

BCA FR-001 - Phosphonate Ester Flame Retardant

DESCRIPTION:

BCA FR-001 is high phosphorous containing oligomeric phosphonate flame retardant that can be used in a variety of applications requiring the highest standard of flame resistance. BCA FR-001 can be used at loading levels below those of other organophosphorous containing flame retardants. BCA FR-001 can be used to replace or in combination with other flame retardants such as brominated epoxy resins. It is useful in thermoset and thermoplastic resins based formulations. Properly formulated systems containing BCA FR-001 will pass FAR25.853 a & b (OSU 65/65/200) flame and smoke specifications as well as UL 94-0 flame specification.

ADVANTAGES:

- Low Volatility Content
- Good Flame Retardant Efficiency
- Excellent Thermal Stability
- High Phosphorous Content

APPLICATIONS:

- Aircraft Interior Parts
- Electrical Potting and Encapsulation
- Printed Circuit Boards

STORAGE LIFE:

This product has a shelf life of two years from the date of manufacture when stored at ambient temperature in the original unopened container.

HANDLING PRECAUTIONS:

Please refer to the BCA FR-001 Safety Data Sheet.

TYPICAL PROPERTIES	
Appearance	Clear to Off-White Liquid
Viscosity (cPs @ 40°C)	15000
Active Concentration (%)	100
Specific Gravity (25°C)	1.3
Flash Point (Closed Cup °C)	146
Phosphorous Content (%)	21.5
Acid Number (mg KOH/g)	< 2

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Typical Formulations (by wt.):

Liquid Epoxy Resin (EEW: 190)	100	100
BCA Dicy 10 ¹	8	0
BCA TDU ²	2	0
BCA EMI 24 ¹	0	6
BCA FR-001	18.3	20
Phosphorous Content	3%	3.3%
UL 94 V-0 (3mm)	Passed	Passed
Total burning time (sec.) (10 flame applications)	25	23
Reactivity by DSC³		
Onset Temp., °C	134	137
Peak Temp., °C	165	147
Heat of reaction, -J/gm	219	101
Glass Transition Temp., °C	127 ⁴	137 ⁵

1. Curing Agent
2. Accelerator
3. 10°C/min, scan rate
4. By DMA, 60 mins. at 140°C + 30 mins. at 150°C
5. By DMA, 90 mins. at 150°C

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