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Amphiphilic diblock copolymers with adhesive properties: structure and swelling with water PASCALE FABRE, CRPP-CNRS 115 av. Dr. Schweitzer F-33600 Pessac, SYLWIA POIVET[1], FRÉDÉRIC NALLET, KAI SCHIERHOLZ[2], GINU ABRAHAM, CRPP-CNRS, ERIC PAPON, YVES GNANOU, LCPO, 16 av. Pey-Berland, F-33607 Pessac cedex, France, RAYMOND OBER, Laboratoire de physique des fluides organisés, UMR CNRS-Collège de France, 11 place Marcelin Berthelot, F-75231 Paris cedex 05, France, OLIVIER GUERRET, NOUR-EDDINE EL-BOUNIA, ARKELA-GRL, B.P. 34, F-64170 Lacq, France — We study asymmetric block copolymers with the simple diblock AB architecture, in the case where the longer block A is both hydrophobic and "soft", whereas the shorter block B is hydrophilic and "hard". Materials with such a particular combination of physico-chemical and mechanical properties have distinctive advantages, in particular for designing water-compatible adhesive materials. The phase-diagram is established, combining NMR and SAXS characterizations of the materials. The swelling with water is monitored through gravimetry and "time-resolved" SAXS. Indications of maintained adhesive properties in a wet environment are given.

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