Questions to consider.

- What kind of mechanical stress do you expect?
- What kind of thermal stress do you expect?
- What kind of chemical stress do you expect?
- What electrostatic characteristics do you need?
- Should the brush body have your trademark on it?
- What colour do you want, assuming the material permits a choice?

Body materials		Thermal characteristics										Chemical resistance						Remarks
Thermoplastics	**Abbreviation DIN 7728**	Density (DIN 53479)	Melting point	Thermal conductivity	Specific thermal conductivity	Coefficient of elongation[2]	Operating temperature, short-term[1]	Operating temperature, continuous[1]	Moisture absorption under norm. climatic cond. 23/50	Moisture absorption when used in water at 20°C	Fire resistance as per UL	Mineral lubricating oils and grease	Benzine	Trichloroethylene	Tetrachloro-carbon	Acids	Alkalis	
		$\frac{g}{cm^3}$	°C	$\frac{W}{K \cdot m}$	$\frac{J}{g \cdot K}$	$\frac{10^{-5}}{°C}$	°C	°C	%	%		at 20° C						
Polyamides																		
Polyamide 6 (Polyamide B)	PA 6	1.14	220	0.233	1.675	7...8	160	–40 100	2.5...3	8.5... 10	94V-2[3]	+	+	⊕	+	⊕[7]	+	Particularly tough, high abrasion resistance, minimal static electricity
Polyamide 6.6	PA 6.6	1.15	255	0.231	1.675	7...10	170	–30 120	2.5...3	7.5...9	94V-2[3]	+	+	⊕	+	⊕[7]	+	Very high strength and rigidity, dimensionally stable, low thermal expansion
Polyamide 6.10	PA6.10	1.08	215	0.233	1.675	8...10	160	–40 100	1.2... 1.6	3...4	94V-2[3]	+	+	⊕	+	⊕[7]	+	Tough, abrasion resistant, lower moisture absorption than 1
Polyamide 6 + 25% glass fibre	PA 6 GF	1.30	220	0.23	1.5	2...3	200	–40	1.5	6	94HB[4]	+	+	⊕	+	⊕[7]	+	Very high strength and rigidity, dimensionally stable, low thermal expansion
Polyacetals																		
Polyoxymethylene (homopolymerisate)	POM	1.42	175	0.233	1.465	9	140	–40 110	0.25	0.8		+	+[5]	⊕	+	⊕	⊕	High strength, impact resistant, minimal cold flow
Polyethylenes																		
HD-Polyethylene	HDPE	0.955	129	0.43	1.86	20	120	–100 80		>0.1	94HB	+	+	–	–	+	+	High resistance to chemicals, low cost
Polypropylenes																		
Polypropylene	PP	0.915	162	0.221	1.68	18	140	+10 100		>0.1	94HB	+	⊕	⊕	–	+	+	Good resistance to chemicals, low relative density, little impact resistance below -5°C
Polypropylene + 20% glass fibre	PP GF	1.05	164... 167	0.25	1.47	5...17	140	–10 110		>0.2	94HB	+	⊕	⊕	–	+	+	Average rigidity and hardness, good resistance to chemicals, minimal distortion
Styrene-polymerisates																		
Acrylonitrile butadiene-styrene copolymer	ABS	1.06		0.174	1.142	9	95	–35 80		0.45		+	⊕	–	–	+	+	Good combination of rigidity, hardness and durability
Other																		
Polyvinyl chloride	PVC	1.38		0.16	1.05	8	80	–40 60		>0.1	94V-0	+	⊕	–	⊕	+	+	Good resistance to chemicals, high strength, low cost
Thermoplastic elastomer	TPE/TPV	0.95	155	0.16	2.545	18.5 10…5	150	–40 120		>0.1	94HB	⊕	+	–	–	+	+	Large temperature range, high-quality material, good chemical resistance
Simopur	PS	1.05	180	0.17	1.3	9 10…5	80	60	<0.1		94HB	⊕	–	–	–	⊕	⊕	Extremely light, 0% water absorption, low-cost alternative for large brush panels
Tecaform	POM-C/EL	1.41	172	0.27		11…10	140	100	0.3	0.5	HB	+	+	–	–	○	○	Electrically conductive, high strength, good resistance to organic solvents

1 Empirical data for finished parts subject to little stress and depending on the type and nature of the effects of heat short term: up to a few hours; continuous: months to years
2 Applicable in the range of approx. 20°C to 100°C
3 Specimen thickness 1.6 mm
4 Also possible in 94V-0 and 94V-2 settings
5 Allow for possible diffusion
6 Relatively resistant to existing acids
7 Not resistant to acid solutions of pH<5

\+ resistant – not resistant ⊕ relatively resistant
○ soluble

Date: 2005. Subject to alterations and corrections.
No responsibility is accepted for the correctness of this information.

The information given in this table is for guidance only. The data are known to be affected by processing conditions, modifications, additives to materials and environmental influences. They have been compiled on the basis of current experience and do not constitute any obligation.