



AEROSPACE APPROVAL LIST

Cage Code: OWUA8

Products	Test Method Conformance	Aerospace Approvals
<p>BIOACT® 105 NSN# 7930L4164902027</p>	<ul style="list-style-type: none"> • ASTM F-945 Stress-Corrosion of Titanium Alloys by Aircraft Engine Cleaning Materials, Method A (Titanium AMS 4911, 4916) • ASTM F-1110 Sandwich Corrosion Test (Bare and Clad 7075-T6) • ASTM F-502 Effects of Cleaning and Chemical Maintenance Materials on Painted Aircraft Surfaces (Paint Softening Test) • ASTM F-519-77, Section 7.2 Hydrogen Embrittlement, Cadmium Plated Specimen Type 1C • ASTM F-485 Effects of Cleaners on Unpainted Aircraft Surfaces (Residue Test) • ASTM F-483 Immersion Corrosion Test 	<ul style="list-style-type: none"> • Approved by Bell Helicopter Bulletin No.: 1915 Solvents, Blended Organic, Cold Degreasing (Liquid & Pre-saturated Wipes) • Conforms to Boeing D6-17487 Revision L Exterior & General Cleaners & Liquid Waxes (exceptions: ASTM F-484 Stress Cracking Tests on Acrylic Plastics, Type C) • Conforms to Douglas Aircraft Co CSD #1 General Purpose Cleaner (exceptions: <i>ASTM F-484 Stress Cracking Tests on Acrylic Plastics, Type C</i>) • Used by Dowty Propellers for Manual & Immersion Cleaning • Approved by GE for Cleaning Method No. 23 Hand-Wipe Degreasing, SPM Task 70-21-23-110-053 (CO4-251) • Approved by GE for as alternate to SPM TASK 70-21-01-110-001, Cleaning Method No.1 Solvent Degreasing, or SPM TASK 70-21-22-110-042 Cleaning Method No. 22 Light Duty Aqueous Cleaning for Localized Hand-Wipe Cleaning • Used by Goodrich Landing Gear for Degreasing • Approved by GulfStream Aerospace Standard GAS115H for Solvent Cleaner/Degreaser, Mixed Hydrocarbons, Part No. GAS115H1 • Used by Messier Services America Bulk & Pre-Saturated Wipes • Approved by Pratt & Whitney Commercial Standard Practices Manual SPOP 208, PMC 8929 Hand-Wiping Solvent • Approved by Rolls Royce CSS No. 255 Type A Non-Halogenated Organic Solvent Cleaner (reference specs CSS200, CSS253, RPS578) • Approved by United Airlines Engine Parts Cleaning, Part #: SOL3001-17 for BIOACT 105 Precision Cleaner, SOL3001-17TTL10X12 for the Saturated Wipes
<p>BIOACT® 121</p>	<ul style="list-style-type: none"> • ASTM F-1110 Sandwich Corrosion Test (Bare and Clad 7075-T6, 2024-T3) • ASTM F- 502 Effects of Cleaning and Chemical Maintenance Materials on Painted Aircraft Surfaces (Paint Softening Test) • ASTM F-519-93 Hydrogen Embrittlement Test, Cadmium Plated Specimen Type 1c • ASTM F-945 Stress Corrosion of Titanium Alloys by Aircraft Engine Cleaning Materials (Titanium AMS 4911, 4916) • ASTM F-485 Effects of Cleaners on Unpainted Aircraft Surfaces -Residue Test (AMS 4911, 4049) • ASTM F-484 Stress Cracking Test on Acrylic Plastics, Type C • ASTM F-483 Immersion Corrosion Test 	<ul style="list-style-type: none"> • Conforms to Boeing D6-17487 Revision N Solvent Cleaners, General Cleaning • Conforms to Boeing BAC 5750 Section 5.11:d-Limonene, 95% minimum, Solvent Cleaning • Conforms to Boeing D6-17487 Revision L Exterior and General Cleaners and Liquid Waxes • Conforms to Douglas Aircraft Company CSD#1 Type 1: Materials & Procedures for General Exterior Cleaning of Painted & Unpainted Surfaces

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BIOACT[®] 145	<ul style="list-style-type: none"> • ASTM F-945 Stress-Corrosion of Titanium Alloys by Aircraft Engine Cleaning Materials • ASTM F-1110 Sandwich Corrosion Test • ASTM F-502 Effects of Cleaning and Chemical Maintenance Materials on Painted Aircraft Surfaces (Paint Softening Test) • ASTM F-519 Hydrogen Embrittlement • ASTM F-485 Effects of Cleaners on Unpainted Aircraft Surfaces (Residue Test) • ASTM F-483 Immersion Corrosion Test 	<ul style="list-style-type: none"> • Conforms to Boeing D6-17487 Revision L Exterior & General Cleaners & Liquid Waxes • Conforms to Douglas Aircraft Company CSD#1 General Purpose Cleaner • Approved by GulfStream Aerospace Standard GAS115H for Solvent Cleaner/Degreaser, Mixed Hydrocarbons, Part No. GAS115H1
BIOACT[®] PCG		<ul style="list-style-type: none"> • Conforms to Boeing BAC 5750 Section 5.11:d-Limonone, 95% minimum, Solvent Cleaning
BIOACT[®] 280	<ul style="list-style-type: none"> • ASTM F-1110 Sandwich Corrosion Test (Bare and Anodized 7075-T6 and 2024-T3) • ASTM F-945 Stress Corrosion of Titanium Alloys by Aircraft Engine Cleaning Materials (Method A); Titanium AMS 4911, 4916 • ASTM F-519 Hydrogen Embrittlement Test, Type 1A 	<ul style="list-style-type: none"> • Conforms to Allied Signal Engines (Honeywell) EMS 53170 Revision C 10-21-97 Type 1 Material Requirements for Aqueous Cleaning and Semi-Aqueous Degreasing, Tests A,B,C,F,G • Approved by GE Aircraft Engines (Dallas, TX) as a General Parts Cleaner & Plating Wax Remover on GEAE & CFMI Engine Hardware • Used by Goodrich Turbomachinery for Dewaxing • Supported by Hawker Pacific Aerospace, UK, Ltd. as a General Purpose High Temperature Degreasing Agent • Approved by Pratt & Whitney MCL E-205 Titanium Stress Corrosion Test • Approved by Pratt & Whitney Commercial Standard Practices Manual SPOP 37 Method 2; PMC 8913-1,-2 Revision C • Approved by Rolls Royce CSS No. 254 Class A Semi-Aqueous Cleaning Fluids Suitable or Use on Metallic Materials (reference specs MLC104, CSS200, CSS253, RPS461, RPS498) • Approved by Rolls Royce CSS No. 255 Type A Non-Halogenated Organic Solvent Cleaner Suitable or Use on Metallic Materials (reference specs MLC104, CSS200, CSS253, RPS578) • Used by United Services (<i>Division of United Airlines</i>) for Dewaxing

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BIOACT[®] 280E	<ul style="list-style-type: none"> • ASTM F-945-98 Stress Corrosion of Titanium Alloys by Aircraft Engine Cleaning Materials (Method A); Titanium AMS 4911, 4916 • ASTM F-502 Effects of Cleaning and Chemical Maintenance Materials on Painted Aircraft Surfaces (Paint Softening Test) • ASTM F-519-93 Hydrogen Embrittlement Test, Cadmium Plated Specimen Type 1C • ASTM F-1110 Sandwich Corrosion Test (Bare and Clad 7075-T6) 	<ul style="list-style-type: none"> • Conforms to Boeing D6-17487 Revision N Exterior and General Cleaners and Liquid Waxes, Polishes and Polishing Compounds (exceptions: ASTM F-484 Stress Cracking Tests on Acrylic Plastics, Type C) • Used by Hawker Pacific Aerospace, UK, Ltd. as a General Purpose High Temperature Degreasing Agent • Conforms to Pratt & Whitney PWA 36604 Revision B Hot Corrosion Testing of Standard Gas Turbine Engine Alloys, Alloys AMS 5544, 5536, 5608, 5508, 6359, 4037, 4375 • Approved by Pratt & Whitney Commercial Standard Practices Manual SPOP 37 Method 2; PMC 8913-11,-12 Revision C
BIOACT[®] 288	<ul style="list-style-type: none"> • ASTM F-945 Stress Corrosion of Titanium Alloys by Aircraft Engine Cleaning Materials (Method A); Titanium AMS 4911, 4916 • ARP 1755B Revision D Stock Loss Test Method, Category 10: Aqueous Cleaner • ASTM D-816 Test Methods for Rubber Cement Method B, Type 1 (PWA 407) 	<ul style="list-style-type: none"> • Conforms to Rolls Royce CSS No. 253 Test No. 4, Low Temperature Corrosivity • Conforms to Pratt & Whitney PWA 36604 Revision (exceptions: AMS 7267 Compatibility with Non-Metallic Materials) • Approved by Pratt & Whitney Commercial Standard Practices Manual SPOP 37 Method 2; PMC 8913-21,-22 Revision C
RE-ENTRY[®] PREPSOLV	<ul style="list-style-type: none"> • ASTM D-1353 Non-volatile Residue Test 	<ul style="list-style-type: none"> • Approved by Boeing BAC 5750 Section 5.1s (as Glidsafe Prepsolv by Glidco: former manufacturer) • Approved by Boeing BAC 5000 General Sealing, Revision W, 17-JAN-2000 (as Glidsafe Prepsolv by Glidco: former manufacturer) • Approved by the Department of the Navy WS 26024d Terpene Solvent, Ultra Low Residue for Use in Cleaning & Degreasing the Trident II D/5 First & Second Stage Motors (OWUAS)

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RE-ENTRY® PLUS 4 NSN# 6810P1370 6810P1370-1 6850014356461	<ul style="list-style-type: none"> • ASTM D-1353 Non-volatile Residue Test 	<ul style="list-style-type: none"> • Approved by the Department of the Navy WS 26145c Terpene Blend Solvent, Ultra Low Residue for use in Cleaning & Degreasing Operations for Solid Rocked Motor Components
LENIUM® GS NSN# 6850L4165642027	<ul style="list-style-type: none"> • ASTM F-519-97 Mechanical Hydrogen Embrittlement Evaluation of Plating Process and Service Environments (Passive Chemicals) Type 1c • ASTM F-1110 Sandwich Corrosion Test (Anodized and Alclad 7075-T6 and 2024-T3) • ASTM F-945-98 Stress Corrosion of Titanium Alloys by Aircraft Engine Cleaning Materials (Method A); Titanium AMS 4911, 4916 	<ul style="list-style-type: none"> • Approved by Scott Aviation SMP No.: 7700009 Revision AP, Cleaning of Components & Assemblies For Sale Use in Breathing Equipment
LENIUM® ES NSN# 7930PLENIUMES		<ul style="list-style-type: none"> • Approved by Goodrich Landing LGPS 1400 Solvent Cleaning/Degreasing
LENIUM® XS	<ul style="list-style-type: none"> • ASTM F-519-93 Hydrogen Embrittlement Type 1c • ASTM F-1110 Sandwich Corrosion Test (Anodized and Alclad 7075-T6) • ASTM F-502 Effects of Cleaning and Chemical Maintenance Materials on Painted Aircraft Surfaces (Paint Softening Test) • ASTM F-945-98 Stress Corrosion of Titanium Alloys (AMS 4911, 4916) • ASTM F-485 Residue Test (AMS 4911, 4049) • ASTM F-483 Immersion Corrosion Test • ARP 1755B Stock Loss Test Method, Category 12: Organic Solvent Cleaner 	<ul style="list-style-type: none"> • Conforms to Boeing D6-17487 Revision P Solvent Cleaners/General Cleaning • Conforms to Douglas CSD #1 Type 1 General Purpose Cleaner (exceptions: Stress Crazeing Test on Acrylics Plastics)

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Solvating Agent 70		<ul style="list-style-type: none"> Used by GE Aircraft Engines
Solvating Agent 24		<ul style="list-style-type: none"> Used by Northrop Grumman
AXAREL® 4100 NSN# 8010015350740		<ul style="list-style-type: none"> Approved by Rolls Royce CSS No. 255 Non-Aqueous Cleaning Fluids for Cold Liquid Degreasing Applications (reference spec RPS576)
AXAREL® 6100		<ul style="list-style-type: none"> Approved by Bell Helicopter, Bulletin No. 1915, Solvents, Blended Organic, Cold Degreasing Approved by Goodrich Actuation Systems 981-100-020 Issue 4 Solvent Degreasing Approved by Rolls Royce CSS No. 255 Type A Non-Halogenated Organic Solvent Cleaner (reference specs CSS200, CSS253, RPS578)
AXAREL® 9100	<ul style="list-style-type: none"> ASTM D-1353 Non-volatile Residue Test ASTM D-1296 Odor Test, Low/Non-Residual ASTM D-130 Copper Corrosion Test ASTM F-1110 Sandwich Corrosion Test (AMS 4037 Anodized, 4041, 4045 Anodized, 4049) ASTM F-483 Total Immersion Corrosion Test (AMS 4377, 4911, 5046, 4037/2470 Anodized) ASTM F-945 Stress Corrosion of Titanium Alloys by Aircraft Engine Cleaning Materials (Method A); Titanium AMS 4911, 4916 	<ul style="list-style-type: none"> Used by Lockheed Martin, Mechanical Section Approved under MIL-PRF-680B Degreasing Solvent Type III Very High Flash Point (200°F) Military Symbol SD-3 Approved by Rolls Royce CSS No. 255 Type A Non-Halogenated Organic Solvent Cleaner (reference specs CSS200, CSS253, RPS578) Rolls Royce Plc. Assessment (1993/94) Conforms to Royal Air Force Harrogate Montreal Protocol Alternatives Programme Replacement for Ozone Depleting Substances (1995)

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AXAREL® 52	<ul style="list-style-type: none"> • ASTM F-945 Stress Corrosion of Titanium Alloys by Aircraft Engine Cleaning Materials (Method A); Titanium AMS 4911, 4916 	
AXAREL® 56	<ul style="list-style-type: none"> • ASTM F-519-93 Hydrogen Embrittlement Test, Cadmium Plated Specimen Type 1a 	<ul style="list-style-type: none"> • Approved by Boeing BAC 5200 Cleaning, Preserving & Re-lubricating Anti-friction Bearings, Method II A Pressure Spray Cleaning, PSD 6-3 • Approved by Boeing BAC 5763 Type II Aqueous Alkaline & Solvent/Emulsion Degreasers • Supported by Hawker Pacific Aerospace, UK, Ltd. as a Diphasic Cleaning/Degreasing Chemical
CleanSafe™ 787		<ul style="list-style-type: none"> • Approved by Boeing BAC 5763 Type II Grade A Emulsion Cleaning & Aqueous Degreasing, PSD 6-52
CleanSafe™ 787C	<ul style="list-style-type: none"> • ASTM F-519 Hydrogen Embrittlement Cadmium Plated Specimen Type 1C & Unplated 4340 Steel Type 1a • MIL-DTL-83488d IVD Aluminum Plated Specimen, CI 2, Type 1c • ASTM F-483 Total Immersion Corrosion Test (AMS 4377, QQ-A-250/4. QQ-A-250/12, 9046, 5046, 2410) • SAE ARP 1755B Stock Loss Test Method, Effect of Cleaning Agents of Aircraft Engine Materials, Category 10: Aqueous Cleaners • ASTM D-816 Test Methods for Rubber Cement Method B, Type 1 • ASTM F-945 Stress Corrosion of Titanium Alloys by Aircraft Engine Cleaning Materials (Method A); Titanium AMS 4911, 4916 • ASTM F-1111 Low Embrittlement Cadmium Plate Corrosion Test (Modified per MIL-PRF-87937D) • ASTM F-1110 Sandwich Corrosion Test (Modified per MIL-PRF-87937D) • ASTM F-502 Effect on Painted Surfaces Test (Modified per MIL-PRF-87937D) • ASTM F-483 Hot Dip Galvanized Corrosion Test (Modified per MIL-PRF-87937D) • Wet Adhesion Tape Test, Types II & IV (Per MIL-PRF-87937D) 	<ul style="list-style-type: none"> • Approved by Boeing BAC 5763 Type II Grade A Emulsion Cleaning & Aqueous Degreasing, PSD 6-57 • Conforms to GE Appendix F Recommended Practice for Certifying Agent Approval of Cleaning Products Used on Metallic Jet Engine Hardware (Sections 3.1.1, 3.1.4, 3.1.5, 3.1.6, 3.1.9, 3.1.10, 3.1.12) • Conforms to MIL-PRF-87937D Cleaning Compound, Aerospace Equipment Type IV – Heavy Duty, Water-Dilutable Cleaning Compound • Conforms to Pratt & Whitney PWA 36604 Revision D Hot Corrosion, Stock Loss, Stress Corrosion, Compatibility with Non-Metallic Materials, Compatibility with PWA 407 Rubber

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Products by Company

Company	Approved Products	Conforming Products
Allied Signal (Honeywell)	BIOACT 280	
Bell Helicopter	BIOACT 105, AXAREL 6100	
Boeing Company	RE-ENTRY PREPSOLV, AXAREL 56, CleanSafe 787, CleanSafe 787C	BIOACT 105, BIOACT 121, BIOACT 145, BIOACT PCG, BIOACT 280E, LENIUM XS
Douglas Aircraft Co.	BIOACT 105	BIOACT 121, BIOACT 145, LENIUM XS
General Electric	BIOACT 105, BIOACT 280	CleanSafe 787C
Goodrich Actuation Systems	AXAREL 6100	
Goodrich Landing Gear	LENIUM ES	
GulfStream Aerospace	BIOACT 105, BIOACT 145	
Lockheed Martin	AXAREL 9100	
Military	RE-ENTRY PREPSOLV, RE-ENTRY PLUS 4, AXAREL 9100	AXAREL 9100, CleanSafe 787C
Pratt & Whitney	BIOACT 105, BIOACT 280, BIOACT 280E, BIOACT 288	BIOACT 280E, BIOACT 288, CleanSafe 787C
Rolls Royce	BIOACT 105, BIOACT 280, AXAREL 4100, AXAREL 6100, AXAREL 9100	BIOACT 288
Scott Aviation	LENIUM GS	
United Airlines	BIOACT 105	

Petroferm Inc. has satisfied customers in the aerospace industry in over 18 countries around the world. Below are the names of some of these customers.

Air Andaman, AMECO, ATK Thiokol, AVOX, BAE Systems, Boeing, Bell Helicopter, CAE Electronics, China Air, Chromalloy, Dowty Propellers, GE Aircraft Engines, Goodrich, Hawker Pacific, Honeywell, IHI Aerospace, Intersil/Harris, Israeli Aircraft Industries, Israeli Air Force, JAMCO, Kawasaki Heavy Industry, Korea Aero, Lockheed Martin, Lufthansa, L-3 Corporation, Martin Baker, Messier Services, Mexicana Airlines, NASA, Northrop Grumman, Northwest Airlines, Pratt and Whitney, Rockwell Collins, Rolls Royce, Shimadzu, Sifco, Smiths Industries, Snecma, SR Technics, Standard Aero, Sundstrand, Tactair Fluid Controls, Talla-Com, Thai Airways, Thai Aviation, United Airlines, United States Military, Volvo Aerospace, Weston Aerospace

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