



## Alumina Rigidizer/Hardener Type AL-R/H

### General Information

ZIRCAR Ceramics' Alumina Rigidizer/Hardener Type AL-R/H is single-part water-based suspension of colloidal alumina hydrate particles. AL-R/H is used as a binder, rigidizer or surface hardening agent in applications with temperatures as high as 1700°C (3092°F). It is nonflammable and is not affected by freezing.

As a hardening agent, AL-R/H is easily applied by brushing, rolling, dipping, sponging or spraying. Coverage depends upon the surface area of the material being treated and the level of hardness desired. One gallon typically covers 100-150 ft<sup>2</sup> of ceramic fiber board if applied to an absorption depth of 2-3mm (0.08-0.13in.). Stiffening and hardening of treated surfaces occurs upon drying. Curing of treated parts to 600°C (1110°F) is sufficient to remove chemical water from the high-surface-area hydrated alumina.



### Characteristics & Properties

Color	Tinted Green
Typical Solids Composition (Calcined Basis), wt.%	
Al <sub>2</sub> O <sub>3</sub>	98.7
SiO <sub>2</sub>	0.55
Na <sub>2</sub> O	0.52
TiO <sub>2</sub>	0.064
ZrO <sub>2</sub>	0.051
CaO	0.03
K <sub>2</sub> O	0.025
MgO	0.01
CuO	0.001
Solid Content, %	17
Specific Gravity, g/cc	1.18
Maximum Use Temperature*, °C (°F)	1700 (3092)
Melting Point, °C (°F)	>1870 (3398)
Wet Weight Per Gallon, kg (lbs)	4.47 (9.83)

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. \* Maximum use temperature is dependent on variables such as stresses, both thermal and mechanical, and the chemical environment that the material experiences.

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Technical Data Bulletin  
Alumina Rigidizer/Hardener Type AL-R/H  
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## Suggested Applications

Coating surfaces of rigid ZIRCAR Ceramics' fibrous ceramic materials for improved hardness and resistance to abrasion & chemical attack.

Forming of shapes (rigid tubes, boats, setters, supports, process fixtures etc.) by rigidization of flexible ZIRCAR Ceramics' fibrous ceramic materials.

Bonding agent in manufacture of high-alumina refractories, composites and laminates.

## Availability of Standard Alumina Rigidizer/Hardener

ITEM #	DESCRIPTION
A17401	AL-R/H, 1 QT
A17402	AL-R/H, 1 GAL
A17403	AL-R/H, 5 GAL

## To Order

**Standard items:** order online or specify quantity, item # and description.

Standard items are available for immediate shipment from stock.

**Custom preparations** such as 55-gallon drums or 275-gallon tote packaging, as well as custom dilution ratios, can be considered.



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