



BRULIN 1990 GD

The Industry Standard Spray Wash Detergent

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



Spray Wash Detergent

An unrivaled combination of cleanability, broad material compatibility, extensive approvals and recyclability, produced in a safe formulation, Brulin 1990 GD is the product of choice in most spray wash cleaning applications.

- **Superior Cleanability**
Recognized as the industry spray wash standard
- **"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
- Low Foaming at Temperatures Greater Than 120°F (49°C)
- Free Rinsing – Cleaner Parts & Simplified Cleaning

Greener 15 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. No Caustic
7. No Glycol Ethers
8. No APs (Alkylphenols) or APEs (Alkylphenol ethoxylates)
9. No Chelants
10. No Butyl
11. No Amines
12. SCAQMD: Certified as a Clean Air Solvent
13. Recycles Easily
14. Biodegradable
15. RoHS Compliant

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

BRULIN 1990 GD

Performance Properties

Substrates

Brulin 1990 GD is non-corrosive and non-staining to a wide variety of alloys. Some selected categories of materials compatible with Brulin 1990 GD include:*

Ferrous Metals: Carbon Steel • Stainless Steel

Non-Ferrous Metals & Alloys: Aluminum • Cadmium Plating • Chrome Plating • Copper (Alloys & Plating) • Magnesium & Magnesium Alloys • Nickel, Nickel Alloys & Plating • Titanium & Titanium Alloys

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

Other: Painted Surfaces

Soils

Brulin 1990 GD removes a wide range of organic and inorganic soils. Some categories of soils that can be removed with Brulin 1990 GD include:*

Buffing Compounds • Coolants • Dirt (Particulate) • Fat • Grease • Oil (General, Cutting, Drawing Compounds, Forming, Hydrocarbon, Lubricants, Self Emulsifying, Water Soluble)

**Material compatibility should always be confirmed via testing with specific contaminants under specific cleaning conditions.*

Use Recommendations

System	Spray Wash (Batch or Continuous)
Dilution	3-15%, typically used at 5%
Cleaning Temperature Range	120-170°F (49-77°C); typically used at 130-150°F (54-66°C)
Cleaning Duration	1-30 minutes: typical parts are cleaned 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: <ul style="list-style-type: none">• 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	Water White
Odor/Fragrance	Mild
Viscosity	Water-thin
Weight	8.88 lbs/gal (1.06 g/ml)
pH of Concentrate	11.3
pH of Working Solution	10.5
Flash Point	None to boiling
Foaming Tendency	Low
Cloud Point	>120°F (49°C)
Calculated V.O.C	0% (0 g/l)
Freeze/Thaw	Reusable after thawing & remixing

Concentration Verification

Brulin Titration Kit (Prod. No. XTRKIT)	
Sample Size:	20 mL
Titrant:	1.0 N HCl Solution
Indicator:	Bromophenol Blue
Concentration %:	Drops Titrant x 0.34

Burette Test Method	
Sample Size:	25 mL
Titrant:	0.1 N Acid Solution
pH Endpoint:	3.80
Concentration %:	mL Titrant x 0.80
or	
Sample Size:	25 mL
Titrant:	0.1 N HCl Solution
pH Endpoint:	4.50
Concentration %:	mL Titrant x 0.86



Packaging

SHIPPING: Non-hazardous for shipping by ground, sea, or air in all package sizes.

STORAGE: Store in well-ventilated areas at temperatures between 40-110°F (4-43°C). Recommended shelf life of this product is 18 months.

DISPOSAL: Biodegradable. Pretreat by skimming and/or filtering. Final sewerability is determined by the municipal sewer district covering the plant location.

AVAILABILITY:

- 5 Gal (19L)
- 55 Gal (208L)
- 275 Gal Tote (1,041L)
- Bulk - up to 5,000 Gal (~19,000L)

Companion Products

Formula 815 GD (Product No. 301007)

The Cleaning Standard in Immersion & Ultrasonic Detergents

Formula 815 MX (Product No. 111005)

The Legendary General Purpose Cleaner Degreaser

DISTRIBUTED BY:

PRODUCT NUMBER
301008



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431-204H