ARICHEM LLC
We have the right Chemistry

KSS-FR®

Non-Halogen Flame Retardant For Polycarbonate and For Combination FR Systems For PC and PC/ABS

FORMULATION

The formulations shown in this guide are representative of what can be accomplished with Arichem KSS-FR Flame Retardant. Please note that to provide thinner section UL 94 V0 results various adjuncts are required. Some of the formulations may be covered by patents and it is up to the user to confirm there is no patent infringement. It must also be pointed out that various base polycarbonate resins react differently to the flame retardant and as such all formulations must be confirmed by the user.

Transparent Polycarbonate Formulations

UL 94 V0 3.2 mm using 3 MFI Polycarbonate

Formulation Component	Loading %
Polycarbonate (3 MFI)	99.80
Arichem KSS-FR	0.20

UL 94 V0 2.6 mm using 10 MFI Polycarbonate

Formulation Component	Loading %
Polycarbonate (10 MFI)	99.35
Arichem KSS-FR	0.40
Phenyl Methyl Siloxane*	0.25

UL 94 V0 1.6 mm using 20 MFI Polycarbonate

Formulation Component	Loading %
Polycarbonate (20 MFI)	95.40
Arichem KSS-FR	0.60
Phenyl Methyl Siloxane*	4.00

* Various phenyl methyl siloxanes are referenced in patents and literature. Various trade name products are General Electric Bayer PD 5, General Electric Silicones SR476, Dow Corning 556 and others. The user is cautioned to review the patent limitations on their use in polycarbonates.

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Translucent Polycarbonate UL 94 V0 1.6 mm Formulation using 20 MFI PC

Formulation Component	Loading %
Polycarbonate (20 MFI)	97.10
Arichem KSS-FR	0.60
Phenyl Methyl Siloxane*	2.00
PTFE	0.30

Opaque Polycarbonate UL 94 V0 1.6 mm Formulation using 10% GF 20 MFI PC

Formulation Component	Loading %
Polycarbonate (20 MFI)	87.10
Fibrous glass	10.00
Arichem KSS-FR	0.60
Phenyl Methyl Siloxane*	2.00
PTFE	0.30

KSS-FR is the potassium salt of a complex of diphenyl sulfone sulfonate and diphenyl sulfone disulfonate. This product has been used to flame retard polycarbonate for over 25 years and original patents covering its use in polycarbonate have expired.

KSS-FR does not affect the transparency of polycarbonate formulations as it has the same refractive index as polycarbonate.

KSS-FR is more economical to use than potassium perfluorobutylsulfonate.

KSS-FR is a white powder and provides flame retardant performance at fractional loading levels or at less than 0.5% by weight in the polycarbonate formulation. Therefore, it may be helpful to produce and utilize KSS-FR in concentrate form for more effective dispersion into the polycarbonate matrix. Several compounders are producing a 10% concentrate. Please contact us for more information.

More information, samples, and specifications for **Arichem KSS-FR** are available upon request.

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