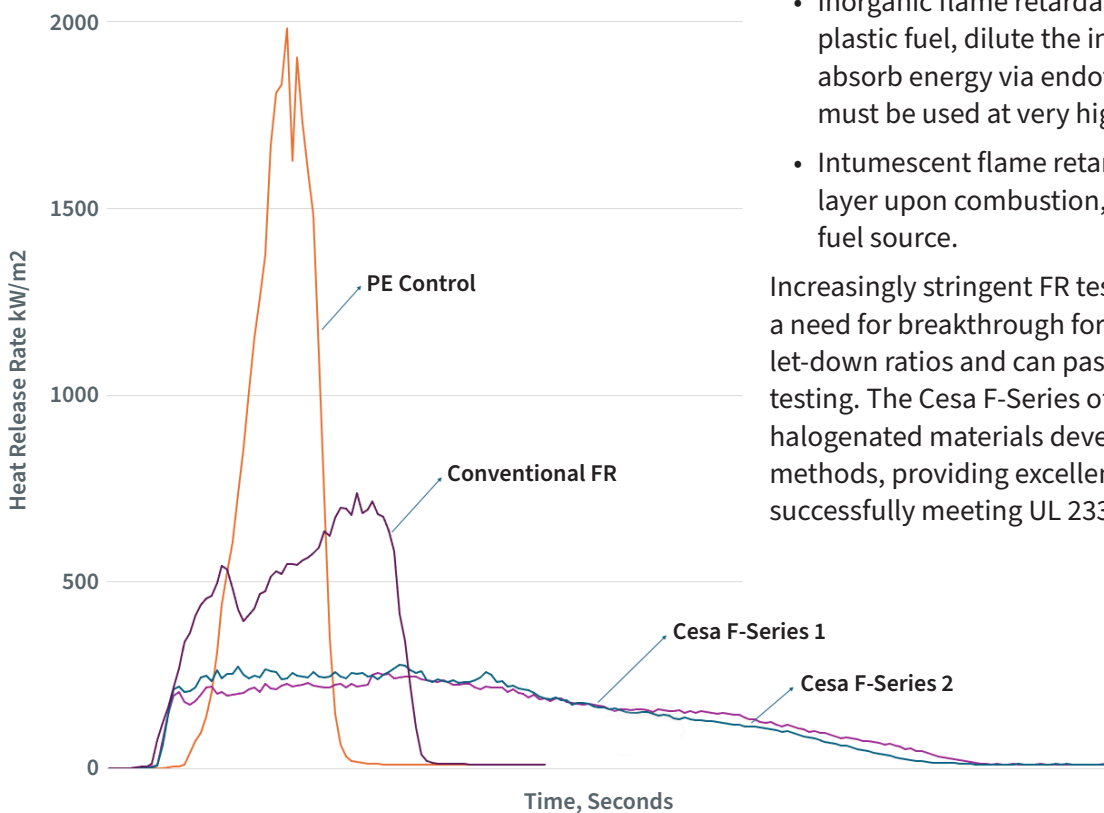


➤ PRODUCT SELECTION GUIDE

Cesa™ Flame Retardant Additives

Adding flame retardancy

Because most polymers are hydrocarbon-based, they are combustible. Cesa™ Flame Retardant Additives add flame retardancy to polymers at varying levels to meet the performance demands of the final product.



Cesa FR additives are available in a variety of methods to create flame retardancy.

- Halogenated flame retardants intervene in the combustion reactions during the gas phase and form less reactive by-products, delaying or interrupting combustion. Halogenated flame retardants generally have the lowest usage rate.
- Inorganic flame retardants dilute the available plastic fuel, dilute the incendiary gases, and absorb energy via endothermic reactions, but must be used at very high dosages.
- Intumescent flame retardants form a protective layer upon combustion, eliminating the polymer fuel source.

Increasingly stringent FR test methods are creating a need for breakthrough formulations that optimize let-down ratios and can pass more rigorous testing. The Cesa F-Series of FR additives are non-halogenated materials developed to pass strict test methods, providing excellent UL 94 compliance and successfully meeting UL 2335 and FM4998 standards.



CESA FLAME RETARDANT ADDITIVES – STANDARD OFFERINGS

| POLYMER | PRODUCT NAME | PROPERTY PERFORMANCE | TYPE | DOSAGE / LDR | MATERIAL CODE |
|--------------|---------------------------|----------------------------------|-------------|--------------|---------------|
| ABS | FRABS92991 | UL 94 | Halogen | 35% | CC10292991WE |
| ABS | FRABS52399 | UL 94 | Halogen | 5–14% | CC10252399WE |
| HDPE | Cesa Flam MB 5101AH | UL 94 | Halogen | 7–16% | PEAN698479 |
| Nylon | Cesa Flam MB 5728H | UL 94 | Halogen | 8–14% | ABA0698450 |
| Nylon | Cesa Flam MB 5731NH | UL 94 | Non-halogen | 8–20% | ABAN698410 |
| PC | Cesa Flam NCA0820018NH | UL 94 | Non-halogen | 2–4% | NCA0820018 |
| PC | NCAN-Z0N-FN FLMRET 698419 | UL 94 | Non-halogen | 3–8% | NCAN698419 |
| PE | FRPE94802 | ASTM E84 | Non-halogen | 100% | CC103094802F |
| PE | FRPE41011 | UL 94 | Halogen | 20–30% | CC1034101160 |
| PET | Cesa Flam MB 5525NH | UL 1441, UL 94 | Non-halogen | 6–8% | NEAN698534 |
| PET | FRPET65462 | UL 94 | Non-halogen | 5–12% | CC103265462F |
| PET/ PBT | Cesa Flam MB 5532NH | NFPA 701 | Non-halogen | 4–6% | NBAN698451 |
| PP | Cesa Flam MB 5201H | UL 94 | Halogen | 6–30% | PPAN698410 |
| PP | Cesa Flam MB CT-1629NH | Cal TB 133, UL 94 Film, NFPA 701 | Non-halogen | 6–8% | PPAN698428 |
| PP | FRPP365370 | UL 94 | Non-halogen | 10–20% | CC103653702F |
| PP Copolymer | FRPP37654 | UL 94 5VA | Halogen | 100% | CC10337654WE |
| PP Copolymer | FRPP53484 | UL 94 | Halogen | 10% | CC1035348460 |
| PS | FRPS62722 | ASTM E84 | Halogen | 2–4% | CC10262722WE |
| PS/HIPS | Cesa Flam SLA0820014H | UL 94 | Halogen | 4–8% | SLA0820014H |
| TPU | Cesa Flam 98461NH | UL 94 | Non-halogen | 6–14% | RUA0698461 |

F-SERIES FLAME RETARDANT ADDITIVES

| | | | | | |
|---------|----------|------------------|-------------|--------|------------|
| HDPE/PE | F-Series | UL 94 | Non-halogen | 10–25% | PEA0820024 |
| PE | F-Series | UL 2335, FM 4998 | Non-halogen | 10–25% | PEA0820069 |

Cesa Flame Retardant Additives can be used in combination with other colorants or additives, and formulations can be customized for most applications. Some formulations are specific for use in U.S. and Canada. Contact your sales representative for more information, or to learn more about custom solutions for your application.

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