

Aremco's refractory coatings offer the ultimate protection of high temperature components used in the processing of ceramics, glass, metals, and plastics.

FEATURES

- Ultra Hi-Temp Resistance
- Non-Wetted by Molten Metals, Salts, Glass & Plastics
- High Lubricity for Easy Part Release
- Minimizes Cast Surface Defects
- Increases Mold & Die Life
- For Use in Oxidizing, Reducing & Vacuum Atmospheres

APPLICATIONS

- Composite Forming
- Glass Forming
- Metal Casting
- Injection Molding
- Ceramic Hot-Pressing
- Metal Powder Sintering
- Welding
- Brazing

PRODUCT HIGHLIGHTS

Graphi-Coat™ 623

This patented coating is a two-part, silica-bonded, titanium diboride filled, oxidation resistant coating for protecting graphite crucibles, electrodes, and heat-treating fixtures to 2000 °F (1093 °C).

Pyro-Paint™ 634-AL

This high purity 99+% alumina, two-part coating seals alumina fiberboards and shapes to fill porosity and resist molten metals to 3200 °F (1760 °C). Increases heat reflectivity to improve furnace efficiency by reducing ramp up times.

Pyro-Paint™ 634-AL-HC

This high purity 99+% alumina, single-part coating bonds well to carbon and stainless steel, providing excellent oxidation protection. Also suitable for producing a hard-coat on alumina fiberboards. For temperatures to 3200 °F (1760 °C).

Pyro-Paint™ 634-ALP

This phosphate-bonded, single-part alumina coating bonds exceptionally well to dense refractories, providing high abrasion and corrosion resistance for operating temperatures to 3200 °F (1760 °C).

Pyro-Paint™ 634-AS and 634-AS1

These alumina-silica, single-part coatings increase the durability of refractory fiberboards by sealing the substrate to minimize dusting and resist wetting by non-ferrous metals to 2300 °F (1260 °C).

Pyro-Paint™ 634-BN and 634-BNSC

These lubricious, boron nitride, single-part coatings are used to seal refractory fiberboards and metals from wetting by non-ferrous metals, salts, glasses and plastics. Select 634-BN for hard-coat and 634-BN(SC) for a more consumable soft-coat.

Pyro-Paint™ 634-GR

This single-part graphite coating improves parting of aluminum permanent molds, non-sticking in glass forming, and lubrication and stop-off in metalworking and wire drawing. Provides superior release, surface finish and mold protection.

Pyro-Paint™ 634-SIC

This single-part, silicon carbide coating improves the oxidation resistance of graphite crucibles, electrodes, and heat-treating fixtures to 2550 °F (1400 °C).

Pyro-Paint™ 634-SIC-CS

This single-part, silicon carbide coating resists oxidation of metals at temperatures to 2300 °F (1280 °C).

Pyro-Paint™ 634-YO

This single-part, yttrium oxide coating protects graphite, ceramic and metals, exposed to reactive metals such as titanium, uranium and their alloys under inert or vacuum atmospheres to 2732 °F (1500 °C).

Pyro-Paint™ 634-ZO

This single-part, zirconium oxide coating produces a hard, oxidation resistant coating on carbon and stainless steel and a range of refractory metals including molybdenum, platinum, rhodium, and titanium to 3270 °F (1800 °C). Good for sealing porous refractories and protecting resistance heating elements from oxidation and residue buildup that causes arcing and reduced element life.



HIGH TEMPERATURE REFRACTORY COATINGS PROPERTIES

Part Number	623	634-AL	634-AL-HC	634-ALP	634-AS	634-AS-1	634-BN	634-BNSC	634-GR	634-SIC	634-SIC-CS	634-YO	634-ZO
Principal Application	Inhibits Graphite Oxidation	Soft-Coat Sealer for Fiberboard	Hard-Coat for Metals & Fiberboard	Sealer for Dense Refractory	Sealer for Refractory Fiberboard		Resists Wetting of Non-Ferrous Alloys on Refractories		Resists Wetting of Glass, Metal	Inhibits Graphite Oxidation	Resists Metal Oxidation	Resists Reactive Metals	Resist Metal Oxidation
Major Constituent	Titanium DiBoride	Aluminum Oxide			Alumina-Silica		Boron Nitride		Graphite	Silicon Carbide		Yttrium Oxide	Zirconium Oxide
Color	Gray	White	White	White	Off-White	White	White	White	Black	Gray	Light Gray	Off-White	Off-White
Temperature Limit, °F (°C)	2000 (1093)	3200 (1760)	3200 (1760)	3200 (1760)	2300 (1260)	2300 (1260)	1560 (850) ¹	1560 (850) ¹	2200 (1200)	2550 (1400)	2300 (1260)	2732 (1500)	3270 (1800)
No. Components	2	2	1	1	1	1	1	1	1	1	1	1	1
Mix Ratio²	60:40	75:25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Viscosity, cP	200–400	100–200	200–500	5,000–7,000	500–800	10,000–20,000	500–1,500	10–100	100–250	750–2,000	150–500	200–400	1,000–2,000
Specific Gravity, g/cc	2.15	2.46	2.42	2.38	1.55	1.60	1.15	1.20	1.24	2.00	1.85	1.55	2.02
Solids by Weight, %	78.7	81.3	81.5	76.0	64.3	64.9	19.8	30.0	47.5	68.2	72.0	45.0	59.2
Solids by Volume, %	52.7	56.1	56.5	53.7	41.1	40.7	18.0	13.3	31.6	42.0	47.4	14.0	29.6
WFT, mils (microns)⁶	1.9 (48.2)	1.8 (45.3)	1.8 (45.3)	1.9 (47.3)	2.4 (61.7)	2.5 (62.4)	5.6 (141.5)	7.5 (190.7)	3.2 (80.5)	2.4 (60.5)	2.1 (53.5)	7.1 (180.9)	3.4 (86.0)
DFT, mils (microns)⁷	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)
Theoretical Dry Film Coverage @ 1 mil, ft²/gal (m²/liter)	845 (20.7)	899 (22.1)	899 (22.1)	861 (21.1)	660 (16.2)	653 (16.0)	288 (7.1)	214 (5.3)	506 (12.4)	674 (16.5)	761 (18.7)	225 (5.5)	474 (11.6)
Recommended Curing													
Min Air Set, hrs	1	2	1	1	2	2	2	2	2	1	1	0.5	2
Hours Cure °F/hrs³	1400/0.25	200/2	200/2, 800/1	200/2, 800/1	200/2	200/2	200/2	200/2	200/2	200/2, 800/1	200/2, 500/1	200/1	200/2
Application Temperature, °F	50–90	50–90	50–90	50–90	50–90	50–90	50–90	50–90	50–90	50–90	50–90	50–90	50–90
Thinner⁴	623-T	634-AL-T	634-AL-HC-T	634-ALP-T	634-AS-T	634-AS-T	634-BN-T	634-BNSC-T	634-GR-T	634-SIC-T	634-SIC-CS-T	H ₂ O	634-ZO-T
Coating pH	8–9.5	4–5	3–4	2–3	8–9.5	8–9.5	11–12	4–5	8–9	2–3	9-10	7–8	11–12
Flash Point, °F	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Weight/Gallon, lbs⁵	12.5	12.0	20.0	16.5	12.0	12.5	9.5	10.0	10.0	16.5	15.0	12.0	14.5
Shelf Life, months	6	6	6	6	6	6	6	6	6	6	6	6	6
Storage Temperature, °F	40–90	40–90	40–90	40–90	40–90	40–90	40–90	40–90	40–90	40–90	40–90	40–90	40–90

Reference Notes

¹ Temperature limit applies to oxidizing atmospheres only. Can be used in vacuum/ inert atmospheres to 2000 °C.

² Mix ratio is Powder : Liquid. Ratios may be altered as required to adjust viscosity.

³ A short cure is recommended, however, most of these products can be air set then ramped up to operating temperature immediately.

⁴ Distilled water may also be used to thin all products. Use 1–2% distilled water by weight.

⁵ For two-part systems, this only refers to the weight per gallon for the powder portion of the mixture.

⁶ Estimated Wet Film Thickness (WFT).

⁷ Recommended Dry Film Thickness (DFT).

Surface Preparation Notes

All surfaces should be free of oil, grease, dirt, corrosives, oxides, paints or other foreign matter. No further preparation is required when coating ceramics, refractories or graphites. Smooth metal surfaces should be abrasive blasted to an SSPC-SP10 near white blast. Remove abrasive residue using air pressure; do not clean with organic solvents. Quartz should be etched or sandblasted whenever possible.

Aremco's Corr-Prep™ CPR2000 is recommended as an alternative when sandblasting is not possible. This is a specially formulated, water-based, zinc phosphate metal etching solution that is non-toxic, non-flammable, non-caustic, and non-corrosive. It etches metal to provide surface profile for superior coating adhesion to aluminum, galvanized metal, steel, and stainless steel. It also helps to improve long-term corrosion protection. Application is simple — just brush or spray liquid on the substrate, allow to sit for 20–30 minutes, then rinse off and dry substrate thoroughly prior to coating.

Abbreviations

N/A Not Applicable

Refer to Price List for complete order information.

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The user assumes all risk of use or handling whether or not in accordance with directions or suggestions, or used singly or in combination with other products.