SA10-05-10-20A Structural Adhesive

Preliminary TDS Version 7.3-009, 24-05

ACRALOCK ENGINEERED BONDING SOLUTIONS, LLC.

ADHESIVE DESCRIPTION

ACRALOCK SA10-05A, SA10-10A, SA10-20A are three similar base methacrylate adhesives (Component A) that only differ by working time ranges. Formulated for use with an activator (Component B) and mixed at 10:1 ratio. The SA10-05A is used for 5 minute, SA10-10A for 10 minute, using ACT-1B. SA10-20A can be used with faster or slower activators; ACT-1B, ACT-2B or ACT-3B to provide working time options from 15 to 30 minutes. See cartridge code chart. These products are designed with low boiling tendencies and high strength to adhere to assemblies of thermoset composites and plastics and are formulated to be primerless on most metal surfaces (see all notes on back). ACRALOCK adhesives, manufactured by Engineered Bonding Solutions, LLC., are packaged in 490mL dual cartridges as well as 5- and 50-gallon containers for application with meter-mix dispensing equipment.

KEY FEATURES

- Easy 10:1 mix ratio
- 3000psi shear strength and up to 120% elongation
- Little to no surface preparation
- Primerless on most metals
- Good chemical resistance
- Excellent fatigue characteristics and shock load resistance
- Stable formulations with shelf-life of 6 months for BLK/GRY and 9 months for OWT

SUBSTRATES THAT CAN BE BONDED

Polyesters, vinyl esters, SMC, epoxies, acrylics, PVC/FPVC/CPVC, polycarbonate, ABS, styrenics, stainless steel, carbon steel, aluminum, coated metals, and many other composites, thermoplastics, and metals.

CHEMICAL RESISTANCE

Cured Adhesive is generally resistant to intermittent exposures of salt solutions, hydrocarbons, acids and bases with a pH range from 3 to 10. See more important notes on chemical resistance on back page.

TEMPERATURE EXPOSURE

Temperature range for this product is from -40 to 180 °F (-40 to 82 °C) with intermittent exposure between -67 to 250°F (-55 to 121 °C).

TYPICAL ADHESIVE WET PROPERTIES

Property	Comp A	Comp B	Mixed
Color	CREAM	BLK	BLACK
Viscosity (cP)	200K-400K	80K-200K	-
Mix ratio weight	9.5	1	-
Mix ratio volume	10 part	1 part	-
Density g/cc	1.025	1.079	-
WPG lb/gal	8.55	9.00	-

CARTRIDGE CODE – WORKING TIME (min)

ADHESIVE →	SA10-05A	SA10-10A	SA10-20A	SA10-20A
ACTIVATOR→	ACT-1B BLK	ACT-1B BLK	ACT-1B BLK	ACT-2B BLK
PRODUCT →	**SA10-05 BLK**	**SA10-10 BLK**	**SA10-20 BLK**	**SA10-25 BLK**
Working time	4-7	8-12	15-22	20-30
Fixture time	8-14	16-24	25-40	35-50

ACT-1B OWT, ACT-2B OWT and ACT-3B OWT are also available (10.6 LB/GAL). See Representative for additional details.
SA10-20A used with ACT-3B OWT is also available as **SA10-30 OWT**

CURED PHYSICAL PROPERTIES	Typical Values psi (MPa)
Tensile strength	2,300- 2,800 (19.3)
Modulus kpsi	60- 90 (620)
Elongation (max. %):	80
Lap Shear Aluminum, ASTM D1002	2,500- 3,000 (20.7)
Lap Shear Stainless, D1002	2,400- 2,900 (19.3)
Lap Shear Cold Rolled Steel, D1002	2,400- 2,900 (18.6)
Lap Shear Pultrusion-FRP psi, D5868	2,500- 3,000 (20)

NOT RECOMMENDED FOR BONDING

Polyolefins: TPO's, polyacetals, and PTFE

SEE IMPORTANT INFORMATION AND NOTES ON PAGE 2

IMPORTANT INFORMATION

ACRALOCK is a trade name of Engineered Bonding Solutions, LLC (hereinafter referred to as "EBS"). All ACRALOCK 1:1 and 10:1 adhesives (Component A) and 1:1 activators (1:1 Component B) are flammable. Cured product is NOT fire resistant and will burn if ignited, releasing toxic fumes. The use of proper PPE (Personal Protective Equipment) is strongly recommended; wear gloves and safety glasses to avoid skin and eye contact, harmful if swallowed and please always refer to both TDS and SDS before using any ACRALOCK adhesive product. Questions relative to handling and applications should be directed to 1-855-411-GLUE or email us at info@acralock.com

Adhesives are supplied in dual component cartridges, 5-gallon pails and 50-gallon drums to facilitate mixing through approved stainless-steel meter mix dispensing equipment. Always use a static mixer with sufficient elements to ensure a homogeneous mix. We do not recommend mixing by hand. Please contact your EBS representative for questions about dispensing equipment manufacturers and approved seal and gasket materials. Automated equipment should be constructed of stainless steel. An exothermic chemical reaction occurs when components A and B are mixed and will generate heat. The amount of heat generated is relative to amount of mass of mixed product and also the working time of the Components A and B (or more relative to reactivity of product). Generally, faster curing products applied in larger beads or mixed left into large quantities can cause rapid boiling of monomers under excessive heat of reaction. These vapors are flammable or harmful if inhaled. Avoid sanding, grinding on cured adhesives (cut or scrape instead), which can produce noxious smoke that could contain harmful constituents, in this case consider a forced air breathing apparatus (PPE). After proper mixing of components, the VOC conten t of cured product will be less than 20 g/L (0.17 lbs./gal).

Use sufficient material to ensure the joint is completely filled when parts are mated and clamped. All adhesive application, part positioning, and fixturing should occur before the working time of the mix has expired. After indicated working time, parts must remain undisturbed until the fixture time is reached. The working time is the approximate time that the adhesive remains fluid and will still wet the surface of the adhered after mixing component A (adhesive) and component B (activator). The fixture time is the approximate time after mixing the two components that will allow the parts to be moved or unclamped. However both working time and fixture times will increase or decrease depending on ambient temperatures and thickness of application. Thin applications in colder conditions can substantially increase fixture time. The reported data presented in the TDS are based on tests conducted under laboratory conditions of 75°F/24°C. For applications in hot or cold ambient conditions, please contact your EBS representative. Clean-up is easiest before the adhesive has cured Citrus terpene or N-methylpyrolidone (NMP) containing, polar solvents, ketones. Avoid contaminating wet adhesive cosmetic surfaces with these cleaners, use masking tape and remove after applying while wet. If the adhesive is already cured, careful remove by scraping with a sharp tool, followed by a solvent wipe may be the most effective method of clean-up.

IMPORTANT NOTES:

Surface Preparation: The need for surface preparation must be determined by the user based on comparative testing of unprepared and prepared substrates to determine if strengths are adequate for application. Clean adhesive failure is not desired for long-term durable performance. In all cases initial shear strength tests must be followed up with simulated or actual durability tests to assure that surface conditions do not lead to degradation of the bond over time under service conditions. Subsequent changes in substrates or bonding conditions will require re-testing.

Most thermoplastics listed above can be bonded with no surface preparation other than a dry wipe or air blow-off. If contamination is visible or suspected, wipe with alcohol prior to bonding. Low surface energy plastics like polyolefins, thermoplastic polyesters and fluorocarbon plastics are generally not bondable.

Metals: EBS recommends surface preparation of most bare metals prior to bonding with Acralock adhesives. Preparation of metals may involve sanding, solvent wipe, solvent immersion or dry wipe. After cleaning, EBS recommends a final wipe of all bondable surfaces using Acralock AP-1, an alcohol based cleaner/primer, to achieve better adhesion, and long-term bond durability. Metal to metal assemblies with thin bond gaps ≤ .015" requires standoff or spacers for uniformity. Metals such as cold rolled steel, carbon steel, ductile iron, etc. require sanding to remove rust, oxidation or scale followed by cleaning with AP-1 cleaner/primer. For bonding metals without primer including galvanized steel please consider using ACRAMAXX M1, G4, M4 or M10 products. Surface preparation, and AP-1 wipe is strongly recommended for best adhesion when using all ACRALOCK adhesives. Powder coated and painted metals do not require AP-1, but should be tested before bonding. **All other metals should be tested prior to bonding.**

Thermoset composites are generally bonded without preparation; however, mold releases and process can produce varied bonding performance and testing should be performed.

Elevated temperature cohesive strength at 180ºF retains a minimum of 500 psi as measured on aluminum. Bonds can be exposed to intermittent temperatures up to 250ºF, provided at the higher temperature range bonding assembly is in a fixture and not under shear load. User must determine suitability for all applications and operating conditions.

Chemical Resistance EBS strongly recommends laboratory and end-use testing representative of the environmental conditions and how the bonded assembly will be used. Bonds are generally resistant to the effects of heat, water and moisture, aqueous chemicals and some intermittent exposure of gasoline, motor oil and diesel fuel. Not recommended for immersion or long-term exposure to all hydrocarbons, concentrated acids or bases, or aggressive organic solvents such as toluene, ketones, and esters.

The shelf life of Components A and B in unopened containers is determined from the date the product is manufactured from EBS facilities. Shelf life is based on steady state storage between 55°F and 80°F (13°C and 27°C). Exposure, intermittent or prolonged, above 80°F/27°C will result in a reduction of the stated shelf life. Shelf life of both components can be extended by air-conditioned or refrigerated storage between 55°F and 65°F (13°C and 18°C). Refer to the Product label for the expiration date.

EBS PRODUCTS ARE INTENDED FOR SKILLED PROFESSIONALS. EBS DISCLAIMS ALL WARRANTIES EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ANY WARRANTY OF NON-INFRINGEMENT, AND ANY WARRANTY REGARDING CONDITION, COLOR, USE, SHELF LIFE, OR HANDLING CHARACTERISTICS. EBS WILL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOST TIME, LOST PROFITS, DAMAGES FROM DELAYED OR FAILED SHIPMENTS, OR THIRD-PARTY CLAIMS). EBS's TOTAL LIABILITY (INCLUDING CONTRACT, TORT, NEGLIGENCE AND STRICT LIABILITY) SHALL NOT EXCEED THE PRICE PAID FOR THE PRODUCTS. PRODUCT RECOMMENDATIONS CONTAINED HEREIN ARE BASED ON INFORMATION WE BELIEVE TO BE RELIABLE. ALL VALUES PRESENTED ABOVE ARE TYPICAL PROPERTIES OBTAINED UNDER CONTROLLED CONDITIONS AT THE EBS, LLC. LABORATORY OR AN OUTSIDE CERTIFIED LABORATORY. THE VALUES OR STATEMENTS ARE INTENDED TO BE USED ONLY AS A GUIDE FOR SELECTION AND FURTHER END-USE EVALUATIONS ARE RECOMMENDED. THE ULTIMATE SUITABILITY FOR ANY INTENDED APPLICATION MUST BE VERIFIED BY THE END USER UNDER THEIR ANTICIPATED TEST CONDITIONS.