

P A T E N T C L A I M S

1. An injector (1) for delivery of a pharmaceutical composition, the injector (1) comprising a cylinder (2) with a longitudinal axis and an inner wall (3), a piston (4) having a piston body and a deformable sealing element (5) with a convex surface, the deformable sealing element (5) having, or the piston (4) and the deformable sealing element (5) having a Shore A hardness in the range of 50 to 90, which deformable sealing element (5) abuts the inner wall (3) of the cylinder (2) at an abutting interface (6) and seals an annular gap between the piston body and the inner wall (3) of the cylinder (2), the abutting interface (6) and the deformable sealing element (5) having axial dimensions parallel with the longitudinal axis, c h a r a c t e r i s e d in that the ratio between the largest axial dimension of the abutting interface (6) and the largest axial dimension of the deformable sealing element (5) is in the range between 0.01 and 0.4, the diameter of the deformable sealing element (5) in a relaxed state is 3% to 20% larger than the inner diameter of the cylinder (2), and in that the injector (1) does not comprise a lubricant selected from glycerine and silicone oil, and perfluoro groups on the surface of the piston.

2. The injector (1) according to claim 1, wherein the piston (4) is solid and has two or more deformable sealing elements (5) as defined in claim 1.

3. The injector (1) according to any one of claims 1 or 2, wherein the cylinder (2) is made from a polymeric material, such as a cyclic olefin copolymer (COC) or polystyrene, a glass, a metal or a combination of polymeric materials, glasses or metals.

4. The injector (1) according to any one of claims 1 to 3, wherein the piston (4) is symmetrical relative to a transverse plane.

5. The injector (1) according to any one of claims 1 to 4, wherein the deformable sealing element (5) is made from a thermoplastic elastomer.

6. The injector (1) according to any one of claims 1 to 5, wherein the deformable sealing element (5) have a Shore A hardness in the range of 60 to 90.

7. The injector (1) according to any one of claims 1 to 6, wherein the diameter of the deformable sealing element (5) in a relaxed state is 5% to 15% larger than the inner diameter of the cylinder (2).

8. The injector (1) according to any one of claims 1 to 7, wherein the piston (4) does not comprise any pigments or dyes.

9. The injector (1) according to any one of claims 1 to 8, wherein the piston body and the deformable sealing element (5) are of the same material.

5 10. The injector (1) according to any one of claims 1 to 9, wherein the piston (4) is made by injection moulding.

11. The injector (1) according to claim 10, wherein the piston (4) is made from a styrene block copolymer.

10 12. The injector (1) according to any one of claims 1 to 11, wherein the cylinder (2) has an inner diameter of up to 45 mm.

13. The injector (1) according to any one of claims 1 to 12, wherein the cylinder (2) has an inner diameter in the range of from 2 mm to 10 mm.

14. The injector (1) according to any one of claims 1 to 13, wherein the cylinder (2) is prefilled with a pharmaceutical composition.

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