



# SPECIFICATION CONFORMANCE & TESTING

## Formula 815 GD (301007)

The Cleaning Standard in Immersion & Ultrasonic Detergents

### Industry Approvals & Conformance

- **Airbus:** API 09-01-003 Approved Alkaline Cleaner
- **Airbus Industrie:** Consumable Material List (CML) Item #11-024A
- **Airbus UK:** ABP 8-1290; Approved Alkaline Cleaner
- **American Airlines:** CPN4106223
- **American Eurocopter:** AEC QA-DCR/10-06/01
- **Bell/Textron:** Material Bulletin 1608J
- **Boeing:** BAC 5749; Alkaline Cleaning (PSD 6-153)\*
- **Boeing:** BAC 5753; Cleaning, Descaling, and Surface Preparation of Titanium and Titanium Alloys
- **Boeing:** BAC 5763; Emulsion Cleaning (PSD 6-62)\*
- **Boeing:** HP 9-25; Degreasing
- **Boeing (McDonnell Douglas):** DPM 6373
- **Boeing (McDonnell Douglas):** DPS 9.341-1
- **Boeing (McDonnell Douglas):** P.S. 12024; Cleaning, Aqueous Immersion Degreasing
- **Bombardier Inc, Canadair:** MPS 180-40; Aqueous Degreasing
- **Bombardier (de Havilland):** PPS 31.04, Issue 21, Aqueous Degreaser
- **Ford:** Tox #150887
- **General Dynamics, Electric Boat Division:** Contract No. N0024-95-C 2103
- **GE Aviation:** S-421
- **GE Aviation:** SPM GEK9250 (CF6, GE90, CF34, CT7) 70-21-22, Method 1
- **GE Aviation:** SPM CFM-TP SP2 (CFM56) 70-21-18
- **GE Aviation:** List of Alloy Compatible Cleaners
- **GM:** FID Number - 261545
- **Goodrich:** ML 21304; Brake & Wheel Components
- **Goodrich Aerostructures (Rohr):** RMS 1533
- **Goodrich Aerostructures (Rohr):** RPS 17.23 Rev. AE; Metal Prep for Adhesive Bonding
- **Honeywell (Allied Signal):** EMS 53170
- **Honeywell:** Standard Practices Manual
- **Hughes:** SCGPS 56039
- **Hughes:** 780202
- **Lockheed Martin:** EPS G32.016

- **Lockheed Martin:** LMA-PG006, Rev B
- **Lockheed Martin:** STP-57301; Aluminum Cleaning
- **National Stock Number:** 07 Size; 6850-01-392-8439
- **National Stock Number:** 55 Size; 6850-01-392-8430
- **Naval Shipyard:** File No. 0006902; Cleaning Respirators and Paint Equipment
- **Northrop:** C-24
- **Pratt & Whitney:** SPMC 184, SPOP 209 Immersion Tank (oper. 1) and Spray-on/Rinse-off Cleaning (oper. 3); SPS 184
- **Rockwell:** LLD565-0013-001
- **Rolls Royce (Allison Engine):** EPS-345
- **Rolls-Royce:** CSS 204 Type A
- **Rolls Royce:** E.A. AX-1800-001
- **Rolls Royce:** OMAT 1/24S
- **Sikorsky Aircraft (United Technologies):** SS 8423 Rev 5
- **SNECMA:** CFM56 Manual, CP2597
- **South Coast AQMD:** Certified as a Clean Air Solvent
- **USDA A1**

### Test Compliance

- **ARP 1755A:** Stock Loss (Cat. 9)
- **ARP 1755B:** Stock Loss (Cat. 10)
- **ASTM F-483:** Total Immersion Corrosion
- **ASTM F-484:** Stress Cracking of Acrylic Plastics
- **ASTM F-485:** Unpainted Aircraft Surfaces
- **ASTM F-502:** Painted Aircraft Surfaces
- **ASTM F-519:** Hydrogen Embrittlement (Type 1c)
- **ASTM F-945:** Titanium Stress Corrosion (AMS 4916 & 4911 Alloys)
- **ASTM F-1110:** Sandwich Corrosion
- **ASTM F-1111:** Low-Embrittling Cadmium Plate
- **Boeing:** D6-17487 Rev. K; Exterior Cleaner
- **Boeing (McDonnell Douglas):** CSD 1; General Purpose Cleaner
- **Contains No Cyanides or Sulfides**
- **GE Aviation:** CT-882; Solvent Replacement
- **PWA 36604 Rev. D:** Determination of the Effect of Chemical Cleaners on Non-metallic Alloys (O-Rings)
- **PWA 36604 Rev. D:** Hot Corrosion Testing

## Formula 815GD-NF (301017)

The Cleaning Standard in APE/NPE-Free Immersion & Ultrasonic Detergents

### Industry Approvals & Conformance

- **BAE Systems:** Process Specification R10-6024
- **Boeing:** BAC 5749; Emulsion Cleaning (PSD 6-153)
- **Boeing:** BAC 5763; Alkaline Cleaning (PSD 6-59)
- **Bombardier (de Havilland):** PPS 31.04, Issue 21, Aqueous Degreaser
- **Goodrich:** GSIL 2006-01

- **Messier-Dowty:** PCS-2621 (Pending)
- **Rolls-Royce:** OMAT 1/24S
- **USDA A1 (LG)**

### Test Compliance

- **ASTM F-1110:** Sandwich Corrosion

## AquaVantage 1400 GD (431037)

Advanced Technology Immersion & Ultrasonic Detergent

### Industry Approvals & Conformance

- **Cessna Aircraft:** CSFS036; Aqueous Degreasing for Aircraft Parts
- **USDA A1 (LG)**

### Test Compliance

- **ASTM F-519:** Hydrogen Embrittlement (Type 1a)
- **ASTM F-945:** Titanium Stress Corrosion (AMS 4911)

## 815QR (301004)

Heavy-Duty Immersion & Ultrasonic Detergent

### Industry Approvals & Conformance

- **Ford:** Tox #037377
- **GM:** FID Number - 236998
- **Rolls Royce (Allison Engine):** 250-C30 Series, Operations and Maintenance Manual; Cleaning Fuel Nozzles
- **USDA C1 (LG)**

### Test Compliance

- **ARP 1755A:** Stock Loss (Special Test; No Classification)
- **ARP 1795A:** Stress Cracking of Titanium Alloys (4911)

\* including BMS8-276 substrate

## Brulin 1990 GD (301008)

The Industry Standard Spray Wash Detergent

### Industry Approvals & Conformance

- **Airbus:** AIPI 09-01-003 Approved Alkaline Cleaner
- **Airbus UK:** ABP 8-1290; Approved Alkaline Cleaner
- **Boeing:** BAC 5763; Emulsion Cleaning
- **General Dynamics, Electric Boat Division:** Contract No. N0024-95-C-2103
- **GE Aviation:** S-421
- **GE Aviation:** List of Alloy Compatible Cleaners
- **GM:** FID Number - 330546
- **Goodrich:** ML21345; Cleaning Aluminum and Steel Brake/Wheel Parts
- **Hamilton Sundstrand:** Soak Cleaning of Heat Exchangers
- **Honeywell (Allied Signal):** EMS 53170; Steel Brake/Wheel Parts
- **Honeywell:** Standard Practices Manual
- **Lockheed Martin:** EPS G32.0160
- **Lockheed Martin:** LMA-PG006, Rev B
- **Lucas Aerospace:** DC Starter/Gen
- **National Stock Number:** 05 Size; 6850-01-428-8842
- **National Stock Number:** 55 Size; 6850-01-435-6459
- **Philips Electronics:** 12NC Number: 1322-529-81201
- **Rolls Royce:** CSS204 Type A
- **Rolls-Royce:** OMAT 1/24 AG
- **South Coast AQMD:** Certified as a Clean Air Solvent

- **Teledyne Ryan Aeronautical:** RACO 2833, Alkaline Degreasing Fluid, Spray
- **United Airlines:** UMS CLE3005-3-2-Cleaner, High Temp/High Press. A/C Parts Washer
- **USDA A1**

### Test Compliance

- **ARP 1755A:** Stock Loss (Cat. 9)
- **ARP 1755B:** Stock Loss (Cat.10)
- **ASTM F-483:** Total Immersion Corrosion
- **ASTM F-484:** Stress Cracking of Acrylic Plastics
- **ASTM F-485:** Unpainted Aircraft Surfaces
- **ASTM F-502:** Painted Aircraft Surfaces
- **ASTM F-519:** Hydrogen Embrittlement (Type 1c)
- **ASTM F-945:** Titanium Stress Corrosion (AMS 4916 & 4911 Alloys)
- **ASTM F-1110:** Sandwich Corrosion
- **ASTM F-1111:** Low-Embrittling Cadmium Plate
- **Boeing:** D6-17487 Rev. K; Exterior Cleaner
- **Boeing (McDonnell Douglas):** CSD 1; General Purpose Cleaner
- **Contains No Cyanides or Sulfides**
- **GE Aviation:** CT-882; Solvent Replacement
- **Sandwich Corrosion Test**

## AquaVantage 3887 GD (431042)

Brulin's Highest Technology Spray Wash Detergent

### Industry Approvals & Conformance

- **American Eurocopter:** AEC QA-DCR/10-06/01
- **Boeing:** BAC 5749; Alkaline Cleaning (PSD 6-153)\*
- **Boeing:** BAC 5763; Emulsion Cleaning (PSD 6-62)\*
- **Rolls-Royce:** OMAT 1/24AM
- **Rolls-Royce:** CSS204 Type A
- **Pratt & Whitney:** SPMC 233, SPOP 1 (Degreasing the Exterior of the Engine); SPOP 209 (Immersion Tank Method; Aqueous Spray or Wipe with Rinsing Method; Spray Wash Machine); SPS 233
- **Pratt & Whitney:** PMC 1468; PS 422 Alkali Cleaner, Immersion; PS 438 Alkali Cleaner (Spray Wash)
- **International Aero Engines (CoMat pending)**
- **GE Aviation:** List of Alloy Compatible Cleaners
- **Honeywell Aerospace:** Acceptable per C5102 Rev. B

### Test Compliance

- **ARP 1755B:** Stock Loss (Cat. 10)
- **ASTM F-519:** Hydrogen Embrittlement (Type 1a)
- **ASTM F-945:** Titanium Stress Corrosion (AMS 4916 & 4911 Alloys)
- **GE Aviation:** ASTM F-2111; Intergranular Attack
- **GE Aviation:** Elemental Analysis Group I and Group III
- **GE Aviation:** Hot Corrosion
- **GE Aviation:** Appendix F, 3.1.1, Cyanide and Sulfide Content
- **PWA 36604 Rev. D:** Compatibility with PWA 407 Rubber
- **PWA 36604 Rev. D:** Compatibility with Non-Metallic Materials
- **PWA 36604 Rev. D:** Hot Corrosion
- **PWA 36604, MCL E-205 Type II:** Titanium Stress Corrosion
- **ASTM E1447:** Hydrogen pickup
- **Sandwich Corrosion:** per Honeywell EMS 53170 Rev. C
- **Sandwich Corrosion:** per BAC 5763, Rev H

## AquaVantage 3800 GD (431038)

Brulin's Highest Technology Spray Wash Detergent

### Industry Approvals & Conformance

- **Rolls Royce OMAT 1/24AB**
- **South Coast AQMD:** Certified as a Clean Air Solvent

### Test Compliance

- **ARP 1755B:** Stock Loss (Cat. 10)
- **Boeing (McDonnell Douglas):** CSD 1; General Purpose Cleaner

## AquaVantage 3800 B (431040)

Brulin's Highest Technology Non-Silicated, Neutral pH Spray Wash Detergent

### Industry Approvals & Conformance

- **South Coast AQMD:** Certified as a Clean Air Solvent

### Test Compliance

- **ASTM F-945:** Titanium Stress Corrosion (AMS 4911 Alloy)

## Brulin 1696 B (431039)

Neutral pH, Aerospace Spray Wash Detergent

### Industry Approvals & Conformance

- **Boeing:** BAC 5763; Emulsion Cleaning (PSD 6-62)
- **South Coast AQMD:** Certified as a Clean Air Solvent

### Test Compliance

- **ASTM F-945:** Titanium Stress Corrosion (AMS 4916 & 4911 Alloys)

\* including BMS8-276 substrate

## **Bruhin MP 1793** (304017 & 304030)

RTU Multi-Purpose Wipe Solvent

### **Industry Approvals & Conformance**

- **Approved for use with Dow Corning Silicone Building Sealants per ASTM C-794:** Peel Adhesion Test
- **Approved for use with GE Structural Adhesives per ASTM C-794:** Peel Adhesion Test
- **Boeing:** Number 84086
- **Boeing (McDonnell Douglas):** DPM 6380-1; MCS 6000, Type IB, Type IIIB, Type V, Type VI
- **Hamilton Sundstrand**
- **National Stock Number:** QT Size; 6850-01-466-6164

- **National Stock Number:** 05 Size; 6850-01-466-6172
- **National Stock Number:** 55 Size; 6850-01-466-6175
- **Sikorsky Aircraft (United Technologies):** QPL SS9170/204 rev1
- **USDA K1**

### **Test Compliance**

- **ARP 1755B:** Stock Loss Tests (Cat 9)
- **ASTM C-794:** Peel Adhesion Test
- **ASTM D-877:** Dielectric Breakdown (to 30,000 volts)
- **ASTM F-519:** Hydrogen Embrittlement (Type 1c)
- **ASTM F-945:** Titanium Stress Corrosion

## **BruhinSolv 140** (302064)

General-Purpose, Degreasing Solvent

### **Industry Approvals & Conformance**

- **Conforms to the Requirements of P-D-680 Type II**

## **Bruhin SD 1291** (304012)

RTU Wipe Solvent

### **Industry Approvals & Conformance**

- **Ford:** Tox #138532
- **GM:** FID Number -261497
- **National Stock Number:** 6850-01-423-1072
- **Navy Specifications - Removal of Grease and Adhesives to Replace MEK Publication Manual**
  - 110-300 Air Frames
  - 150-300 Power Plants
- **Sikorsky Aircraft (United Technologies):** QPL SS9170/204 rev1

### **Test Compliance**

- **ARP 1755A:** Stock Loss (Cat. 9)
- **ASTM D-471:** Effect on Rubber Property
- **ASTM D-485:** Unpainted Aircraft Surfaces
- **ASTM D-5229:** Moisture Absorption
- **ASTM F-519:** Hydrogen Embrittlement (Type 1c)
- **ASTM F-945:** Titanium Stress Corrosion (AMS 4911 Alloy)

## **Safety Strip 88 Plus** (331026, 331025, 331027)

Military Specification, Two Phase Stripper (Stripper Base & Additive)

### **Industry Approvals & Conformance**

- **MIL-PRF-83936C**

### **Test Compliance**

- **ASTM F-519:** Hydrogen Embrittlement (Type 1a)
- **Biodegradability per MIL-PRF-83936C**
- **Corrosion Rate per MIL-PRF-83936C**
- **Flammability per MIL-PRF-83936C**
- **Paint Removal per MIL-PRF-83936C**
- **Shelf-life per MIL-PRF-83936C**
- **Viscosity per MIL-PRF-83936C**

## **Safety Strip HT** (331021)

Industrial Stripper

### **Industry Approvals & Conformance**

- **Ford:** Tox #0006902
- **National Stock Number:** 05 Size; 6850-01-423-1082
- **National Stock Number:** 55 Size; 6850-01-394-0168
- **Naval Shipyard:** File No. 0006902; Cleaning Respirators and Paint Equipment

### **Test Compliance**

- **ASTM D-92:** Flash Point by Cleveland Open Cup (COC)
- **ASTM F-519:** Hydrogen Embrittlement (Type 1c)
- **Corrosion Rate per MIL-R-83936B**
- **Flammability per MIL-R-83936B**
- **Viscosity per MIL-R-83936B**

## **Safety Strip 5896B** (331022)

Aerospace Specification Stripper

### **Industry Approvals & Conformance**

- **National Stock Number:** 05 Size; 6850-01-474-2332
- **National Stock Number:** 55 Size; 6850-01-474-2329

### **Test Compliance**

- **ADS-61-PRF:** Hydrogen Embrittlement (Type 1d)
- **ADS-61-PRF:** Sandwich Corrosion (4.2.9, alloys listed in Table III, Test Procedure ASTM F 1110)
- **ADS-61-PRF:** Stock Loss Corrosion (4.2.7, alloys listed in Table III, Test Procedure ARP 1755)
- **ADS-61-PRF:** Titanium Stress Corrosion (AMS 4911 Alloy)
- **ADS-61-PRF:** Total Immersion Corrosion (4.2.6, type I Cleaners)
- **AMS 1374A:** Hydrogen Embrittlement (Type 1c)
- **AMS 1374A:** Low-Embrittling Cadmium Plate
- **AMS 1374A:** Performance
- **AMS 1374A:** Sandwich Corrosion

- **AMS 1374A:** Total Immersion Corrosion
- **AMS 1375B:** Remover, Polyurethane/Epoxy paint
- **ARP 1755:** Stock Loss Corrosion
- **ASTM F-483:** Total Immersion Corrosion
- **ASTM F-519:** Hydrogen Embrittlement (Type 1a)
- **ASTM F-945:** Titanium Stress Corrosion
- **ASTM F-1110:** Sandwich Corrosion
- **ASTM F-1111:** Low-Embrittling Cadmium Plate
- **Dissimilar Metal Corrosion**
- **Paint Removal**
- **Refinishing Properties of Stripped Surfaces**

## 815AF (391007)

Military Specification Exterior Plane Wash

### Industry Approvals & Conformance

- **Boeing:** BAC 5744; Manual Cleaning
- **MIL-C-87936A, Type I**
- **National Stock Number:** 05 Size; 6850-01-423-1086
- **National Stock Number:** 55 Size; 6850-01-394-2618

### Test Compliance

- **ARP 1511:** Low-Embrittling Cadmium Plate
- **ASTM F-483:** Total Immersion Corrosion
- **ASTM F-484:** Stress Cracking of Acrylic Plastics
- **ASTM F-485:** Unpainted Aircraft Surfaces
- **ASTM F-502:** Painted Aircraft Surfaces
- **ASTM F-519:** Hydrogen Embrittlement (Type 1a)
- **Cold Stability per MIL-C-87936A**
- **Residue Rinsibility per MIL-C-87936A**

## Formula 715N (303051)

Heavy-Duty, Exterior Aircraft Cleaner

### Industry Approvals & Conformance

- **MIL-C-43616B Class I**
- **Rolls Royce (Allison Engine):** 250-C20 Operations and Maintenance Manual; Exterior Skin and Gas Pathway Cleaner for Removal of Carbon Deposits

## Airshow W (391002)

Aerospace Specification Exterior Plane Wash

### Industry Approvals & Conformance

- **Boeing:** D6-37547, Heavy Duty Cleaner

### Test Compliance

- **Boeing (McDonnell Douglas):** CSD 1
- **Cadmium Removal Test**
- **Effects on Painted Surfaces**
- **Hydrogen Embrittlement Test**
- **Immersion Corrosion Test**
- **Residue Test**
- **Sandwich Corrosion Test**
- **Stress Cracking of Acrylic Base Plastics**

## Formula 512M (303004)

Heavy-Duty Cleaner Degreaser

### Industry Approvals & Conformance

- **Ford:** Tox #029722
- **MIL-C-43616B, Class I**
- **Rolls Royce (Allison Engine):** 250-C20 Operations and Maintenance Manual; Exterior Skin and Gas Pathway Cleaner for Removal of Carbon Deposits

## Formula 815MX (111005)

Interior & Exterior, General-Purpose Cleaner

### Industry Approvals & Conformance

- **Anheuser Busch:** CTS #07979-000
- **Bell Helicopter:** Material Bulletin 1195; Cleaning Compound, Aircraft Surface, Alkaline Waterbase
- **Boeing:** Maintenance Manual; Aircraft Cleaning – Exterior, P/N 0-0320-3-0010
- **Boeing (McDonnell Douglas):** DC-9; Cleaning of Cabin Outflow Valve
- **Caterpillar:** CAT-3-9786199
- **Ford:** Tox #001059
- **GM:** FID Number - 097146; FID Number - 017635 JX; Ultrasonic Cleaning Circuit Boards
- **National Stock Number:** 07 Size; 6850-00-485-0889
- **National Stock Number:** 55 Size; 6850-00-753-4548
- **South Coast AQMD:** Certified as a Clean Air Solvent
- **USDA A1**

### Test Compliance

- **AMS 1526 B:** Exterior Aircraft Cleaning
- **AMS 1527 B:** Exterior Aircraft Cleaning
- **AMS 1550:** Interior Aircraft Cleaning
- **AMS 1550 A:** Interior Aircraft Cleaning
- **ASTM F-483:** Total Immersion Corrosion
- **ASTM F-484:** Stress Cracking of Acrylic Plastics
- **ASTM F-485:** Unpainted Aircraft Surfaces
- **ASTM F-502:** Painted Aircraft Surfaces
- **ASTM F-519:** Hydrogen Embrittlement (Type 1c)
- **ASTM F-1110:** Sandwich Corrosion
- **ASTM F-1111:** Low-Embrittling Cadmium Plate
- **Boeing:** D6-17487 Rev. L; Exterior Cleaner
- **Boeing (McDonnell Douglas):** CSD 1; Type I, Exterior Cleaning

## Nut Lube 10B (FD) (404060)

Industry Approved Lubricant & Corrosion Inhibitor

### Industry Approvals & Conformance

- **IMDS ID:** 56896425