CLAIMS

1. A prefilled syringe comprising a barrel having an inner wall, a drug product contained within a product containing area and a three-position plunger disposed in its entirety within the barrel, the three-position plunger having a generally cylindrical exterior surface, the three-position plunger comprising: a sleeve having an opening at a distal end thereof, a nose cone and a sidewall including a storage sealing section that comprises at least one rib and a liquid sealing section disposed between the nose cone and the storage sealing section, the sleeve further comprising a pre-load cavity proximal to and in communication with the opening, a first cavity proximal to and in communication with the pre-load cavity, a second cavity proximal to and in communication with the ~~pre-load~~first cavity, and at least one rib, the at least one rib being generally aligned with the first cavity~~;~~, ~~and~~the three-position plunger further comprising an insert that is pre-inserted into the pre-load cavity in a pre-load mode in which compressive force or radial pressure that the three-position plunger exerts against the inner wall is unaffected by disposal of the insert in the pre-load cavity, the insert being configured to be displaced from the pre-load cavity to the first cavity and from the first cavity to the second cavity, wherein the insert is optionally partially generally spherical in shape, the insert being configured to provide support for the compression of the at least one rib when the insert is positioned in the first cavity, the storage sealing section being generally aligned with the first cavity and maintaining an expanded state by the insert being disposed within the first cavity, the insert applying outward radial pressure against an interior surface of the three-position plunger at a location radially inward of the storage sealing section, the expanded state providing a compressive force of the storage sealing section against the inner wall, the three-position plunger being reducible to a constricted state, wherein the compressive force against the inner wall is reduced or removed entirely by effectuating axial displacement of the insert from the first cavity to the second cavity upon application of force onto the three-position plunger in a direction toward the drug product, wherein the three-position plunger in the constricted state provides less compressive force against the sidewall than when in the expanded state, such that force needed to axially displace the three-position plunger in the constricted state is less than would be required to axially displace the three-position plunger in the expanded state, and wherein the liquid sealing section provides a liquid tight seal against the inner wall both when

the three-position plunger is in the expanded state and when the three-position plunger is in the constricted state.

2. The ~~three-position plunger~~prefilled syringe of claim 1, wherein the three-position plunger further ~~including~~ includes a connector body operably connected to the sleeve, wherein a portion of the connector body is positioned within the sleeve and is configured to provide support for compression of the sleeve against an inner surface of ~~a sidewall~~the inner wall of ~~a~~ the barrel.

3. The ~~three-position plunger~~prefilled syringe of claim 2, wherein the three-position plunger further ~~including~~ includes a plunger rod having a shaft configured to displace the insert from the first cavity to the second cavity when the shaft is displaced from a first position to a second position, wherein the plunger rod is operably connected to the connector body.

4. The ~~three-position plunger~~prefilled syringe of any preceding claim, wherein the three-position plunger further ~~including~~ includes a film coating or molded cap on at least a portion of the sleeve, optionally on a sidewall and a nose cone of the sleeve, wherein the film coating or molded cap has a lubricity that is greater than a lubricity of a material of a sidewall of the plunger, wherein the film coating or molded cap is optionally an inert fluoropolymer.

5. ~~A~~ The prefilled syringe ~~comprising a three-position plunger~~ of any preceding claim ~~disposed therein~~, wherein the syringe ~~being~~ is made form an injection moldable thermoplastic material, optionally COP or COC, and comprises ~~the syringe comprising~~ an organo-siloxane coating or layer, as a plunger-contacting surface, substantially without presence of a flowable lubricant.

6. The prefilled syringe of claim 5, wherein the organo-siloxane coating or layer is a pH protective coating, optionally as a top layer of a trilayer coating set.

7. The prefilled syringe of claims 5 or 6, ~~wherein the syringe is a prefilled syringe~~ comprising a drug product contained within a product containing area.

~~8. A prefilled syringe comprising a barrel having an inner wall and a drug product contained within a product containing area, the prefilled syringe further comprising a convertible plunger having an internal portion and a generally cylindrical exterior surface, wherein at least a portion of the exterior surface is maintained in an initial expanded state by a property of the internal portion, the expanded state providing a compressive force against the inner wall, the plunger being reducible to a constricted state wherein the compressive force against the inner wall is reduced or removed by an operation that is applied to the internal portion of the plunger to alter the property, wherein the convertible plunger provides a break loose force and glide force below 15 N, optionally below 10 N, optionally below 9 N, optionally below 8 N, optionally below 7 N, optionally below 6 N, optionally between about 2.5N and about 5.5 N, substantially without the presence of a flowable lubricant between the exterior surface of the convertible plunger and the inner wall of the barrel.~~

~~9. The prefilled syringe of claim 8, wherein the break loose force is less than 2N higher, optionally 1.5 N higher, optionally 1 N higher, optionally less than 1 N higher, than the glide force.~~

~~10. The prefilled syringe of claim 8 or 9, comprising an organo-siloxane coating or layer, as a plunger-contacting surface.~~

~~11. The prefilled syringe of any of claims 8 - 10, wherein the organo-siloxane coating or layer is a pH protective coating, optionally as a top layer of a trilayer coating set.~~

~~12. The prefilled syringe of any of claims 8-11, wherein the property is mechanically produced outward radial pressure provided by a solid compression material, wherein the operation comprises axially displacing the solid compression material within the internal portion of the plunger.~~

~~13. The prefilled syringe of claim 12, wherein the operation comprises axially displacing the solid compression material from a first cavity to a second cavity within the internal portion of the plunger.~~

~~14. The prefilled syringe of any of claims 8-13, wherein the convertible plunger provides a break loose force and glide force below 7 N and wherein the break loose force is less than 1.5 N higher than the glide force.~~

~~15. The prefilled syringe of any of claims 8-14, wherein the initial expanded state provides container closure integrity for the drug product over a desired shelf life, as demonstrated by a vacuum decay leak detection method.~~

~~16. The prefilled syringe of claim 15, wherein the initial expanded state provides sterility and optionally a gas barrier for the drug product over a desired shelf life.~~

~~17. The prefilled syringe of any of claims 8-16, wherein the syringe barrel is made from an injection moldable thermoplastic material, optionally COP or COC.~~

~~18. The prefilled syringe of any of claims 8-16, wherein the syringe barrel is made from glass.~~

~~19. The prefilled syringe of any of claims 8-18, wherein the convertible plunger is comprised of a sleeve, the sleeve including a film coating or molded cap on at least a portion of the sleeve, optionally on a sidewall and a nose cone of the sleeve, wherein the film coating or molded cap has a lubricity that is greater than a lubricity of a material of a sidewall of the plunger, wherein the film coating or molded cap is optionally an inert fluoropolymer.~~

~~20~~8. A method of assembling a syringe having a convertible plunger, the method comprising the steps of:

a. providing a syringe barrel which is optionally prefilled with an injection product, the syringe barrel having a plunger-insertion opening and an inner wall;

b. providing a three-position plunger comprising: a sleeve having an opening at a distal end thereof, a pre-load cavity proximal to and in communication with the opening, a first cavity proximal to and in communication with the pre-load cavity, a second cavity proximal to and in communication with the ~~pre-load~~first cavity, and at least one rib, the at least one rib being generally aligned with the first cavity,~~;~~ ~~and~~ the three-position plunger further

comprising an insert configured to be displaced from the pre-load cavity to the first cavity and from the first cavity to the second cavity, wherein the insert is optionally partially generally spherical in shape, the insert being configured to provide support for the compression of the at least one rib when the insert is positioned in the first cavity; and

c. inserting the three-position plunger into the plunger-insertion opening of the syringe barrel while the insert is disposed in the pre-load cavity, wherein any compressive force or radial pressure that the three-position plunger exerts against the inner wall is unaffected by disposal of the insert in the pre-load cavity, the method further comprising ~~and~~ advancing the insert from the pre-load cavity into the first cavity once the sleeve has been fully inserted into the barrel, the insert causing the rib to apply or increase compressive force against the inner wall, thus placing the three-position plunger in an expanded state.

9. The method of claim 8, wherein a narrowing transition region separates each cavity from an adjacent cavity so as to make each cavity a physically distinct compartment.

10. The method of claim 8, the sleeve having an external profile that is unaffected by disposal of the insert in the pre-load cavity.