

BIO-CLEAN



Consultants and Distributors of
Environmentally Safe Cleaning Technologies

BRULIN 1990 GD

*An Aero
Spec, Mildly
Alkaline
Detergent
approved for a
wide range of
industries*



...the industry standard Spray Wash Detergent

An unrivalled combination of cleaning ability, broad material compatibility, extensive approvals, is extremely recyclable and produced in a safe formulation — Brulin 1990 GD is the industries product of choice in spray wash and high aeration cleaning applications.

- Superior Aqueous Cleaning Ability
Recognised as the industry spray wash standard used in quality manufacturing
- “One Product” Parts Cleaner
Cleans virtually all metals and composites including steels, aluminum and titanium

Benefits

- Aerospace Approved Throughout the World
- Independent Performance Documentation – Extensive Proven Quality Results
- Water-Based, Dilutable Formulation – For Environmental Safety & Economic Use
- Provides Long Tank Life Without Drain Down – Reduces Downtime, Saves on Maintenance Labour, Reduces Product Wastage and Cost
- In-Process Corrosion Control
- Low Foaming at Temperatures Greater Than 49°C
- Promotes Free Rinsing – Producing Cleaner Parts with Simplified Cleaning

Environmentally Green

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 Butyl
9. No APs (Alkylphenols) or APEs (Alkylphenol ethoxylates)
10. No Amines
11. No Chelants
12. SCAQMD Certified as a Clean Air Solvent
13. Recycles Easily
14. Biodegradable
15. RoHS Compliant
16. REACH Compliant

Industry Approvals & Conformance

- **Airbus UK:** ABP 8-1290; Approved Alkaline Cleaner
- **Allied Signal:** EMS 53170; Steel Brake/Wheel Parts
- **Boeing:** BAC 5763; Emulsion Cleaning
- **General Dynamics, Electric Boat Division:** Contract No. N0024-95-C-2103
- **GE Aircraft Engines:** S-421
- **GM:** FID Number - 330546
- **Goodrich:** ML21345; Cleaning Aluminum and Steel Brake/Wheel Parts
- **Lockheed Martin:** EPS 632.0160
- **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, D
- **Rolls Royce Submarines:**
- **South Coast Air Quality Management District:** 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 P

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:** CT-882; Solvent Replacement
- **High Temperature Corrosion Test**
- **Sandwich Corrosion Test**





Health, Risk and Safety Information

(R36/37/38) Irritating to eyes, respiratory system and skin.

(S2) Keep out of reach of children.

(S24/25) Avoid contact with skin and eyes.

(S26) In case of contact with eyes rinse immediately with plenty of water and seek medical advice.

(S46) If swallowed seek medical advice immediately and show this label.

(S37/39) Wear suitable gloves and eye/face protection.

INDUSTRIAL OR COMMERCIAL USE ONLY
KEEP OUT OF REACH OF CHILDREN

COSHH

Hazard Rating: IRRITANT



Packaging

EUROPEAN STOCK: 25 Litre UN Certified kegs and 208 litre Drums.

SHIPPING: Non-Hazardous for shipping by ground, sea or air freight.

STORAGE: Store in well ventilated dry areas at temperatures between 4 – 43°C

SHELF LIFE: Guaranteed shelf life is 18 months from the date of manufacture.

DISPOSAL: Biodegradable. Pre-treat by skimming and/or filtering oils and contaminates.

Final sewer disposal is allowed by arrangement with your local water authority.

Companion Products

AquaVantage 3887GD

Brulin's Highest Technology Spray Wash Detergent

Formula 815GD-NF

The World Cleaning Standard in Immersion & Ultrasonic Detergent

Safe for Use on Many Substrates

Brulin 1990 GD is non-corrosive and non staining to a wide variety of metals, alloys and composite materials, some selected categories of materials compatible with Brulin 1990 GD include:

Ferrous metals: Carbon steel • Stainless Steel

Non-Ferrous Metals & Alloys: Aluminium • Cadmium Plating • Chrome Plating • Copper • Magnesium & Magnesium Alloys • Nickel & Nickel Alloys • Titanium & Titanium Alloys

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

Other: Glass • Painted Surfaces

Removes a Wide Range of Soils

Brulin 1990 GD can remove a wide range of organic and inorganic soils as typically found in OEM and rebuild facilities. Some categories of soils that can be removed with Brulin 1990 GD include:

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

Material Compatibility should always be confirmed via testing with specific contaminates under specific cleaning conditions.

FILTRATION: Brulin 1990GD aqueous solution can be filtered down to as low as 0.5 microns. Typical Filtration of solution in working systems is with 10 micron media. The goodness of the product is not stripped using low filtration media, unlike other detergents.

Cleaning Use Ranges

System	Spray Wash (Batch or Continuous)
Dilution	3-15%; typically used at 5-7% v/v
Temperature Range	49-77°C; typically used at 54-66°C
Cleaning Duration	1-30 minutes; typically 3-10 mins
Rinsing	Rinsing quality controls final cleanliness. 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 important to keep parts wet between processing stages.	

Typical Chemical Characteristics

Physical Form	Liquid
Colour	Water White
Odour/Fragrance	Very Mild
Viscosity	Water-thin
Weight	1.06 g/ml
pH of Concentrate	11.3
pH of Working Solution	10.5
Flash Point	None
Foaming Tendency	Low
Cloud Point	>49°C
V.O.C.	0%
Freeze/Thaw	Reusable

Concentration Verification

BIO-CLEAN Titration Test Kit	
Sample Size:	20 mL
Titrant:	1.0 N HCl Solution
Indicator:	Bromphenol Blue
Concentration %:	Drops Titrant x 0.34
Or	
Sample Size:	25mL
Titrant:	1.0 N HCl Solution
pH Endpoint:	4.50
Concentration %:	mL Titrant x 0.86

Burette Test Method	
Sample Size:	25 mL
Titrant:	1.0 N Acid Solution
pH Endpoint:	3.80
Concentration %:	mL Titrant x 0.80

NB. MINIMUM RECOMMENDED CONCENTRATION FOR CLEANING ALUMINIUM IS 4%



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