FORMULA 815QR

Heavy Duty Immersion and Ultrasonic Detergent

Aggressive cleaning for the most tenacious soils, and broad compatibility with steel, aluminum, and most common substrates — 815QR is the ideal detergent for automotive rebuild and other heavy-duty immersion cleaning processes.

BENEFITS

- **Heavy-duty Cleaning** — Cleans stubborn greases, carbon, and other difficult soils on steel, aluminum, and most common substrates.
- **Water-based, Dilutable Formulation** – For environmental safety and economy of use
- **Extends Bath Life** – Reducing costs
- **In-Process Corrosion Control**
- **Transmits Ultrasonic Cavitation –** At all temperatures
- **Free Rinsing** – Cleaner parts and simplified cleaning

- **11 Ways Greener**
  - More user and environmentally friendly, reducing costly paperwork:

1. No SARA Title III, Section 313 Reportable Substances
2. No Ozone Depleting Substances
3. No Global Warming Potential
4. No CERCLA Reportables
4. No RCRA Reportable Ingredients or Characteristics
6. Low Caustic
7. No Glycol Ethers
8. No Butyl
9. No Chelants
10. Recycles Easily
11. Biodegradable

INDUSTRY APPROVALS

- Ford: TOX #037377
- General Motors: FID Number - 236998
- USDA C1

CHEMICAL CHARACTERISTICS

Physical Form	Liquid
Color	Blue
Fragrance	Citrus
Density	8.90 lbs/gal (1.06g/ml)
Specific Gravity	1.070
Viscosity	Water-thin
Typical pH of Concentrate	12.5
Typical pH of 10% Dilution	11.6
Flash Point	None
Foaming Tendency	Medium to high
Cloud Point	>200°F (93°C)
V.O.C's	8.4% and 89.6 g/l
Freeze/Thaw	Reusable after thawing & remixing
Shelf Life	1 Year

DILUTION RATES

Light Soils	1-5%	1:100 - 1:20	1 - 6.5 oz/gal	10 - 50 ml/l
Normal Soils	10%	1:10	13 oz/gal	100 ml/l
Heavy Soils	15%	1:7	20 oz/gal	150 ml/l

SUGGESTED PROCESS CLEANING RANGES

Application:	Immersion or ultrasonic cleaning
Dilution Rate:	1-15%, typically used at 10%
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 for OEM applications, may be longer in rebuild industries.
Rinsing:	For ultra-clean applications, it is recommended that the conductivity of the final rinse be maintained at levels of 50 microsiemens or below. For precision cleaning, a standard of 500 microsiemens or below can be used. For gross cleaning, higher than 500 microsiemens may be suitable.

Note: To avoid spotting, it is best if the parts remain wet between processing stages.

Aggressive immersion cleaning for the heaviest soils found in a wide range of industries

FORMULA 815QR

PERFORMANCE PROPERTIES

SUBSTRATES 815QR is non-corrosive and non-staining to a wide variety of materials including those found in automotive rebuild, automotive OEM manufacture, and many others. Some selected categories of materials and other typical substrates believed to be compatible with 815QR are shown below:

Ferrous Metals	Other Metals and Alloys
Carbon Steel	Aluminum
Stainless Steel	Magnesium
	Titanium

Not generally recommended for copper and copper based alloys

Although this information is believed to be accurate, material compatibility should be confirmed via testing with specific substrates under specific cleaning conditions.

SOILS 815QR 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 815QR are shown below:

Carbon	Grease
Coolants	Inks
Drawing Compounds	Honey Oils
Fat	Oil
Fingerprints	Silicone Oils/Greases
Flux	Sulfur/Chlorinated Oils
Forming Oils	Tar and Pitch

Although this information is believed to be accurate, cleaning performance should be confirmed via testing with specific contaminants under specific cleaning conditions.

Testing Compliance

SAE ARP 1795A: Stress Crazing of Titanium Alloys

Concentration Verification

Brulin Titration Kit (Prod. No. XTRKIT)

Sample Size:	5 mL
Titrant:	1.0 N HCl Solution
Indicator:	Bromophenol Blue - 2 drops
Concentration %:	Drops Titrant x 0.46

Burette Test Method

Sample Size:	50 mL
Titrant:	0.5 N HCl Solution
pH Endpoint:	4.50
Concentration %:	mL's Titrant x 0.56

or

Sample Size:	50 mL
Titrant:	0.5 N HCl Solution
pH Endpoint:	3.80
Concentration %:	mL's Titrant x 0.55

Safety

HMIS HAZARD RATING

Health	2
Flammability	0
Reactivity	0
PPE	B

WARNING Contains 2-Aminoethanol. Direct contact may result in eye irritation. Prolonged contact may cause skin irritation. Ingestion may cause irritation of mouth and throat. Excessive exposure may cause respiratory irritation.

FIRST AID:

Eye Contact: Flush with large amounts of water for at least 15 minutes, lifting upper and lower lids occasionally. Get medical attention.

Skin Contact: Wash with mild soap and water. Remove contaminated clothing and launder before reuse.

Ingestion: Do not induce vomiting. Keep warm and quiet. Give at least two glasses of water. Never give anything by mouth to an unconscious or convulsive person. Get prompt medical attention.

Inhalation: If affected by vapors, remove to fresh air.

KEEP OUT OF REACH OF CHILDREN

Companion Products

Formula 815GD
Aerospace spec immersion/ultrasonic detergent

Brulin 63-G
Heavy-duty spray wash detergent

SHIPPING
Packing Group II

STORAGE
815QR should be stored in well-ventilated areas at temperatures between 40-120°F (4-49°C). The recommended shelf life of this product is one year.

DISPOSAL
815QR is biodegradable and can be pretreated by skimming and/or filtering. Final sewerability is determined by the municipal sewer district covering the plant location.

PACKAGING 815QR is available in:

- 2.5 gallon (9.5L),2 per case
- 55 gallon (208L) drums
- 275 gallon (1,041L) returnable totes
- 275 gallon (1,041L) non-returnable totes
- Bulk--up to 5,000 gallons (~19,000L) or 45,000 lbs. (~20,500 kg)

PRODUCT NUMBER
301004

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