

# Characteristics\* of insulating and sheath materials

Thermic		Mechanical							Halogen	Weather		Designation				
Thermal-conductivity $W \cdot K^{-1} \cdot m^{-1}$	Corrosive gases in case of fire	Radiation-resistance max Mrad	tensile strength N/mm <sup>2</sup>	Elongation at break %	Shore hardness	Abrasion resistance	Water absorption %	halogen-free	Weather resistance	Cold resistance	VDE-initial-code	Ab-abbreviations	Material			
0,17	Hydrogen chloride	80	10-25	130-350	70-95 (A)	medium	0,4	no	medium, in black good	moderate - good	Y	PVC	Polyvinylchloride compounds			
											Yw	PVC	Heat-resistant 90°C			
											Yw	PVC	Heat-resistant 105°C			
											YK	PVC	Cold resistant			
	0,3	no	100	10-20	400-600	43-50 (D)	medium	0,1	yes	good	2Y	LDPE	Low density Polyethylene			
	0,4			20-30	500-1000	60-63 (D)	good				2Y	HDPE	High density Polyethylene			
	0,3			12,5-20	300-400	40-45 (D)	medium				2X	VPE	Cross-linked Polyethylene			
	0,25	no	80	8-12	350-450	-	-	-	conditional <sup>1)</sup>	-	02Y		Foamed Polyethylene			
	0,25			55-65	300-400	35-50 (D)	good	0,4	medium - good	moderate - good	3Y	PS	Polystrole			
	0,23			10	50-60	50-170	-	very good	1,0-1,5	yes	good	good	4Y	PA	Polyamid	
0,19	20-35	300	55-60 (D)		medium	0,1	moderate	moderate	9Y	PP	Polypropylene					
0,25	no	100 (500)	30-45	500-700	70-100 (A)	very good	1,5	yes <sup>2)</sup>	very good	very good	11Y	PUR	Polyurethane			
0,5			10	30	> 300	85 (A) 70 (D)	good	1,5			yes	TPE-E (12Y)	Polyester Elastomer			
1,5			10	20		55 (A) 70 (D)		TPE-O			Polyolefine Elastomer					
-	no	100	5-10	300-600	60-70 (A)	moderate	1,0	yes	moderate	very good	G	NR SBR	Natural rubber Styrol-butadiene rubber compounds			
					0,22						50	40-80 (A)	2G	SiR	Silicone rubber	
					-						200	200-400	65-85 (A)	3G	EPR	Ethylen-propylene rubber-compounds
					-						100	8-12	250-350	70-80 (A)	4G	EVA
	-	hydrogen chloride	50	10-20	400-700	55-70 (A)	medium	1,5	no	very good	moderate - good	5G	CR	Polychloroprene compounds		
	-				350-600	60-70 (A)					moderate	6G	CSM	Chlorosulfonated Polyethylene compounds		
0,17	hydro-fluoric	10	50-80	150	75-80 (D)	very good	0,01	no	very good	very good	10Y	PVDF	Polyvinylidene fluoride Kynar/Dyflor			
	yes	10	40-50	150	70-75 (D)	very good	0,02				very good	very good	7Y	ETFE	Ethylene-Tetrafluor-ethylene	
	yes	1	15-25	250	55-60 (D)	very good	0,01				very good	very good	6Y	FEP	Fluorine ethylene propylene	
	yes	0,1	25-30	250	55-60 (D)	very good	0,01				very good	very good	5YX	PFA	Perfluoralkoxypolymeric	
	yes	0,1	80	50	55-60 (D)	very good	0,01				very good	very good	5Y	PTFE	Polytetrafluorethylene	
0,17	no	100	8-13	150-250	65-95 (A)	medium	0,2-1,5	yes	medium in black: good	average	H	not cross linked	halogen-free polymer-compounds			
	0,20	no	200	8-13		150-250					medium	HX	cross-linked	halogen-free polymer-compounds		

Thermoplastic

Elastomere

High temp. materials

halogen-free compounds

<sup>1)</sup> The propellant may be e.g. Fluor-Chlor-Hydrocarbon

<sup>2)</sup> depend on the type compound