

KESEM Technology LLC



CEASEFIRE™ for High Performance white 2 part epoxy
EPOXY FIRE PROTECTIVE COATING

Patent Pending

Epoxy Flame Retardant and Intumescent Coating

CeaseFire High Performance white two part fire retardant epoxy is a intumescent coating based on our proprietary non-halogenated phosphate technology. All of our phosphates are manufactured in house for our exclusive use. When exposed to heat and/or fire, CeaseFire High Performance forms a continuous char foam that protects products from both heat and flame. The active ingredients in CeaseFire High Performance products are not water soluble and will not leach out over time.

CeaseFire High Performance white has DNV Type Approval for use as a coating on ships and mobile off shore units throughout all accommodations. DNV Certificate No. F-16685.

CeaseFire High Performance is recommended for use as a base resin for specialty coatings. The viscosity is easily reduced by the addition of xylene. Pigments, anti-settling agents and other flame retardants may also be incorporated. To attain a 80° sheen, CeaseFire High Performance needs to be applied at 5 to 10 wet mils in a dry (low humidity) 37.7°C (100°F) heated area to ensure a tack free finish.

Burning a surface with CeaseFire High Performance on it will produce a ¼" to 2" char foam depending on the thickness of the CeaseFire material applied and the char will start rising in 10 - 40 seconds. Once this char layer forms, smoke generation is almost entirely eliminated, burning ceases, and coated surfaces are thermally insulated.

Our in House Lab tests were run on ¼" steel plates. Our test was done with 80 dry mils applied to the 1/4" steel plate and a 1500°F flame applied to ceasefire side. It took 58 minutes for the back side of the plate to reach 500°F. More time would be seen if this test is done on ½" or larger steel plate or if the thickness of the material is increased.

Due to the fluid nature of the CeaseFire High Performance white material, it is hard to apply a single coat thick than 15-20 wet mils.

MEK is a good clean up solvent. Do not use MEK or acetone for thinning this material.

Specifications

%Solids	100%
Mix Ratio (A:B)	100:32
Viscosity Part A@ 25°C	16,000 cps
Viscosity Part B@ 25°C	250 cps
Mixed Viscosity @ 25°C	1200 cps
Mixed Viscosity + 10% xylene @ 25°C	850 cps
Working life @ 25°C (77° F)	5 hours
Working life @ 37.7°C (100°F)	1.5 hours
Tack free set time @ 25°C	12 hours
Tack free set time @ 37.7°C	4 hours
Working life @ 25°C	2 1/2 hours
Full Cure @ 25°C	48 hours
Dry weight / gal of wet material	9 lbs

Typical Properties:

Coating thickness on most substrates for Class A flame Spreads	5 dry mil
Flammability Rating (UL94)	V-0
Glass Transition Temp	80°C
Hardness Shore D	72
Peel Strength	6.5 lbs/inch
Elongation to break	12%
Char height	over 1.0 inches

Char initiation temp	300°F
Thermal Conductivity of Char	$\leq 1 \times 10^{-4} \frac{\text{cal}}{\text{sec cm}^2 \text{ } ^\circ\text{C/cm}}$
Air convection through Char	$\leq .001 \text{ cc DP (mmHg)} \frac{\text{cm}^2}{\text{sec}}$
MSC.41(64)	Pass for marine coating
ASTM –E119	52 min @ 35 dry mils 58 min @ 60 dry mils

Testing: For an application that needs a specific flame spread or other fire retardant certificate other than what our in house or outside lab tests show, our staff is available to assist and guide the client in obtaining those certificates.