



FORMULA 815 GD

The Cleaning Standard In
Immersion & Ultrasonic Detergents

An Aero Spec, Mildly Alkaline Detergent — Approved for a Wide Range of Industries



Immersion
& Ultrasonic
Detergent

An unrivaled combination of cleanability, broad material compatibility, extensive industry approvals and recyclability produced in a safe formulation, Formula 815 GD is the product of choice in most immersion and ultrasonic cleaning applications.

- **Unsurpassed Cleanability**
Recognized as the standard in immersion & ultrasonic detergents
- **“One Product” Parts Cleaner**
Cleans virtually all metals including steels, aluminum and titanium

Benefits

- Aerospace Approved
- Independent Performance Documentation – Proven Quality Results
- Water-Based, Dilutable Formulation – For Environmental Safety & Economy of Use
- Extends Bath Life – Creates Labor Savings & Reduces Costs
- In-Process Corrosion Control
- Transmits Ultrasonic Cavitation at All Temperatures
- Free Rinsing – Cleaner Parts & Simplified Cleaning

Greener 13 Ways

More user and environmentally friendly, reducing costly paperwork

1. No Hazardous Ingredients as listed on the MSDS (w/OSHA PELS)
2. No SARA Title III, Section 313 Reportable
3. No Ozone Depleting Substances
4. No Global Warming Potential
5. No RCRA Reportable Ingredients or Characteristics
6. Low Caustic
7. No Glycol Ethers
8. No Chelants
9. No Butyl
10. SCAQMD: Certified as a Clean Air Solvent
11. Recycles Easily
12. Biodegradable
13. RoHS Compliant

Industry Approvals & Conformance

- Airbus: AIP 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 *
- 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: PMC 1437-1; PS 422 Alkali Cleaner, Immersion
- 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

* Including BMS 8-276 substrate

Test Compliance

- ARP 1755A: Stock Loss (Cat. 9)
- ARP 1755B: Stock Loss (Cat.10)
- ASTM F-483: Total Immersion Corrosion
- ASTM F-484: Stress crazing 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-Embrittlement 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 815 GD

Performance Properties

Substrates

Formula 815 GD is non-corrosive and non-staining to a wide variety of alloys. Some selected categories of materials compatible with **Formula 815 GD** include*:

Ferrous Metals: Carbon Steel • Stainless Steel

Non-Ferrous Metals & Alloys: Aluminum • Cadmium Plating • Chrome Plating • Copper (Alloys & Plating)** • Hastelloy • Inconel • Magnesium & Magnesium Alloys • Monel • Ni-Cad Plating • Nickel, Nickel Alloys & Plating • Titanium & Titanium Alloys

Plastic & Composites: Acrylics • Epoxy Resin • High Density Polyethylene/HDPE • Nitrile Butadiene Rubber • Polypropylene/PP • Polyvinyl Chloride/PVC

Other: Glass • Painted Surfaces

Soils

Formula 815 GD removes a wide range of organic and inorganic soils. Some categories of soils that can be removed with **Formula 815 GD** include*:

Buffing Compounds • Carbon • Coolants • Dirt (Particulate) • Fat • Flux • Grease • Oil (General, Cutting, Drawing Compounds, Forming, Honey, Hydrocarbon, Lubricants, Self Emulsifying, Silicone/Greases, Sulfur/Chlorinated, Water-Soluble)

*Material compatibility should always be confirmed via testing with specific contaminants under specific cleaning conditions. **Minor discoloration may occur under certain conditions.

Use Recommendations

System	Immersion & Ultrasonic Tanks
Dilution	5-30%, typically used at 10%
Cleaning Temperature Range	130-170°F (54-77°C), typically used at 140-150°F (60-66°C)
Cleaning Duration	1-30 minutes: typical parts are clean in 3-10 minutes
Rinse Temperature	A heated rinse may improve overall performance. Some OEM process specifications may require a heated rinse.
Rinse Water Quality	Recommended conductivity of final rinse water: • Ultra-Clean Applications: ≤ 50 microsiemens • Precision Cleaning: ≤ 500 microsiemens • Gross Cleaning: > 500 microsiemens
To avoid spotting, it is best if the parts remain wet between processing stages.	

Typical Chemical Characteristics

Physical Form	Liquid
Color	Blue
Odor/Fragrance	Mild
Viscosity	Water-thin
Weight	8.96lbs/gal (1.074 g/ml)
pH of Concentrate	12.0
pH of Working Solution:	11.5
Flash Point (PMCC)	None to boiling
Foaming Tendency	Moderate to high
Calculated V.O.C	None
Freeze/Thaw	Reusable after thawing & remixing

Concentration Verification

Bruin Titration Kit (Prod. No. XTRKIT)	
Sample Size:	5 mL
Titrant:	1.0 N HCl Solution
Indicator:	Bromophenol Blue (2 Drops)
Concentration %:	Drops Titrant x 0.81
or	
Sample Size:	10 mL
Titrant:	1.0 N HCl Solution
Indicator:	Bromophenol Blue (3 Drops)
Concentration %:	Drops Titrant x 0.42

Burette Test Method	
Sample Size:	50 mL
Titrant:	0.5 N HCl Solution
pH Endpoint:	3.80
Concentration %:	mL's Titrant x 1.25



PRODUCT NUMBER
301007



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