



Resistance of Plastics to Gamma Irradiation

Select a Type:

Material	Ratings	
Thermoplastics	++++	Excellent
Thermosets	+++	Good
Textiles	++	Satisfactory
Adhesives	+	Weak
Oils and greases	-	Unsatisfactory

Material

Type	Stability	Dose
Polyurethane rubber	++++	100-200
Natural rubber	+++	100
SBR (Styrene Butadiene Rubber)	+++	
Nitrile rubber	+++	200
NBR (Nitrile Butadiene Rubber)	++	
Polybutadiene	+++	
Acrylonitrile butadiene copolymer	+++	
Silicone rubber	++/+++	50 to 100
Neoprene rubber (polychloroprene)	++/+++	
Isobuthylene-isoprene copolymer	++	
Polyisoprene	+++	
EPR (Ethylene Propylene Rubber)	+++	
Vinylidene fluoride / hexafluoro propylene rubber	++	
Trifluoro chloro ethylene	+++	
Butadiene-vinylpyridine copolymer	+++	
Chloroprene rubber	+++	
Chlorosulfonated polyethylene	+++	
Polysulphide rubber	+++	
EVA rubber (Ethyl Vinyl Acetate)	+++	
Ethyl acrylate rubber	++	
TPO (Olefinic Thermoplastic Elastomer 'Santoprene' nbsp;	++	
Polyester TPE (thermoplastic elastomer)	+++	
Styrenic TPE (thermoplastic elastomer)	+++	
Urethane TPE (thermoplastic elastomer)	+++	
Butyl rubber	-/+	20-50
Chloro butyl rubber -Bromo -butyl rubber	++	

Thermoplastics

Type	Stability	Dose
Polysulfone	++++	>1000
PES (polyestersulfone)	+++	
PS (polystyrene)	++++	>1000
SAN (styrene acrylonitrile)	+++	1000
Poly-alpha-methyl styrene	+++	
ABS (acrylonitrile butadiene styrene)	+++	1000
PS/polybutadiene blend	++++	
Alkene fumarate styrene copolymer	++++	
Styrene maleic anhydride copolymer	++++	
Styrene acrylonitrile copolymer	++++	
LDPE (low density polyethylene)	+++ /++++	500
LLDPE (linear low density polyethylene)	+++	500
MDPE (medium density polyethylene)	+++	500
HDPE (high density polyethylene)	++++	
XLPE (crosslinked polyethylene)	++++	
PP (polypropylene, homopolymer)	+	<50
PP (polypropylene, copolymer)	++	<60
Poly (alkylene sulphide)	++	
PA (polyamide) "Nylon 6"	+++	

PA (polyamide) "Nylon 12"	+++	
PI (poly imide)	++++	100000
PAI (polyamide imide)	++++	100000
PEI (poly ether imide)	++++	
PEEK (poly ether ether keton)	++++	10000
PAEK (Ultrapek)	++++	
PVC (poly vinyl chloride) and copolymers	++/+++	50
PVC polyol (plasticised PVC)	+++	
PVDC (polyvinylidene chloride)	+ / ++	50
PVDF (polyvinylidene fluoride)	+++	1000
PVOH (poly vinyl alcohol)	++	
Poly vinyl formal	+++	
Poly vinyl butyral	++++	
PVAc (poly vinyl acetate)	++++	
Poly vinyl methyl ether	+++	
Poly (vinyl carbazole)	++++	
Perfluoropropylene-vinylidene fluoride copolymer	-	
PTFE (poly tetra fluor ethylene) Teflon or Fluon	-	5
FEP (fluorised ethylene propylene)	++	50
ETFE (ethylene tetrafluor ethylene copolymer)	++	1000
PCFTE (poly choro trifluor ethylene)	+	200
Poly (chloromethyloxacyclobutane)	-	
PC (polycarbonate)	+ / ++	1000
Polyallyl diethylene glycol carbonate	++++	
Poly (bis-hydroxy phenyl propane carbonate)	+++	
PC ABS Alloy	++	
PC acrylic alloy	++	25
Polyphtalate carbonate	++	
Polyester carbonate	+++	50-100
Polyester (Mylar or Melinex)	+++	
Polyester copolymer	++++	
Cellulose esters-acetate and nitrate	++	
Polydimethyl siloxane	++	
Poly (methyl vinyl siloxane)	++	
Poly (methyl phenyl siloxane)	++	
EVA (ethyl vinyl acetate copolymer)	++	30
EVOH (ethyl vinyl alcohol)	+++	
PMMA (polymethylmethacrylate)	- / +	100
PMMA-PS copolymer	+++	
AMMA acrylonitrile methylmethacrylate copolymer	++	
Cyano acrylate	-	
Polyethyl acrylate	++++	
Acrylonitrile copolymer	++	
Acrylonitrile ethyl acrylate copolymer	++	
Acrylonitrile butyl acrylate copolymer	++	
Poly (dihydroperfluorobutyl acrylate)	++	
RTPU (rigid thermoplastic polyurethane)	++++	
PETP (polyethylterephthalate)	+++	
PETG (polyethylene terephthalate glycol)	++++	1000
PBT (polybutylene terephthalate)	+++	1000
PPO (poly phenyl oxide)	+++	
Polyphenyl sulphide	++++	
POM (polyacetal) (Delrin)	-	15
Polyacetal-polyformaldehyde and copolymers	-	
Polyformaldehyde	+	
LCP (liquid crystal polymer)	++++	
Poly (4-methylpentene)	+	