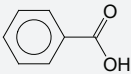


PBA poly(p-benzamide)

PARAMETER	UNIT	VALUE	REFERENCES
GENERAL			
Common name	-	poly(p-benzamide)	
CAS name	-	poly(imino-1,4-phenylenecarbonyl); benzamide, homopolymer	
Acronym	-	PBA	
CAS number	-	24991-08-0; 55738-52-8	
HISTORY			
Person to discover	-	Kwlek, S L	US Patent 3,600,350, DuPont, Aug 17, 1971.
Date	-	1966	
Details	-	it may be obtained by the low temperature solution polymerization of p-aminobenzoyl halide salts	
SYNTHESIS			
Monomer(s) structure	-		
Monomer(s) CAS number(s)	-	150-13-0	
Monomer(s) molecular weight(s)	dalton, g/mol, amu	137.14	
Mass average molecular weight, M_w	dalton, g/mol, amu	12,000-23,500	
Polydispersity, M_w/M_n	-	1.10-1.18	Takagi, K; Nobuke, K; Nishikawa, Y; Yamakado, R, Polym. J., 45, 1171-76, 2013.
Van der Waals volume	cm ³ mol ⁻¹	calc.=76.6	
STRUCTURE			
Cell type (lattice)	-	orthorhombic	
Cell dimensions	nm	a:b:c=0.775:0.530:1.287	Takahashi, Y; Ozaki, Y; Takase, M; Krigbaum, W R, J. Polym. Sci., Part B: Polym. Phys., 31, 9, 1135-43, 1993.
Number of chains per unit cell	-	1	
Interplanar spacing	nm	0.379-0.439	Shi, H; Zhao, Y; Zhang, X; Zhou, Y; Xu, Y; Zhou, S; Wang, D; Han, C C; Xu, D, Polymer, 45, 6299-6307, 2004.
Chain conformation	-	TCTC	
Avrami constants, k/n	-	1.01-1.10	Lin, J; Xi, S; Wu, H; Li, S, Eur. Polym. J., 33, 10-12, 1601-5, 1997.
PHYSICAL PROPERTIES			
Density at 20°C	g cm ⁻³	1.48	
Melting temperature, DSC	°C	>500	
Glass transition temperature	°C	230	
MECHANICAL & RHEOLOGICAL PROPERTIES			
Intrinsic viscosity, 25°C	dl g ⁻¹	1.18-2.07	

PBA poly(p-benzamide)

PARAMETER	UNIT	VALUE	REFERENCES
CHEMICAL RESISTANCE			
Acid dilute/concentrated	-	poor	
Alcohols	-	good	
Aliphatic hydrocarbons	-	good	
Aromatic hydrocarbons	-	good	
Esters	-	good	
Greases & oils	-	good	
Good solvent	-	acetylpyrrolidone, diethylacetamide, dimethylacetamide, tetramethylurea	
Non-solvent	-	ethylene glycol, glycerol, water	
ANALYSIS			
x-ray diffraction peaks	degree	20.2, 23.4	Shi, H; Zhao, Y; Zhang, X; Zhou, Y; Xu, Y; Zhou, S; Wang, D; Han, C C; Xu, D, Polymer, 45, 6299-6307, 2004.