Use

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**Boeing D6-7127 Revision M (April 11, 2003)**  
CLEANING INTERIORS OF COMMERCIAL  
TRANSPORT AIRCRAFT  
Category: Disinfectants

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11.3.1	Sandwich Corrosion	Conforms
11.3.2	Immersion Corrosion Test	Conforms
11.3.3	Rubber Test	Conforms
11.3.4	Sealant Test	Conforms
11.3.5	Painted Surface Test	Conforms
11.3.6	Tedlar Surface Test	Conforms
11.3.7	Vinyl Surface Test	Conforms
11.3.8	Fabric and Carpet Test	Conforms
11.3.9	Leather and Naugahyde Test	Conforms
11.3.10	Flash Point Test	Conforms
11.3.11	Polycarbonate Crazing Test	Conforms

Respectfully submitted,



Patricia D. Viani, SMI Inc.

Client: Aero Cosmetics  
Product: **Plex ALL / Plex WAX**  
Dilution: Ready to use  
Boeing D6-7127

Date: 06-Mar-2007  
SMI/REF: 0702-306

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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
<b>PRODUCT</b>	<b>1</b>	<b>1</b>
Control	1	1

Result            Conforms           

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

	<b>PRODUCT</b> (Loss per 1"x2" panel)	<b>RESULT</b>
Clad 2024-T3 Aluminum (QQ-A-250/5)	<b>0.9 mg</b>	<b>PASS</b>
Bare 2024-T3 Aluminum (QQ-A-250/4) alodined per MIL-C-5541	<b>0.2 mg</b>	<b>PASS</b>
Bare 2024-T3 Aluminum (QQ-A-250/4) anodized per MIL-A-8625 Ty I	<b>0.2 mg</b>	<b>PASS</b>
Bare 7178-T6 Aluminum (QQ-A-250/14) anodized per MIL-A-8625 Ty I	<b>0.1 mg</b>	<b>PASS</b>

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	<b>&lt; 5%</b>
Elongation	25 % loss	<b>&lt; 5%</b>
Volume	$\pm 15\%$ change	<b>&lt; 5%</b>

24 hour immersion at room temperature.

Result            Conforms



Client: Aero Cosmetics  
Product: **Plex ALL / Plex WAX**  
Dilution: Ready to use  
Boeing D6-7127

Date: 06-Mar-2007  
SMI/REF: 0702-306

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- 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 did not lift at the edges or lose adhesion.**

Result Conforms

- 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. 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

Client: Aero Cosmetics  
Product: **Plex ALL / Plex WAX**  
Dilution: Ready to use  
Boeing D6-7127

Date: 06-Mar-2007  
SMI/REF: 0702-306

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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	<b>Less than 5 seconds</b>
Burn Length	8 inches	<b>Less than 5 inches</b>
Drip Extinguish Time	5 seconds	<b>Less than 3 seconds</b>

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	<b>Less than 5 seconds</b>
Burn Length	8 inches	<b>Less than 5 inches</b>
Drip Extinguish Time	5 seconds	<b>Less than 3 seconds</b>

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



Client: Aero Cosmetics  
Product: **Plex ALL / Plex WAX**  
Dilution: Ready to use  
Boeing D6-7127

Date: 06-Mar-2007  
SMI/REF: 0702-306

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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: Materials exhibiting any flash point shall not be approved for use in the airplane when tested in accordance with Section 12.10.

***PRODUCT: No flash point observed to 212<sup>0</sup>F.***

Result \_\_\_\_\_ Conforms \_\_\_\_\_

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 \_\_\_\_\_

# SMI, Inc.

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Attn: Brian Phillips  
Aero-Cosmetics  
P.O. Box 460025  
San Antonio, TX 78246

Date: 17-Mar-2014

SMI/REF: 1402-439<sub>R2</sub>

Product: **Plex ALL** (received 10-Feb-2014)

Dilution: As received

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**British Aerospace**  
**AIRBUS AIMS09-00-002** (Issue 3, July 2011)  
**EVALUATION OF MAINTENANCE MATERIALS**  
**Exterior and General Cleaners**

5.3.1	Sandwich Corrosion Test	Conforms
5.3.2	Total Immersion Test	Conforms
5.3.3	Hydrogen Embrittlement Test	Conforms
5.3.4	Paint Softening Test	Conforms
5.3.5	Acrylic Crazeing Test	Conforms
5.3.6	Polycarbonate Crazeing Test	Conforms



Respectfully submitted,

Patricia D. Viani, SMI Inc.



Client: Aero Cosmetics  
 Product: **Plex ALL**  
 Dilution: As received  
 AIMS 09-00-002 (Issue 3)

Date: 14-Mar-2014  
 SMI/REF: 1402-439<sub>R2</sub>

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5.3.1 **Sandwich Corrosion Test:** Testing shall be in accordance with ASTM-F-1110 using:

- aluminium alloy 2024 T3 clad against
- anodised aluminium alloy 2024 T3 unclad and
- anodised aluminium alloy 7075 T6 unclad.

After the test the aluminium alloy specimens shall show a rating less than or equal to 1 or no worse than a control sample prepared with distilled water.

	Aluminium alloy 2024 T3 clad against Anodised alum. 2024 T3 unclad	Aluminium alloy 2024 T3 clad against Anodised alum. 7075 T6 unclad
<b>AS RECEIVED</b>	<b>2024 T3 clad: 1</b> <b>2024 T3 unclad anodised: 1</b>	<b>2024 T3 clad: 1</b> <b>7075 T6 unclad anodised: 1</b>
<b>CONTROL</b>	2024 T3 clad: 1 2024 T3 unclad anodised: 1	2024 T3 clad: 1 7075 T6 unclad anodised: 1

Result Conforms

5.3.2 **Total Immersion Test:** Testing shall be in accordance with ASTM-F-483 using:

- aluminium alloys as per 5.3.1. above
- low carbon steel, e.g. AMS 5045, XC18 or equivalent
- cadmium plated steel, e.g. AMS 5045, XC18 (or equivalent), plated in accordance with AMS QQ-P-416 Type I Class 1 (or equivalent)

The immersion time shall be  $(24 \pm 0.5)$  h. The immersion temperature shall be  $(23 \pm 2)^{\circ}\text{C}$ .

No significant visual change shall be evident. The max. permitted weight changes are as follows:

Aluminum alloy = **0.02 mg/cm<sup>2</sup>** maximum.  
 Low carbon steel = **0.8 mg/cm<sup>2</sup>** maximum  
 Cadmium plated steel = **0.3 mg/cm<sup>2</sup>** maximum

ALLOY	WEIGHT CHANGE
	AS RECEIVED
Aluminum alloy 2024-T3 clad	< 0.01 mg/cm <sup>2</sup> /24 hrs
Anodized aluminum alloy 2024-T3 unclad	0.01 mg/cm <sup>2</sup> /24 hrs
Anodized aluminum alloy 7075-T6 unclad	+ 0.02 mg/cm <sup>2</sup> /24 hrs
Low carbon steel AMS 5045	< 0.01 mg/cm <sup>2</sup> /24 hrs
Cadmium plated steel AMS 5045 plated i.a.w. AMS-QQ-P-416 Type I Class 1	0.02 mg/cm <sup>2</sup> /24 hrs

Result Conforms

Client: Aero Cosmetics  
Product: **Plex ALL**  
Dilution: As received  
AIMS 09-00-002 (Issue 3)

Date: 14-Mar-2014  
SMI/REF: 1402-439<sub>R2</sub>

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5.3.4 Paint Softening Test:continued

Paint System		Weight required to produce scratch	
		Before exposure	After exposure
<b>AS RECEIVED</b>	Epoxy Primer without topcoat: Primer: MIL-PRF-23377 Type I, Epoxy, High Solids	Pass*	Pass*
	Epoxy primer with polyurethane topcoat: Primer : MIL-PRF-23377 Type I, Epoxy, High Solids Topcoat: MIL-PRF-85285 Type I, Polyurethane, High solids	Pass*	Pass*

**\* Using a 2,000 gram load (maximum load of the scratch apparatus)**

*\*Conformance ("Pass") if no scratch occurs using a load equal to or greater than 1,800 grams (90% of 2,000 = 1,800), and there is no evidence of blistering, discoloration or staining.*

Result Conforms

55.3.5 Acrylic Crazing Test: Material conforming to MIL-P-25690 Type C shall be tested in accordance with ASTM-F-484. The maintenance materials shall not craze, crack, stain or discolor the test specimens.

**As received: No evidence of craze, crack, stain or discolor.**

Result Conforms

5.3.6 Polycarbonate Crazing Test: Material conforming to ASTM-D-3935 or AMS-P-83310 shall be tested in accordance with the method for the determination of stress crazing detailed in ASTM F 484.

Specimens shall be stressed for  $(30 \pm 2)$  minutes to an outer stress of 21MPa (3000 psi) at a temperature of  $(23 \pm 2)^{\circ}\text{C}$ .

**As received: No evidence of craze, crack, stain or discolor.**

Result Conforms



Client: Aero Cosmetics  
Product: **Plex ALL**  
Dilution: As received  
AIMS 09-00-002 (Issue 3)

Date: 14-Mar-2014  
SMI/REF: 1402-439<sub>R2</sub>

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- 5.3.3 Hydrogen Embrittlement Test: The product shall be non-embrittling as determined in accordance with ASTM F 519, using type 1a, 1c, or 2a specimens, cadmium plated in accordance with MIL-STD-870, Class 1, Type I. Type 1a and Type 1c specimens shall be loaded to 45% of the predetermined notch fracture strength and Type 2a specimens loaded to 80% of the yield strength. The entire 2a stressed specimen, or just the notched area of the 1a and 1c stressed specimen, shall be immersed continuously in the solution under test for 150 hours at a temperature between 20-30°C (68-86°F).  
The maintenance material being tested shall not cause embrittlement of the test specimens.

Specimens: Type 1c, cadmium plated

**As received:**  
**Specimen #1: No failures occurred within 150 hours.**  
**Specimen #2: No failures occurred within 150 hours.**  
**Specimen #3: No failures occurred within 150 hours.**  
**Specimen #4: No failures occurred within 150 hours.**

Result Conforms

- 5.3.4 Paint Softening Test: Maintenance material compatibility shall be tested with Airbus approved paints and/or customer specific systems. Testing shall consist of three specimens for each of the following combinations. The substrate shall be clad aluminium alloy 2024 suitably pre-treated:

- Epoxy primer of polyurethane primer with or without polyurethane topcoat (interior paint scheme according to TN A.007.10050 OR epoxy primer to MIL-PRF-23377 Type I with or without polyurethane topcoat to MIL-PRF-85285 Type I or customer specific system).
- Basic primer plus relevant exterior paint scheme according to TN A.007.10050 OR epoxy primer to MIL-PRF-23377 Type I with polyurethane topcoat to MIL-PRF-85285 Type I OR external paint scheme conforming to AMS 3095 OR customer specific system.

The thickness and drying times of individual coats shall be in accordance with the manufacturer's instruction sheets. Testing shall be in accordance with ISO 1518 "Scratch Test" using the following test sequence: one hour immersion in the maintenance material at an ambient temperature  $(23 \pm 2)^{\circ}\text{C}$ , rinsing with water immediately after the immersion and drying for 1 hour at room temperature. The material shall not soften the paint coat and the Scratch Test shall have 90% of the original value after the immersion.

The agent being tested shall not produce any blistering, discoloration or staining.

Client: Aero Cosmetics  
 Product: **WASH WAX ALL (Ready to Use)**  
 Dilution: As received  
 AIMS 09-00-002 (Issue 3)

Date: 14-Mar-2014  
 SMI/REF: 1402-439

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5.3.1 Sandwich Corrosion Test: Testing shall be in accordance with ASTM-F-1110 using:

- aluminium alloy 2024 T3 clad against
- anodised aluminium alloy 2024 T3 unclad and
- anodised aluminium alloy 7075 T6 unclad.

After the test the aluminium alloy specimens shall show a rating less than or equal to 1 or no worse than a control sample prepared with distilled water.

	Aluminium alloy 2024 T3 clad against Anodised alum. 2024 T3 unclad	Aluminium alloy 2024 T3 clad against Anodised alum. 7075 T6 unclad
<b>AS RECEIVED</b>	<b>2024 T3 clad: 1</b> <b>2024 T3 unclad anodised: 1</b>	<b>2024 T3 clad: 1</b> <b>7075 T6 unclad anodised: 1</b>
<b>CONTROL</b>	2024 T3 clad: 1 2024 T3 unclad anodised: 1	2024 T3 clad: 1 7075 T6 unclad anodised: 1

Result Conforms

5.3.2 Total Immersion Test: Testing shall be in accordance with ASTM-F-483 using:

- aluminium alloys as per 5.3.1. above
- low carbon steel, e.g. AMS 5045, XC18 or equivalent
- cadmium plated steel, e.g. AMS 5045, XC18 (or equivalent), plated in accordance with AMS QQ-P-416 Type I Class 1 (or equivalent)

The immersion time shall be  $(24 \pm 0.5)$  h. The immersion temperature shall be  $(23 \pm 2)^{\circ}\text{C}$ .

No significant visual change shall be evident. The max. permitted weight changes are as follows:

Aluminum alloy = **0.02 mg/cm<sup>2</sup>** maximum.  
 Low carbon steel = **0.8 mg/cm<sup>2</sup>** maximum  
 Cadmium plated steel = **0.3 mg/cm<sup>2</sup>** maximum

ALLOY	WEIGHT CHANGE
	AS RECEIVED
Aluminum alloy 2024-T3 clad	< 0.01 mg/cm <sup>2</sup> /24 hrs
Anodized aluminum alloy 2024-T3 unclad	0.01 mg/cm <sup>2</sup> /24 hrs
Anodized aluminum alloy 7075-T6 unclad	+ 0.02 mg/cm <sup>2</sup> /24 hrs
Low carbon steel AMS 5045	< 0.01 mg/cm <sup>2</sup> /24 hrs
Cadmium plated steel AMS 5045 plated i.a.w. AMS-QQ-P-416 Type I Class 1	0.02 mg/cm <sup>2</sup> /24 hrs

Result Conforms



# SMI, Inc.

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Phone: (305) 971-7047  
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Attn: Brian Phillips  
Aero-Cosmetics LLC  
P.O. Box 460025  
San Antonio, TX 78246

Date: 25-Jan-2012

SMI/REF: 1201-189

Product: **Plex ALL / Plex WAX** (received 12-Jan-2012)

Dilution: As received

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## BOEING D6-17487 REVISION R

*Exterior and General Cleaners and Liquid Waxes,  
Polishes and Polishing Compounds*

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Sandwich Corrosion Test

Conforms

Acrylic Crazeing Test

Conforms

Paint Softening Test

Conforms

Hydrogen Embrittlement Test

Conforms

Respectfully submitted,



Patricia D. Viani, SMI, Inc.

Client: Aero-Cosmetics LLC

Date: 25-Jan-2012

Product: **Plex ALL / Plex WAX**

SMI/REF: 1201-189

Dilution: As received

BOEING D6-17487 REVISION R (*Exterior & General*)

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Sandwich Corrosion Test : Specimen preparation, testing, and interpretation shall be in accordance with ASTM F1110 using the following materials and with the following exceptions:

1. Reagents and materials exception:

- (1). Clad 7075-T6 aluminum alloy in accordance with QQ-A-250/13 (AMS 4049 or AMS-QQ-A-250/13 optional) (2024-T3 Alclad specimens are neither required nor optional.)
- (2) Bare 7075-T6 aluminum alloy in accordance with QQ-A-250/12 (AMS 4045 or AMS-Q-A-250/12 optional) anodized in accordance with BAC 5019 or MIL-A-8625, Type I. Anodize shall be sealed. (2024-T3 nonclad specimens are neither required nor optional).
- (3) Distilled or deionized water may be used in place of ASTM F1193, Type IV reagent grade water for control specimens.
- (4) The filter paper may be Whatman No. 5 or equivalent in place of Whatman GFA glass fiber paper.

2. Procedure exceptions:

- (1) The filter paper strips shall be 1 by 3 inches and shall be placed in the center of the sandwiched specimens.
- (2) Each sandwich specimen shall be held together with waterproof tape, with no more than 1 piece of tape (maximum width 0.75 inch) on each of two opposite edges.

3. Interpretation of result exceptions:

- (1) Leaching or lightening of the chromate sealed anodize coating shall not be cause for rejection.
- (2) Deposits or residues from the material being tested that are not products of corrosion of the test panel surface shall not be cause for rejection.
- (3) Special procedure for evaluation of fire extinguishing foams and liquids.
- (4) Panels shall have a rating of 1 (no more than 5 percent of the surface area shall be corroded) or better in accordance with ASTM F 1110. The preferred method of determining the corroded area is by using image analysis. Other means approved by the purchaser may be substituted.
- (5) Any corrosion in excess of that shown by the control group shall be cause for rejection.

	Bare 7075-T6 (AMS 4045) Anodized per BAC 5019 (Type 3 chromate seal)	Clad 7075-T6 Aluminum (AMS 4049)
<b>PRODUCT</b>	<b>1</b>	<b>1</b>
Control	1	1

Result Conforms



Client: Aero-Cosmetics LLC  
Product: **Plex ALL / Plex WAX**  
Dilution: As received

Date: 25-Jan-2012  
SMI/REF: 1201-189

BOEING D6-17487 REVISION R (Exterior & General)

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Acrylic Crazing Test:

The material being tested shall not craze, crack, or etch acrylic test specimens when tested in accordance with ASTM F 484 using Type C (stretched acrylic plastic in accordance with MIL-P-25690) stressed to an outer fiber stress of 4500 psi.

**Type C (MIL-P-25690): No crazing, cracking, or etching**

Result Conforms

Paint Softening Test Procedure:

- a. Testing shall be in accordance with ASTM F502 using the following coating systems.
- (1) BMS 10-79, Type II primer applied in accordance with BAC 5882 plus BMS 10-60, Type II enamel in accordance with BAC 5845.
  - (2) BMS 10-79, Type III primer applied in accordance with BAC 5882, plus BMS 10-100 coating in accordance with BAC 5795.
- b. Three specimens conforming to Section 13a.(1) and three specimens conforming to Section 13a(2) shall be used for each test condition.
- c. The material being tested shall not produce a decrease in film hardness greater than two pencils, or any discoloration or staining.

NOTE: Slight darkening of the BMS 10-100 surface is acceptable.

**As received:**

**Paint system 1: 0 pencil hardness change after 24 hour post-exposure dry time.  
No discoloration or staining.**

**Paint system 2: 0 pencil hardness change after 24 hour post-exposure dry time.  
No discoloration or staining.**

Result Conforms

Hydrogen Embrittlement Test:

Hydrogen Embrittlement testing shall be in accordance with ASTM F 519-93, using cadmium plated Type 1a, 1c, or 2a specimens. All requirements of ASTM F519-93 for specimens, preparation, testing, and reporting shall apply. Type 1a specimens shall meet the requirements of D6-4307.

**Specimens: Type 1c, cadmium plated per MIL-STD-870.**

**(45% load, 150 hours, notched immersed for the duration, room temp.)**

**As received:**

- #1: No failure occurred within 150 hours.**
- #2: No failure occurred within 150 hours.**
- #3: No failure occurred within 150 hours.**
- #4: No failure occurred within 150 hours.**

Result Conforms