

# QUALITY PROTECTS.

## **LANXESS** Flame Retardants

Product guide

**QUALITY WORKS.**

**LANXESS**  
Energizing Chemistry

Flame retardants	Chemical description	PVC	PVC-P	PVC-U	Polyurethane	Rigid PUR	Flexible PUR	TPU	Polyolefins	PP	PE	TPO	EPDM	Styrenics	HIPS	ABS	PC/ABS	HIPS/PP/PE	XPS	EPS	Engineering plastics	PA 6	PA 66	HTPA	PBT	PET	PC	Thermosets	UP	EP	PF	Other	Cellulosics	Synthetic rubber	Textiles	Wood, natural fibers	Highlights		
<b>Flame retardants – phosphorus-based</b>																																							
Amgard® CT	Organic phosphonate																																			■	Designed especially for polyester fibers, durable FR treatment		
Amgard® CU	Organic phosphonate																																			■	Designed especially for polyester fibers, durable FR treatment		
Disflamoll® 51036	Phosphate ester blend		■					■																						■	■						Especially designed for artificial leather		
Disflamoll® 51092	Butylated triphenyl phosphate		■				■	■					■																	■	■						Excellent flame retardance, low odor		
Disflamoll® DPK	Cresyl diphenyl phosphate		■				■	■					■						■											■	■						Excellent flame retardance		
Disflamoll® DPO	2-Ethylhexyl diphenyl phosphate		■					■					■																	■	■						Excellent plasticizing properties, light-fast		
Disflamoll® TKP	Tricresyl phosphate		■					■					■																	■	■						Very low PVC-gelling temperature		
Disflamoll® TKP-P	Tricresyl phosphate		■					■					■																	■	■						Purer version of TKP, especially for non-plastic applications		
Disflamoll® TOF	Tris-(2-ethylhexyl) phosphate		■										■																	■	■						Excellent cold flexibility, alternative to oil-based processing aids		
Disflamoll® TP	Triphenyl phosphate															■		■	■										■	■							Little plasticizing efficiency, supply form pellets or melt (melting point >48°C)		
Disflamoll® TP LXS 51064	Aqueous solution of phosphonate salt																																		■	Designed for wood and wood-based products			
Emerald Innovation® NH-1	Proprietary					■	■	■																													Excellent scorch resistance		
Levagard® 2000	Oligomeric phosphate ester					■	■																														Compatible with polyether and polyester polyols		
Levagard® 3000	Oligomeric phosphate ester						■																														Compatible with polyether and polyester polyols		
Levagard® 3001	Oligomeric phosphate ester composition						■																														Compatible with polyether and polyester polyols		
Levagard® 4090 N	N,N-hydroxyethylaminoethane phosphonic acid ester					■																									■	■					Reactive product		
Levagard® DMPP	Dimethylpropane phosphonate					■																								■							Very high phosphorus content		
Levagard® PP	Tris (2-chloroisopropyl) phosphate (TCPP)					■																								■							Cl / P-synergism, excellent efficiency		
Levagard® TEP-Z	Triethyl phosphate					■																								■							High phosphorus content, very low viscosity		
Levagard® TP LXS 51114	Phosphorus compound						■	■																											■		Very low volatility, compatible with polyether and polyester polyols		
Reofos® 1800	Isopropylated triphenyl phosphate		■				■	■					■																	■	■						Special quality available on request		
Reofos® 35	Isopropylated triphenyl phosphate		■				■	■					■																	■	■						Good low-temperature properties, high plasticizing efficiency, fast gelation		
Reofos® 50	Isopropylated triphenyl phosphate		■				■	■					■																	■	■						High plasticizing efficiency, fast gelation		
Reofos® 65	Isopropylated triphenyl phosphate		■				■	■					■							■										■	■						Imparts good electrical and oil resistance		
Reofos® 95	Isopropylated triphenyl phosphate		■				■	■					■																	■	■							Imparts good electrical and oil resistance, low volatility	
Uniplex FRX 44-94	N and P containing powder blend											■	■																■	■					■		Fine particle size, light-fast		
<b>Flame retardants – brominated</b>																																							
BA-59P	Tetrabromobisphenol A																■														■	■					Reactive flame retardant for epoxies		
BC-52	Phenoxy-terminated carbonate oligomer																																				High thermal stability		
BC-58	Tribromophenoxy-terminated carbonate oligomer																																				High bromine content		
Emerald Innovation® 3000 <sup>1)</sup>	Brominated styrene butadiene copolymer																				■	■														Polymeric, HBCD replacement for XPS and EPS			
Firemaster® BZ-54	Tetrabromophthalic anhydride derivative		■				■	■																							■	■	■				Low volatility in automotive fogging tests, excellent hydrolytic stability		
Firemaster® CP-44HF	Copolymer of dibromostyrene																						■	■	■	■	■	■									Low molecular weight, polymeric, better flow, higher blister resistance temperature		
Firemaster® PBS-64HW	Poly (dibromostyrene)																						■	■	■	■	■	■									Polymeric, higher glass transition temperature than PDBS-80		
Firemaster® 504	Tetrabromophthalate diol blend						■																														Br/P-synergism, low viscosity, improved process handling and storage characteristics		
Firemaster® 508	Tetrabromophthalate diol blend						■																														Low viscosity, improved process handling and storage characteristics versus neat PHT-4-Diol		
Firemaster® 600	Tetrabromobenzoate ester composition						■																														Br/P-synergism, low scorch		
Firemaster® 602	Tetrabromobenzoate ester composition						■																														Br/P-synergism, low scorch		
Firemaster® 2100R	Decabromodiphenyl ethane							■		■	■	■	■										■								■	■	■				Excellent balance of physical properties, flammability performance and processability		
PDBS-80	Poly (dibromostyrene)																							■	■	■	■	■	■								Polymeric, higher thermal stability than PBS-64HW and 44-HF		
PHT-4	Tetrabromophthalic anhydride																																				High bromine content, crystall powder, reacts with unsaturated polymer		
PHT-4-Diol	Tetrabromophthalate diol						■		■																												Reactive, excellent compatibility with a broad range of commercial polyols and blowing agents		
PHT-4-Diol LV	Tetrabromophthalate diol						■		■																												Low-viscosity version of PHT-4 Diol, improved process handling and storage characteristics		
PH-73FF	2,4,6-Tribromophenol																														■						Intermediate, can be used as a flame retardant for epoxies		
Uniplex FRP-45	Di-(2-ethylhexyl) tetrabromo phthalate		■				■						■																								Outstanding thermostability, good hydrolytic stability, low volatility		
Uniplex FRP-64	Poly(2,6-dibromophenylene oxide)																							■	■		■	■									Brominated polymer, little discoloration		

■ Recommended ■ Suitable <sup>1)</sup> Emerald Innovation® 3000 is based on technology licensed from DuPont.



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Unless specified to the contrary, the values given have been established on standardized test specimens. The figures should be regarded as guide values only and not as binding minimum values. Kindly note that the results refer exclusively to the specimens tested. Under certain conditions, the test results established can be affected to a considerable extent by the processing conditions and manufacturing process.

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