

» 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.

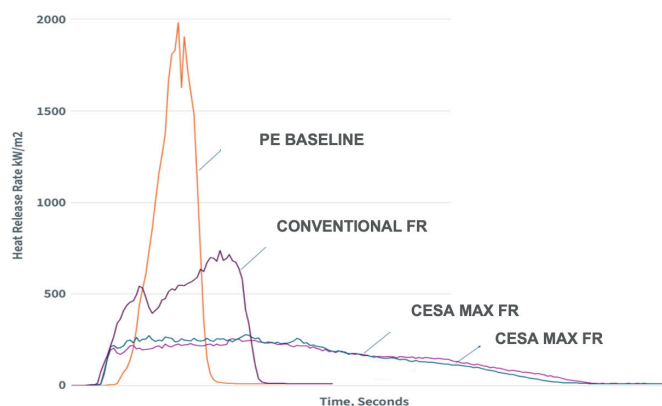
- Halogenated flame retardants intervene in the combustion reactions during the gas phase and form less reactive by-products, delaying or interrupting combustion. Halogenated flame retardants generally have the lowest usage rate.
- Inorganic flame retardants dilute the available plastic fuel, dilute 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.

- Non-halogenated flame retardants, or halogen-free flame retardants (HFFR), lower flammability and slow fire spread in polymer materials. They can reduce environmental risks while enhancing fire safety.

Increasingly stringent FR test methods are creating a need for breakthrough formulations that optimize let-down ratios and can pass more rigorous testing. Cesa MAX FR additives are non-halogenated materials developed to pass strict test methods and provide exceptional UL 94 compliance. They consolidate the highest loading levels of fire safety ingredients to meet diverse compliance standards across multiple applications. See chart below for Cesa MAX recommended ranges.

UL94 RECOMMENDATION PACKAGE FOR HDPE

Cesa™ MAX FRPE	Classification							
	5VA		5VB		V0		V1	
Thickness (mm)	3.0	1.0	3.0	1.0	3.0	1.5	3.0	1.5
Avient Recommended Range	26– 30%	N/A	24– 26%	30– 35%	30– 35%	33– 35%	23– 25%	30– 32%





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

CESA™ MAX FLAME RETARDANT ADDITIVES

HDPE	Cesa MAX	UL 94	Non-halogen	20–30%	CC10277471
PE/PP	Cesa MAX	UL 94	Non-halogen	5–35%	CC10407512WE

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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