



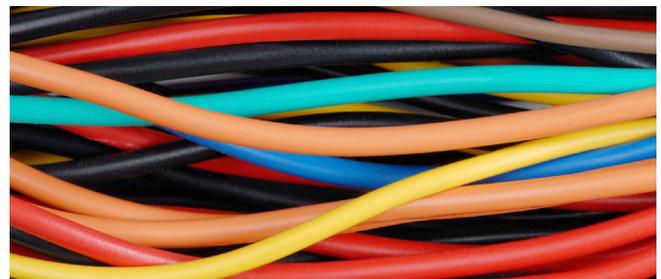
IMERYS MICAS > AN EXTENDER FOR HALOGEN FREE FLAME RETARDANT POLYOLEFINS

IMERYS MICA GRADES FOR PLASTICS provide cost-effective reinforcement in electrical appliances, and other applications where heat and fire risk are a concern.

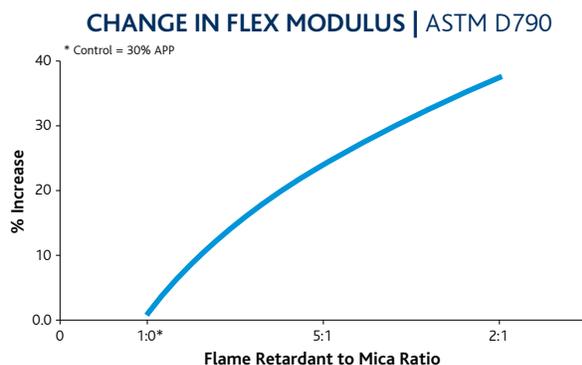
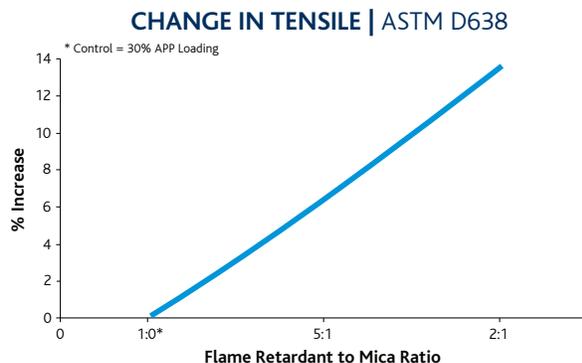
CHAR PROMOTER AND FLAME RETARDANT EXTENDER

Plastics used in electrical applications have to reduce fire risk in the event of an exposure to external sources of ignition or electrical defect. Imerys Mica, while known for its reinforcing properties for increased heat deflection temperatures, flex modulus and reduced shrinkage and warping, has also demonstrated that it can be used as a char promoter and flame retardant extender.

Loading levels of 30-35% Ammonium Polyphosphate (APP), a halogen free flame retardant (FR) system for polyolefins, is commonly required to meet UL94 requirements such as V-0 ratings or better. In addition to adding significant material costs to polyolefin compounds, APP diminishes physical properties such as tensile strength. However, replacing up to one third of APP flame retardants with IMERYS Mica provides reinforcement for boosting tensile properties and material integrity.



Partially replacing expensive APP with Mica maintains UL94 V-0 performance while improving char promotion and afterglow in electrical applications such as wire jacking and household electrical appliances.



Typical examples of electrical applications for Imerys Mica

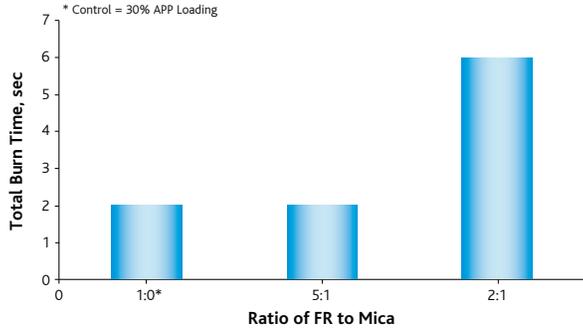
- > Electrical household appliances
- > Electrical conduit
- > Electrical tools
- > Wire jacking
- > Plug connectors
- > Electrical raceway

It has been observed that as particle size decreases, surface area increases, providing improved flame retardant properties.

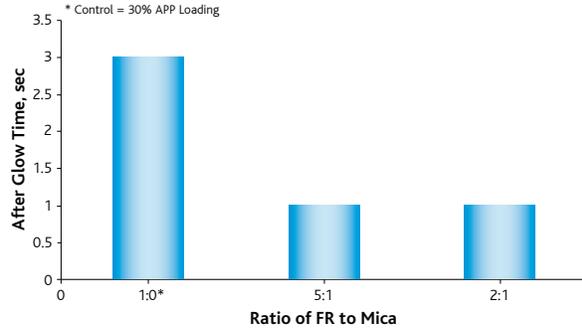
This combination of properties allows for maintained performance in plastics used in electrical applications.

UL94 V-0 performance is maintained for ratios of 2:1 APP to mica at 3.2 mm and 5:1 APP to mica at 1.6 mm. Additionally char promotion and afterglow are improved.

TOTAL BURN TIME | UL 94 at 3.2mm IN HDPE, V-0 RATING



AFTER GLOW | UL 94 at 3.2mm IN HDPE, V-0 RATING



RECOMMENDED GRADES | IMERYS MICA FOR HALOGEN FREE FLAME RETARDANT POLYOLEFINS

Fine to Medium Grades	Type	Appearance	Particle Size (µm) D50 Cilas	Particle Size (µm) D50 Sedigraph	Aspect Ratio Jenning's Factor	Process Method
C-4000	Muscovite	Off-White	17	5	50:1	Micronized
C-3000	Muscovite	Off-White	25	6	85:1	Micronized
WG 325	Muscovite	Off-White	35	8	85:1	Wet Ground
4K	Muscovite	Off-White	45	13	50:1	Dry Ground
1K	Muscovite	Off-White	55	20	40:1	Dry Ground
100K	Muscovite	Off-White	60	20	50:1	Dry Ground
325 HK	Phlogopite	Bronze	25	8	80:1	Micronized
325 S	Phlogopite	Bronze	35	8	80:1	Micronized
80 SF	Phlogopite	Bronze	45	12	70:1	Dry Ground
200 S	Phlogopite	Bronze	55	16	60:1	Dry Ground
200 HK	Phlogopite	Bronze	60	17	55:1	Dry Ground
150 NY	Phlogopite	Bronze	90	24	65:1	Dry Ground
150 S	Phlogopite	Bronze	150	34	90:1	Dry Ground
Flake Grades						
L-135	Muscovite	Off-White	165	38	90:1	Dry Ground
60 S	Phlogopite	Bronze	250	-	100:1+	Dry Ground
200 HK	Phlogopite	Bronze	60	17	55:1	Dry Ground
Surface Treated Grades						
325 PO	Phlogopite	Bronze	35	8	80:1	Micronized
200 PO	Phlogopite	Bronze	55	16	60:1	Dry Ground
200 PE	Phlogopite	Bronze	55	16	60:1	Dry Ground

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IMERYS

1732 North First Street, Suite 450, San Jose, CA 93109 USA
 t: +1 408-643-0200 | e: perfminsNA@imerys.com

www.imerys-perfmins.com/usa