

Title (en)

AQUEOUS-BASED, SHEAR-THINNING, ERASABLE INK AND ROLLER-BALL PEN CONTAINING SAME

Title (de)

WÄSSRIGE, SCHERFLUIDISIERENDE, RADIERBARE TINTE UND DIESE ENTHALTENDER KUGELSCHREIBER

Title (fr)

ENCRE EFFA BLE FLUIDIFIANTE A BASE AQUEUSE ET STYLO A BILLE ROULANTE LA CONTENANT

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Application

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Abstract (en)

[origin: WO9716499A1] An aqueous-based, shear-thinning, erasable ink and a roller-ball pen containing same. In a preferred embodiment, the ink comprises a blend of three different non-carboxylated, styrene-butadiene aqueous emulsions, a water-insoluble or water-dispersible pigment and a shear-thinning, viscosity-adjustment agent in the form of a silicate clay. The ink further comprises an antioxidant preparation, which includes tocopherol and vitamin C, for use in extending the time period over which the ink remains erasable after being applied to a substrate, a shear-stabilizing agent in the form of potassium oleate for use in preventing unwanted coagulation of the styrene-butadiene copolymer due to shear, a pH-adjusting agent in the form of triethanolamine for shifting the pH of the ink to a pH of about 9-10, and an antidrying agent in the form of a 3:1 mixture of sorbitol to glycerine. The pen comprises a barrel (13) for storing a quantity of the ink, the barrel being made of polypropylene and having an open top end (15); a hollow tip (29) made of a stainless steel, a nickel-silver alloy or a polyoxymethylene and having a top (31) end and a bottom end (33), the top end being shaped to define a ball socket (35); a ball (41) rotatably received in the ball socket (35) and made of a sintered ceramic material; and an elongated hollow connector (21) made of a polyoxymethylene and having an open top end (23) adapted to receive the bottom end of the hollow tip and an open bottom end (25) adapted to be received in the open top end (15) of the barrel. The ball (41) has a diameter of about 0.7 mm or greater. The socket (35) has a maximum internal width that exceeds the diameter of the ball (41) by approximately 0.015-0.025 mm and is shaped to enable the ball to move axially therewithin a distance of approximately 0.03-0.07 mm.

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