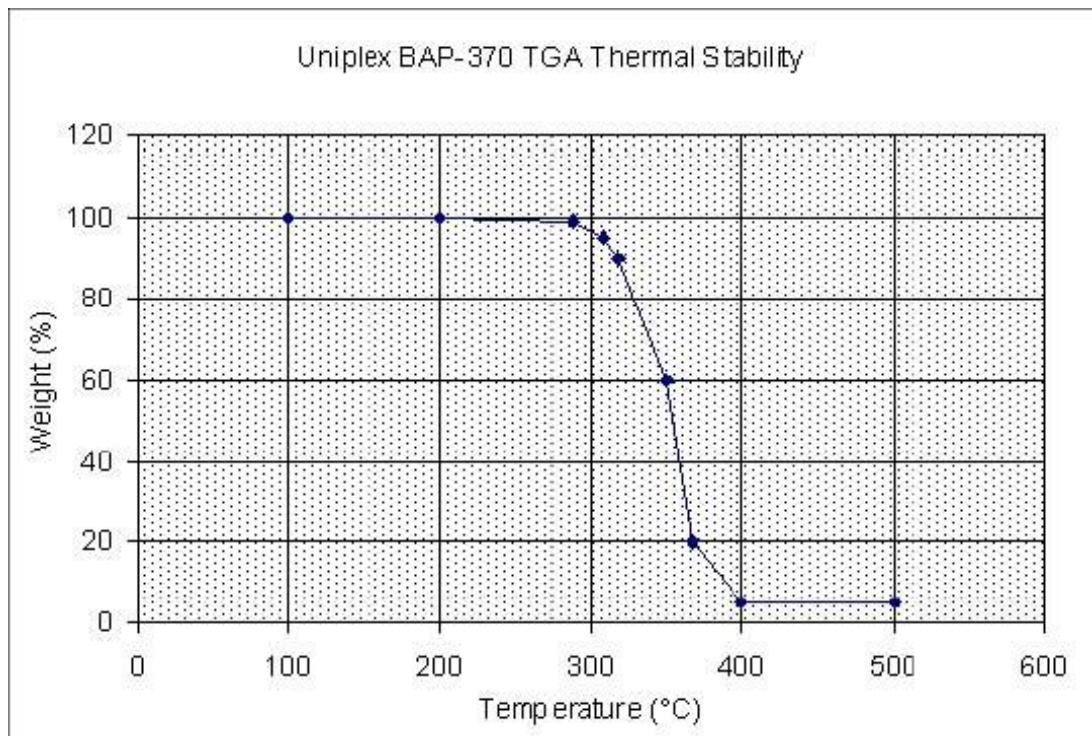


UNIPLEX BAP-370
FLAME RETARDANT
Tris (tribromoneopentyl) phosphate
CAS: 19186-97-1

Uniplex BAP-370 is used primarily in Polypropylene molding applications for UL94 V-2 ratings. This rating can be achieved by using 4-6 phr Uniplex BAP-370 with 2-3 phr Antimony Trioxide as a synergist.

Uniplex BAP-370 is non-reactive with the typical hindered amine light stabilizers (HALS) used polypropylene fiber applications. In fiber applications, 3-4 phr Uniplex BAP-370 with 1-2 phr Sb_2O_3 will pass a California 701 burn test.

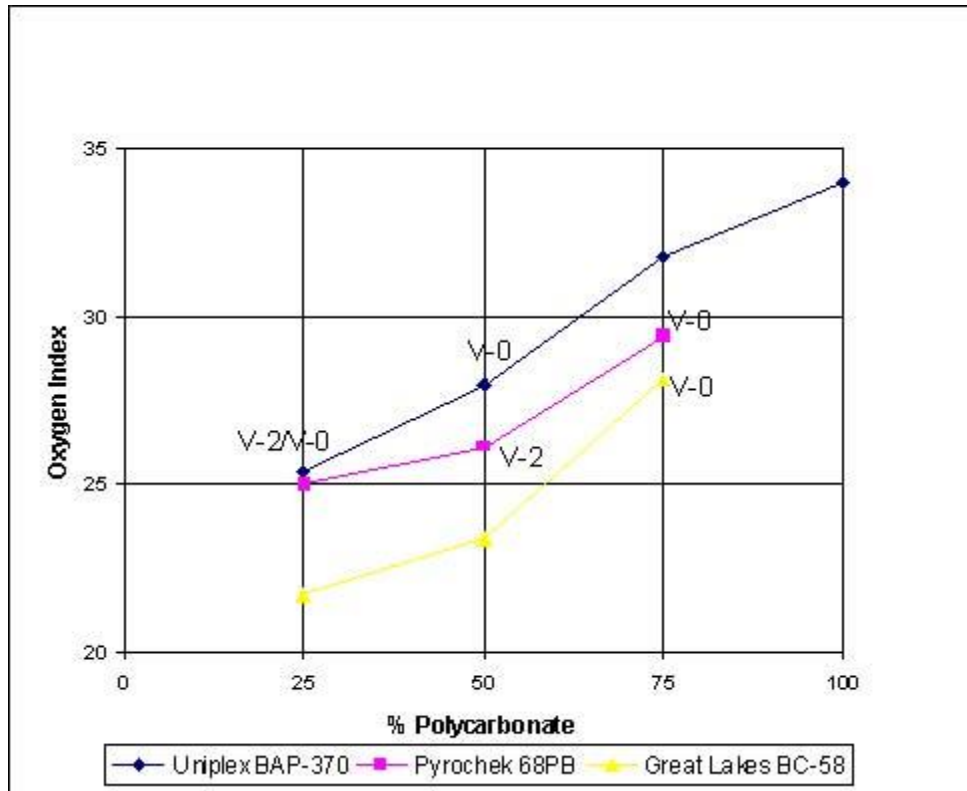


APPLICATIONS IN POLYESTER

COMPARISON OF FLAME RETARDANTS FR CONCENTRATION FOR UL-94 V-0 (1.6mm) 2/1 POLYCARBONATE/PET ALLOY

Flame Retardant	% Bromine	% Phosphorus	% Minimum
Great Lakes BC-52	51.3	---	12
Triphenyl Phosphate	---	9.5	13
Uniplex BAP-370	70	3	6

FLAME RETARDANCY COMPARISON PC/PBT ALLOY AT 12% FR



PHOSPHORUS IN MINERAL-FILLED PBT

PBT, Mineral Filled	84	84
Great Lakes BC-52	16	- - -
Uniplex BAP-370	- - -	16
Oxygen Index	29.1	35.0
UL-94 Rating (1/16")	Burns	V-0

FLAME RETARDANCY IN GLASS-FILLED PET

PET, 30% Glass	80	80
Uniplex BAP-370	15	20
Sodium Antimonate Teflon 6C	5	- - -
Teflon 6C	0.5	0.5
Oxygen Index	29.4	36.0
UL-94 Rating (1/16")	V-2	V-0

APPLICATIONS IN POLYVINYL CHLORIDE (PVC)

SEMI-RIGID PVC FORMULATION

Component	Parts
PVC Resin	100
Lead Stabilizer	3
Epoxidized Soya Oil	3
Alumina Trihydrate	5
Antimony Trioxide	3
Diisodecyl Phthalate	17
Diocetyl Azelate	17
Uniplex BAP-370	6

PROPERTIES

Oxygen Index	32.0
Shore A Hardness	19
Shore D Hardness	46
Tensile Strength, psi Unaged	2950
Aged (7 days/100° C)	3000
% Retention	102
Elongation, % Unaged	230
Aged (7 days/100° C)	210
% Retention	91
Low Temperature Flex, ° C	-16

HIGH TEMPERATURE WIRE AND CABLE APPLICATION FORMULATION

Component	phr
PVC Resin (Geon 30 ¹)	100
Lead Stabilizer	5
Uniplex FRP-45	40
Uniplex 546-A (TOTM)	34.3
Uniplex BAP-370	Varied
Antimony Trioxide	15

PHYSICAL PROPERTIES

UL 1581-105° C RATING	No Uniplex BAP-370	2 phr Uniplex BAP-370
Tensile Modulus at 100% Strain (psi)	1760	1754
Tensile Strength at Break	2050	2064
Elongation (%)	278	280
Shore A Hardness	88	89

FLAMMABILITY TESTING

Oxygen Index	33	38.9
NBS Smoke Values (ASTM E662)		
Smoldering (D _{MC})	180	140
Flaming (D _{MC})	440	360
Weight Loss 24 hours/90° C	0.2	0.2

APPLICATIONS IN THERMOPLASTIC RESINS FORMULATION

Component	phr
Poly(2,6-Dimethyl-1,4-phenylene ether)	30
Polythiophenylene ¹	70
Hydrogenated Styrene-butadiene-Styrene block copolymer ²	10
Uniplex BAP-370	6
Antimony Trioxide	2

¹ Ryton M-2588 ² Kraton G-1651

Property	Result
Flexural Modulus	2500 MPa
IZOD Impact Strength	101 MPa
Heat Distortion Temperature	150° C
UL 94 Rating	V-0

TOXICOLOGICAL PROPERTIES

Skin Absorption	LD ₅₀ > 5000 mg/kg Rat
Inhalation	LC ₅₀ > 1.81 mg/L Rat, 4 hr, max conc.
Ingestion	LD ₅₀ > 5000 mg/kg Rat
Skin Sensitization	Negative in Buehler Assay
Gene Mutation	Ames Test - Negative
Sub-Chronic Toxicity	No toxic effects and pathology after dietary administration of up to 20,000 ppm in rats for 28 days

ECOLOGICAL PROPERTIES

Environmental Effects	
Rainbow Trout	96 hr LC ₅₀ > 100 ppm
Daphnia	48 hr EC ₅₀ > 100 ppm
Algae	72 hr EC ₅₀ > 100 ppm

These suggestions and data are based on information we believe to be reliable. They are offered in good faith, but without guarantee, as conditions and methods of use of our products are beyond our control. We recommend that the prospective user determine the suitability of our materials and suggestions before adopting them on a commercial scale. Suggestions for uses of our product should not be understood as recommendations that they be used in violation of any patents.