

Flame Retardancy and Physical Properties of Phosphates

Resin;	PC/ABS	100 phr
FR agent;	PX-200, CR-741, CR-733S, TPP	10 ~ 18 phr
FR assistant;	PTFE	0.4 phr

Melting Point	
PX-200	95 °C
CR-733S	liq.
CR-741	liq.
TPP	52 °C

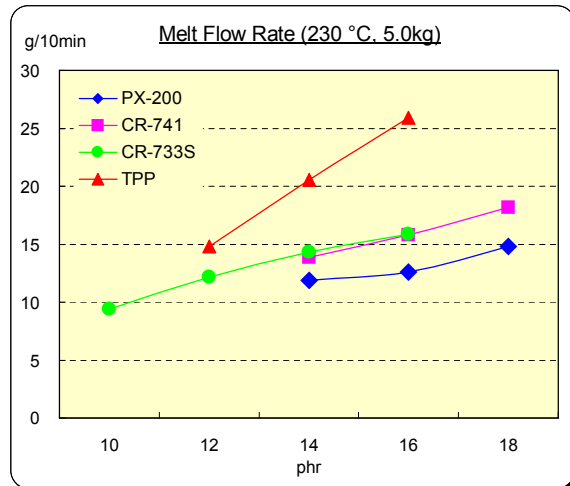
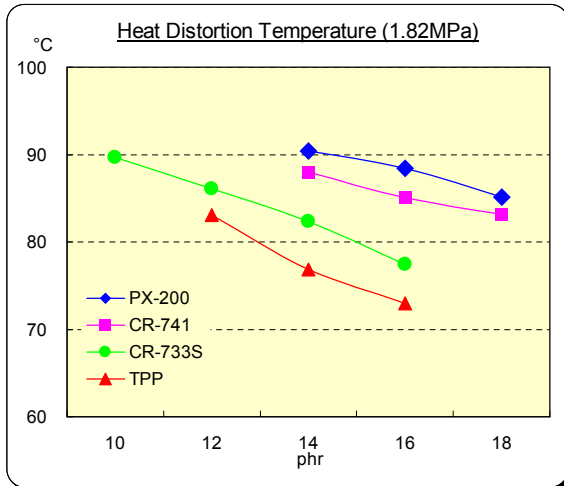
Kneading;	250 °C Twin screw extruder (D=37mm, LID=35)
Molding;	250 °C Injection molding machine

UL-94 Vertical (1.6mm)					
FR(phr)	10	12	14	16	18
PX-200			V-1	V-0	V-0
CR-741			V-1	V-1	V-0
CR-733S	V-1	V-0	V-0	V-0	V-0
TPP		V-1	V-0	V-0	V-0

Oxygen Index					
FR(phr)	10	12	14	16	18
PX-200			26.8	27.6	27.4
CR-741			26.1	26.7	27.5
CR-733S	25.9	27.2	27.6	28.1	
TPP		25.6	26.2	27.2	

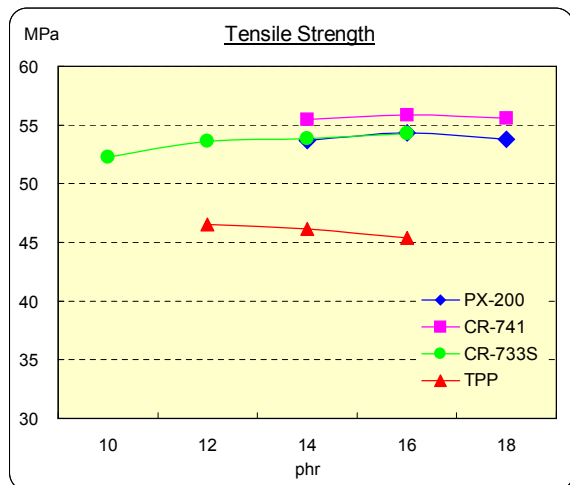
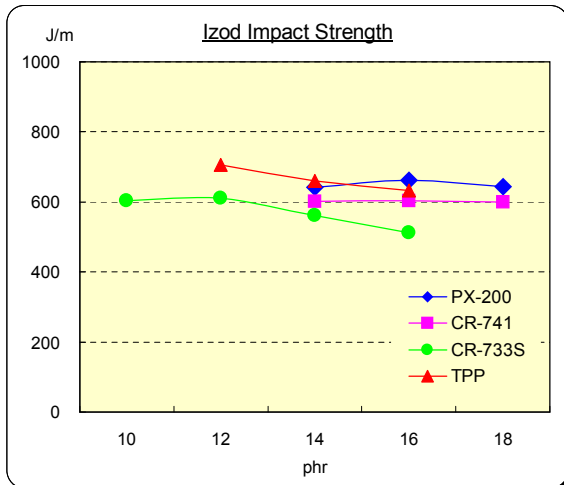
Heat Distortion Temperature					
FR(phr)	10	12	14	16	18
PX-200			90.4	88.4	85.2
CR-741			88.0	85.1	83.2
CR-733S	89.7	86.1	82.4	77.5	
TPP		83.1	76.9	73.0	

Melt Flow Rate					
FR(phr)	10	12	14	16	18
PX-200			11.9	12.6	14.8
CR-741			13.9	15.8	18.2
CR-733S	9.40	12.2	14.3	15.9	
TPP		14.8	20.6	25.9	



Izod Impact Strength (3.2mm)					
FR(phr)	10	12	14	16	18
PX-200			641	661	643
CR-741			602	604	600
CR-733S	604	611	560	511	
TPP		706	660	632	

Tensile Strength					
FR(phr)	10	12	14	16	18
PX-200			53.7	54.3	53.8
CR-741			55.5	55.9	55.6
CR-733S	52.2	53.6	53.8	54.3	
TPP		46.5	46.1	45.4	

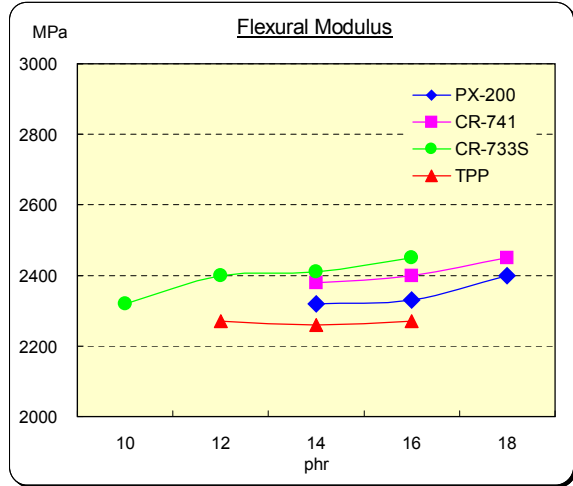
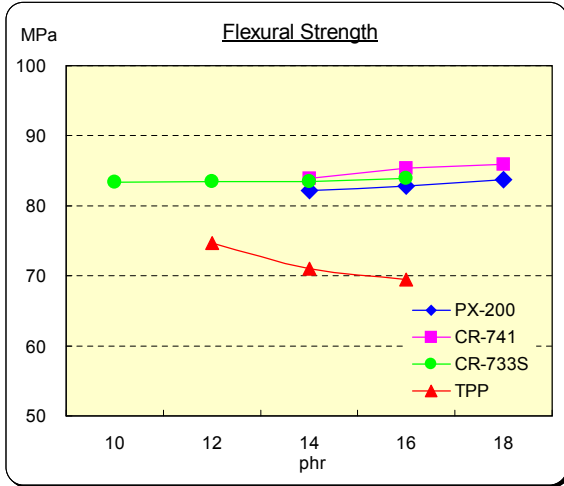


Flexural Strength

FR(phr)	10	12	14	16	18
PX-200			82.1	82.8	83.7
CR-741			83.9	85.4	86.0
CR-733S	83.4	83.4	83.5	83.9	
TPP		74.7	71.0	69.5	

Flexural Modulus

FR(phr)	10	12	14	16	18
PX-200			2320	2330	2400
CR-741			2380	2400	2450
CR-733S	2320	2400	2410	2450	
TPP		2270	2260	2270	



Hydrolysis Resistance of Phosphates (MIL-H-19457D(SH))

FR agent	KOH mg
PX-200	25
CR-741	25
CR-733S	16000
TPP	5

KOHmg ; Acid amount of water layer after hydrolysis
Hydrolysis Condition ; sample 75g + distilled water 25g, 93 °C×48 hrs

Loss on Heating (%) by TGA

FR agent	200 °C	250 °C	300 °C	350 °C
PX-200	0.1	0.3	1.4	6.8
CR-741	0.4	0.7	1.8	3.7
CR-733S	0.0	0.2	1.3	5.1
TPP	1.0	12.6	88.6	100.0

N2 ; 150 mL/min Heating Rate ; 10 °C/min
Sample pan ; open

