CLAIMS

1. A coupler (100) for connecting to a port (200), the coupler (100) comprising:

a body (110) defining a radially outward facing surface (111), a radially inward facing surface (112), a proximal end (113), and a distal end (114);

a plunger needle (120) fixed to the body (110), the plunger needle (120) extending in parallel with the body (110) toward the distal end of the body (110); and

a threaded portion (130) extending circumferentially around at least a portion of the radially outward facing surface (111) of the body (110) toward the distal end (114) of the body (110), the threaded portion (130) configured to receive a threaded portion (220) of the port (220);

characterised in that the coupler (100) further comprises:

a first O-ring (140) on the radially inward facing surface (112), the first O-ring (140) being configured to create a seal with an outer surface (240) of the port (200).

2. The coupler (100) of claim 1, wherein the plunger needle (120) is: immovable relative to the body (110); and/or positioned approximately central to the body (110); and/or configured to compress a Schrader valve (210) of the port (200).

3. The coupler (100) of claim 2, wherein when the plunger needle (120) is configured to compress a Schrader valve (210) of the port (200) and when the plunger needle (120) compresses the Schrader valve (210) of the port (200), a channel (300) is created between the coupler (100) and the port (200), the channel (300) being configured to permit the flow of at least one fluid between the coupler (100) and the port (200); wherein the at least one fluid is optionally carbon dioxide (CO_2).

4. The coupler (100) of claim 1, 2 or 3, wherein the port (200) comprises a threaded portion (220) extending circumferentially around an inner surface (230) of the port (200) toward a distal end (250) of the port (200).

5. The coupler (100) of any preceding claims, further comprising a second O-ring (150) on the radially outward facing surface (111), the second O-ring (150) being configured to create a seal with a distal end (250) of the port (200).

6. A method for connecting a coupler (100) and a port (200) to allow the passage of at least one fluid, the coupler (100) comprising a body (110) defining a radially outward facing surface (111), a plunger needle (120) fixed to the body (110), and a threaded portion (130) extending circumferentially around at least a portion of the radially outward facing surface (111), the port (200) comprising a threaded portion (220) extending circumferentially around an inner surface (230) and a Schrader valve (210), the method comprising:

securing the threaded portion (130) of the coupler (100) to the threaded portion (220) of the port (200);

compressing the Schrader valve (210) of the port (200) with the plunger needle (120) of the coupler (100) to create a channel (300) between the coupler (100) and the port (200), the channel (300) being configured to permit the flow of the at least one fluid between the coupler (100) and the port (200); and

passing the at least one fluid from the coupler (100) to the port (200) through the channel (300);

characterised in that the coupler (100) further comprises a first O-ring (140) on a radially inward facing surface (112) of the body (110),

the first O-ring (140) being configured to create a seal with an outer surface (240) of the port (200).

7. The method of claim 6, wherein the plunger needle (120): is immovable relative to the body (110); and/or extends in parallel with the body toward a distal end (114) of the body (110); and/or is positioned approximately central to the inner surface (112) of the body (110).

8. The method of claim 6, wherein the seal prevents the leakage of the at least one fluid.

9. The method of any of claims 6, 7 or 8, wherein the coupler (100) comprises a second O-ring (150) on the radially outward facing surface (111), the second O-ring (150) configured to create a seal with a distal end (250) of the port (200).

10. The method of claim 9, wherein the seal prevents the leakage of the at least one fluid.

11. The method of any of claims 6-10, wherein the at least one fluid is carbon dioxide (CO_2).