

Product Type

TEROSON RB AL6004 (known as AQUALOCK 6004) is a heat curing water based adhesive.

Substrate Type

Steel to steel

Application

Bonding friction materials (disc brakes, clutches, T-bands, etc.) to metal.

Product Technology

Cured TEROSON RB AL6004 (KNOWN AS AQUALOCK 6004) furnished excellent resistance to thermal shock and chemicals. The cured bond can withstand temperatures exceeding 500°F – 600°F (260° - 316°C).

TEROSON RB AL6004 (KNOWN AS AQUALOCK 6004) exhibits high shear strength at ambient and elevated temperatures. It has excellent resistance to chemicals. TEROSON RB AL6004 (KNOWN AS AQUALOCK 6004) is very low in VOC.

Typical Properties

Property	Typical Results
Base	Synthetic Rubber and Resin Dispersion in Water
Color	Light Blue-Green when wet; Dark Brownish Green when dried
Brookfield Viscosity #4 @ 20 rpm, 77°F, 15 sec	3500 – 7000 cps
Weight / Gallon	8.7 lbs/gallon (1.04 kg/liter)
Total Solids By Weight By Volume	26 – 30% 25% (calculated)
Solvents	Deionized water (major component) Propoxypropanol and isopropanol (minor component)
Thinner	Distilled or deionized water
Calculated Coverage	400 ft ² /gal/mil (9.6 m ² /L/0.0254 mm)
Dry Time	24–30 minutes @ 350°F–425°F (176°C–219°C) and 150–3000 psi (1.03–20.68 MPa) bonding pressure

Performance Properties

- Shear Strength:**
 The following data has been established using SAE J840 test method. This data is based on a steel-to-steel bond. Shear values for actual parts will vary depending on friction material composition.

Typical Disc Shear Values (SAE J840; steel to steel)			
Test Temperature		psi	MPa
75°F	24°C	4400	30.3
250°F	121°C	2500	17.2
300°F	176°C	1800	12.4
400°F	204°C	1000	6.9
450°F	232°C	800	5.5
500°F	260°C	700	4.8

Application Method

Method	Conventional or airless spray; curtain coating; brush; roll coating
Film Thickness	1 to 3 mils (0.03 to 0.08mm) dry recommended
Cure	24 - 30 minutes @ 350°-420°F (176°-219°C) with 150 - 300 psi (1.03-20.68 MPa)
Drying	Drying ovens with high air flow (>2000 CFM) work best for water based products. A 6 mil wet film has been dried as quickly as 1 minute at 155°F with 3500 CFM air flow.

Spray Method	
Spray Gun	Binks Mach 1 HVLP
Fluid Tip	94 (fine) or 97 (coarse)
Air Cap	95P
Line Pressure	90 psi
Gun Pressure	7.5 psi

Roll Coating Method	
Coater	Black Brother 22D500
Roll	Shore A-40
Grove Pattern	A2336
Feed Speed	30 ft/min
Coating Nip	-0.005" to -0.020"
Doctor Nip	0.00" to 0.014"

Metal Surface Preparation

- Clean surface to be bonded. Metal should be degreased and **GRIT** blasted preferably using aluminum oxide; if not, a steel **GRIT** can be used.
- This material will not adhere to untreated metal.
- For best performance, substrate should be free of contamination before material is applied.

Product Removal

- The methods used to clean adhesive residue will vary with the physical state of the material.
- Wet Adhesive** – Wash parts with tap water.

- **Dried, Uncured Adhesive** - Immerse parts in a 5 - 10% alkaline cleaning solution for 2-4 hours. Cleaning action can be accelerated by warming the cleaning bath to 70°C. The adhesive film will not dissolve, but will soften sufficiently to be removed by gentle scrubbing. Dried adhesive can also be removed with methyl ethyl ketone or acetone.
- **Cured Adhesive** - The adhesive is largely unaffected by water or solvents. Abrasive removal or burning off of the adhesive film at temperatures greater than 600°F are the only practical methods.

Health and Safety

- **For safe handling information on this product, consult the Material Safety Data Sheet (MSDS).**
- Prior to application it is necessary to read the Safety Data Sheet for information about precautionary measures and safety recommendations.
- For chemicals exempt from compulsory labeling, the relevant precautions should always be observed.

Product Control Test Method

- No specific test methods are recommended to be used by customer.
- Additional information on product testing is available upon request.

Storage Requirements

- Store product in the unopened container in a dry location
- **Keep away from heat and direct sunlight.**
- **Store between 4°C and 15°C (40°F and 60°F).**
- **Shelf life of product is 270 days.**
- Material is frost sensitive. ****DO NOT FREEZE****
- If material is stored between 15°C and 23°C (60°F and 77°F), shelf life of material is 120 days.
- Mixing TEROSON RB AL6004 (known as AQUALOCK 6004) is recommended to maintain consistent viscosity. However, mixing with high shear or mixing for too long will cause the product to destabilize and gel. Henkel Corporation recommends using low shear, propeller-style mixing blades with a low RPM mixer. Contact your Technical Sales Representative for a recommendation to fit your needs.
- When mixing these products, it is important to mix at a slow enough speed to not draw air into the product. Whipping air into the product will cause a rapid increase in viscosity. The mixer should be adjusted so that only a slight vortex is created at the surface of the adhesive. If too much air has been mixed into the adhesive, simply mix at slow speed until the trapped air has been released.
- * Keep all containers tightly sealed when not in use. These products will form a dry skin when exposed to air for prolonged periods of time. If a skin has formed on the adhesive, remove it before attempting to mix the product. Unlike solvent based products, this skin will not dissolve or disperse back into the adhesive.

Waste Disposal

- Refer to MSDS for further information

Order Information

- Bulk IDH Number **833000**
- Please call for available packaging

Creation Date July 2004

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Revision Number 3

REVISION HISTORY

4.16.13 New format. Updated name due to rebranding.
Updated color and Brookfield typical results
5.13.14 Updated shelf life and storage conditions
06.01.15 Updated Viscosity results

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
mm / 25.4 = inches
 $\mu\text{m} / 25.4 = \text{mil}$
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi

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