

Product Type

TEROSON RB AL6000 (known as AL 6000-MTO) is a water based, thermosetting adhesive

Substrate Type

Metallic or non-metallic compositions to metal substrates.

Application

Bonding friction materials to steel or aluminum
 Bonding steel or aluminum to themselves or each other

Product Technology

This adhesive provides excellent bond strength at ambient and elevated temperatures. TEROSON RB AL6000 (known as AL 6000-MTO) air-dries to a tack-free state either in ambient conditions or with moderate oven temperatures. The cured film is resistant to water, grease, oil, and solvents.

Typical Properties

Property	Typical Results
Base	Nitrile Rubber and Phenolic Resin
Color	Black
Brookfield Viscosity RVF, #4 @ 20 rpm, 77°F, 15 sec	3500 – 7000 cps
pH	8.3 – 8.7
Weight / Gallon	8.5 – 8.9 lbs / gallon (1.02 – 1.07 kg/L)
Solid Content	27 – 31%
Solvents	Distilled / deionized water (major component)
Thinner	Distilled or deionized water
Calculated Coverage	460 ft ² /gal/mil
Dry Time	2-8 hrs @ 70°F (21°C) or 20-60 min. @ 180°F (82°C) (dependent on film thickness and relative humidity)

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. Shears values for actual parts will vary depending on friction material composition.

Quality Control Standards	
Room Temperature	2500 psi+
400°F	500 psi+

Fresh Material			
Test Temperature		psi	MPa
75°F	24°C	4200	28.9
250°F	121°C	2200	15.2
300°F	149°C	1850	12.8
400°F	204°C	1150	7.9
450°F	232°C	430	2.9
500°F	260°C	350	2.4

Material Aged @ 50°F – 73°F		
	Ambient	400°F
16 weeks	2000 – 3000	400 – 720
20 weeks	2000 – 2700	400 - 700
24 weeks	2000 – 2700	400 - 700

Application Method

Method	Conventional or airless spray; curtain coating; silk screening
Film Thickness	1 to 3 mils (0.03 to 0.08mm) dry recommended
Cure	24 - 30 minutes @ 375°-400°F (190°-204°C) with 200 - 400 psi (14-28 kg/cm ²)
Pumping	Avoid using high shear pumps to prevent coagulation of the adhesive.
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. TEROSON RB AL6000 (known as AL 6000-MTO) can also be dried at room temperature.

DRYING TIME - FINGER TACK TIME (NO TRANSFER)		
Wet Film Thickness (mils)	77°F (25°C)	185°F (85°C)
10	20	13
15	40	20
20	48	22
25	53	23

Metal Surface Preparation

- This material has been developed to adhere to metals which have been cleaned, treated, and primed.
- 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.

- **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 of the adhesive film is the only practical method.

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 AL6000 (known as AL 6000-MTO) 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 **832999**
- Please call for available packaging

Creation Date 15 May 2007

Revision Date 01 June 2015

Revision Number 4

REVISION HISTORY

04.15.08	New format
04.08.13	Updated name due to rebranding.
05.13.14	Update shelf life and storage conditions and viscosity
06.01.15	Updated Viscosity and 16 hr aged information
11.28.16	Updated solids range from 28-32% to 27-31%

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{mm} / 25.4 = \text{inches}$
 $\mu\text{m} / 25.4 = \text{mil}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} \times 145 = \text{psi}$

Trademark usage

Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications