



Alumina Adhesive Type AL-CEM/DB1

General Information

ZIRCAR Ceramics' Alumina Adhesive Type AL-CEM/DB1 is a ceramic cement paste offering good bond strength and thermal shock resistant properties for assembling, sealing and cementing porcelain, glass, metal and other materials. Its fine particle size and excellent flow characteristics make AL-CEM/DB1 a good candidate for those applications where an inorganic bond is required between component parts and only small clearances are available.

AL-CEM/DB1 exhibits good coating properties. Thin film sections have shown exceptional flexural and tensile strength for a ceramic adhesive. AL-CEM/DB1 is supplied as a ready-mixed paste and may be applied by brushing, dipping or spraying. AL-CEM/DB1 is suitable for use on production lines with mechanical dispensers or applicators because it will not harden in the equipment during normal operation.



DB1 can be used to bond fine grained dense Al_2O_3 together, as shown above.

Characteristics & Properties

Color	White
Maximum Service Temp., °C (°F)	1649 (3000)
Density, g/cc (pcf)	2.45 (153)
Shrinkage, %	0.5 - 2.5
Compressive Strength @ 7 days, kg/cm2 (psi)	3,600 (253)
Modulus of Rupture, kg/cm2 (psi)	239 (3400)
CTE from 93-538OC (200-1000OF), x10-6/OC	14.87 (7.6)
Dielectric Constant @ 21°C (70°F)	107.2
Dielectric Strength @ 21°C (70°F), volts/mil (volts/mm)	48-55 (2000)
Dissipation factor @ 21°C (70°F)	0.55
Volume Resistivity @ 21°C (70°F), ohm-cm	$10^8 \times 10^{10}$

The data presented herein is intended to help the user to determine the appropriateness of this material for their application. This data is a nominal representation of this product's properties and characteristics and therefore should not be used in preparing specifications.

Availability

ITEM #	DESCRIPTION
D43-01	AL-CEM/DB1, 1 QT

To Order

Standard items: specify quantity, item # and description.

Standard items are made to order and will usually ship in two to three weeks.

Custom preparations, such as 1-gallon cans and 5-gallon pails, are available.

ZIRCAR Ceramics, Inc.

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Technical Data Bulletin

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Application

Surfaces to receive AL-CEM/DB1 should be clean and free of grease or dirt.

Mixing

As AL-CEM/DB1 settles between uses, it must be thoroughly stirred prior to each use.

Setting/Curing

AL-CEM/DB1 cures by air drying at room temperature. Drying time depends on the consistency and thickness of the application. Normally 18-24 hours drying at ambient temperature is sufficient. When the adhesive has minimal exposure to air, or if it is desired to accelerate the cure, low temperature oven drying at 180°F may be used. Avoid steaming while drying. If the adhesive will be exposed to elevated temperatures, contact ZIRCAR Ceramics, Inc. for appropriate drying schedule recommendations.

Clean-Up

All equipment should be cleaned with soap and water before AL-CEM/DB1 cures. If removal is required after cure, a low concentration of sodium hydroxide may dissolve the cement. Consult ZIRCAR Ceramics, Inc. for other recommendations.

Shelf Life

AL-CEM/DB1 has a shelf life of six months when stored in unopened, tightly sealed containers in a dry location at 70°F.



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Revision Date Aug. 7, 2020