Surface Energy Data for PUR: Polyurethanes

Source[a]	Mst. Type[b]	Data[c]	Comments[d]
Busscher, 1983[158]	Contact angle	$\theta_W^Y = 89^o$; no temp cited	No details on material tested.
Ratner, 1988[89]	Contact angle	$\theta_W^Y = 72^o$; no temp cited	No details on material tested.
Ratner, 1988[89]	Contact angle	$\theta_W^Y = 79^o$; no temp cited	No details on material tested.
Tingey, 1988[90]	Contact angle	$\theta_W^A = 82^o$, $\theta_W^R = 51^o$, $d\theta_W = 31^o$; no temp cited	100% PTMO Vialon polyurethane.
Tingey, 1988[90]	Contact angle	$\theta_W^A = 79^o$, $\theta_W^R = 33^o$, $d\theta_W = 46^o$; no temp cited	67% PTMO/33% PEO Vialon polyurethane.
Tingey, 1988[90]	Contact angle	$\theta_W^A = 71^o$, $\theta_W^R = 31^o$, $d\theta_W = 40^o$; no temp cited	33% PTMO/67% PEO Vialon polyurethane.
Tingey, 1988[90]	Contact angle	$\theta_W^A = 55^o$, $\theta_W^R = 30^o$, $d\theta_W = 25^o$; no temp cited	100% PEO Vialon polyurethane.
Tingey, 1988[90]	Contact angle	$\theta_W^A = 82\text{-}87^o$, $\theta_W^R = 50\text{-}51^o$, $d\theta_W = 30\text{-}36^o$; no temp cited	Vialon 510X (4 formulations, from 45 to 75 Shore hardness).
Tingey, 1988[90]	Contact angle	$\theta_W^A = 88^o$, $\theta_W^R = 50^o$, $d\theta_W = 38^o$; no temp cited	Pellethane polyurethane.
Tingey, 1988[90]	Contact angle	$\theta_W^A = 93^o$, $\theta_W^R = 45^o$, $d\theta_W = 48^o$; no temp cited	Mitrathane polyurethane.
Tingey, 1988[90]	Contact angle	$\theta_W^A = 90^o$, $\theta_W^R = 0^o$, $d\theta_W = 90^o$; no temp cited	Biomer polyurethane.
Tingey, 1988[90]	Contact angle	$\theta_W^A = 105^o$, $\theta_W^R = 29^o$, $d\theta_W = 76^o$; no temp cited	Lycra polyurethane.
Fukuzawa, 1994[113]	Contact angle	$\theta_W^Y = 82.4^o$; no temp cited	Contact angle measured after stabilizing for 15 secs.
Argyropoulos, 2009[227]	Contact angle	$\theta_W^Y = 67^o$; 23°C	Coating formed from commercial polyurethane dispersion from polyester-based polyol.
Argyropoulos, 2009[227]	Contact angle	$\theta_W^Y = 73^o$; 23°C	Coating formed from polyurethane dispersion from adipate-based polyol.
Argyropoulos, 2009[227]	Contact angle	$\theta_W^Y = 73^o$; 23°C	Coating formed from polyurethane dispersion from caprolactone-based polyol.
Argyropoulos, 2009[227]	Contact angle	$\theta_W^Y = 85^o$; 23°C	Coating formed from polyurethane dispersion from soy-based polyol.
Nyilas, 1975[296]	Contact angle	$\gamma_s = 38.6$ mJ/m^2 ($\gamma_s^d = 31.1$, $\gamma_s^p = 7.5$); 20°C	Test liquids not known. Poly(hexamethylene diisocyanate-*alt*-triethylene glycol).
Nyilas, 1975[296]	Contact angle	$\gamma_s = 36.3$ mJ/m^2 ($\gamma_s^d = 23.8$, $\gamma_s^p = 12.5$); 20°C	Test liquids not known. Poly(4-methyl-1,3-phenylene diisocyanate-*alt*-tripropylene glycol).
Busscher, 1983[158]	Contact angle	$\gamma_s = 39$ mJ/m^2 ($\gamma_s^d = 32.0$, $\gamma_s^p = 7.0$); 20°C	Test liquids not known. ESTANE 5714.
Ratner, 1988[89]	Contact angle	$\gamma_s = 45.2$ mJ/m^2 ($\gamma_s^d = 31.3$, $\gamma_s^p = 13.9$); no temp cited	Test liquids: water and diiodomethane, by harmonic mean equation; no details on material tested.
Ratner, 1988[89]	Contact angle	$\gamma_s = 39.2$ mJ/m^2 ($\gamma_s^d = 27.5$, $\gamma_s^p = 11.7$); no temp cited	Test liquids: water and diiodomethane; by harmonic mean equation; no details on material tested.
Berger, 1991[145]	Contact angle	$\gamma_s = 38.7$ mJ/m^2 ($\gamma_s^d = 34.3$; $\gamma_s^p = 4.4$); no temp cited	Various test liquids, by geometric mean equation. Commercial two part urethane adhesive.
Vargo, 1991[185]	Contact angle	$\gamma_s = 32.4$ mJ/m^2; no temp cited	Various test liquids; thick film of polyether-based urethane cast onto Ag foil.
Vargo, 1991[185]	Contact angle	$\gamma_s = 37.8$ mJ/m^2 ($\gamma_s^d = 35.1$, $\gamma_s^p = 2.7$);	Various test liquids; thick film of polyether-based urethane cast

		no temp cited	onto Ag foil.
Fukuzawa, 1994[113]	Contact angle	γ_s = 30.0 mJ/m^2 (γ_s^{LW} = 30.9, γ_s^{AB} = -0.9, γ_s^+ = 0.02, γ_s^- = 10.0); no temp cited	Test liquids: water, formamide, and diiodomethane; acid-base analysis, calculated per Good and Van Oss[86]. Contact angles measured after stabilizing for 15 secs.
Fukuzawa, 1994[113]	Contact angle	γ_s = 35.5 mJ/m^2; no temp cited	Test liquids: water, formamide, and diiodomethane.
Schoff, 2003[263]	Contact angle	γ_s = 40 mJ/m^2 (γ_s^d = 31; γ_s^p = 9); no temp cited	Test liquids not known. Bayflex 110-25 unfilled RIM PU; calculated by geometric mean equation.