CLAIMS

WHAT IS CLAIMED IS:

1. An electrotransport drug delivery device comprising an electrical module and a reservoir module, the electrical module and the reservoir module being configured to be combined to form a unitary, activated drug delivery device prior to use, wherein:

the electrical module comprises:

circuitry;

an electrical output adapted to connect the circuitry to an input connector on the reservoir module when the electrical module is combined with the reservoir module;

a power-on contact between the circuitry and the battery; and

a battery, which is adapted to be isolated from the circuitry by the power-on contact while the power-on contact remains open, and which is adapted to be connected into the circuitry when the power-on contact is closed by a battery contact actuator on the reservoir module when the electrical module and the reservoir module are combined; and

the reservoir module comprises:

an electrical input adapted to electrically connect the circuitry in the electrical module to at least a pair of active electrodes in the reservoir module when the electrical module is combined with the reservoir module; and

a battery contact actuator configured to close a corresponding power-on contact when the electrical module is combined with the drug reservoir, such that the battery is connected into the circuitry and the device is powered on.

2. The device of claim 1, wherein a seal is formed upon combining the electrical module and the reservoir module.

3. The device of claim 1 wherein, further comprising a seal sealing the power-on contact, the seal being configured to maintain the sealing when the power-on contact is closed by an actuator.

4. The device of claim 3, wherein the seal is a flexible polymer cover over the power-on contact, which is configured to be deformed by the actuator when the electrical module is

combined with the reservoir module, whereby the actuator mechanically acts through the seal to close the power-on contact.

5. The device of claim 1, further comprising a seal sealing the electrical output before, during, and after the electrical module is combined with the reservoir module.

6. The device of claim 2, wherein the seal is water- and/or particulate-tight.

7. The device of claim 1, wherein the electrical output is configured to flex while continuously applying a force on the electrical input of the reservoir module to ensure good electrical connection between the two.

8. The device of claim 7, wherein at least one surface of the electrical input is substantially planar.

9. The device of claim 1, wherein the electrical module and the reservoir module are configured to be combined to form a powered on drug delivery device.

10. The device of claim 1, further comprising a coupler on the reservoir module or the electrical module which couples with a corresponding coupler receptor on the electrical module or reservoir module, respectively, to prevent the unitary activated drug delivery device from being easily separated.

11. The device of claim 10, wherein the coupler is a snap mechanically biased to snap into a corresponding snap receptor.

12. The device of claim 11, wherein the snap is a one-way snap.

13. The device of claim 10, comprising two couplers and two corresponding coupler receptors.

14. The device of claim 13, wherein the couplers are of different sizes, whereby each coupler can be inserted only into its correspondingly sized coupler receptor , thereby ensuring that the device can be assembled in only one configuration.

15. The device of claim 10, wherein the coupler is biased so that once the coupler is engaged with its corresponding receptor, the device cannot be disassembled without breaking the coupler.

16. The device of claim 10, wherein the power-on contact is configured to be actuated by the battery contact actuator, thereby connecting the battery to the circuit simultaneously, or substantially simultaneously, with coupling of the coupler and the coupler receptor.

17. The device of claim 10, wherein a water- and/or particulate-tight seal is formed between the coupler and the coupler receptor when they are coupled.

18. The device of one of claims 1, wherein the battery contact actuator protrudes from the reservoir module and is adapted to depress a receptacle on the electrical module when the electrical module is combined with the reservoir module, the receptacle being in mechanical communication with the power-on contact such that the battery is connected into the circuit when the battery contact actuator depresses the receptacle.

19. The device of claim 18, wherein the receptacle is a deformable member.

20. The device of claim 19, wherein the deformable member is indented, flush or domed.

21. The device of claim 1, wherein the battery is housed in a compartment that protrudes from the electrical module, which compartment has an outer shape that is configured to a corresponding indentation in the reservoir module such that the battery compartment fits snugly within the indentation in only one configuration when the electrical module and the reservoir module are combined to form the unitary device.

22. The device of claim 1, further comprising a sealing member adapted to provide a seal around the electrical input and electrical output when the electrical module and the reservoir module are combined to form the unitary device.

23. The device of claim 1, wherein the reservoir module is sealed in a container configured to be removed prior to combining the electrical module with the reservoir module to form the unitary device.

24. The device of claim 23, wherein the container is a water- and/or particulate-tight pouch.

25. The device of claim 1, wherein the electrical module further comprises a controller.

26. The device of claim 25, wherein the controller is configured to execute a power-on check when the battery is connected into the circuitry.

27. The device of claim 1, wherein the device is configured to increment a logic flag when the electrical module is combined with the reservoir module, and wherein the device is configured such that, if the logic flag has met or exceeded a predetermined value, the device will either not power on or will power off if it has already powered on.

28. The device of claim 27, wherein the device is configured to record an error code if the logic flag has met or exceeded a predetermined value.

29. The device of claim 1, wherein the power-on contact is configured to remove the battery from the circuitry if the electrical module and the reservoir module are separated after they have been combined.

30. The device of claim 2, wherein the electrical module is configured to flex while maintaining the seal.

CLAIMS

WHAT IS CLAIMED IS:

1. A corrosion-resistant electrotransport drug delivery device comprising an electrical module and a reservoir module, the electrical module and the reservoir module configured to be combined to form a unitary, activated drug delivery device prior to use, wherein the device resists corrosion by electrically isolating a circuitry in the electrical module from a power source,
further wherein the electrical module comprises:

the circuitry;

an electrical output adapted to connect the circuitry to an input connector on the reservoir module when the electrical module is combined with the reservoir module; and

at least two power-on contacts between the circuitry and a battery;

wherein the battery is isolated from the circuitry by the power-on contacts while at least one of the power-on contacts remain open, and the battery is connected into the circuitry when all of the power-on contacts are closed by battery contact actuators on the reservoir module when the electrical module and the reservoir module are combined; and
wherein the reservoir module comprises:

an electrical input adapted to electrically connect the circuitry in the electrical module to at least a pair of active electrodes in the reservoir module when the electrical module is combined with the reservoir module; and

at least two battery contact actuators each configured to close a corresponding power-on contact when the electrical module is combined with the reservoir module so that the battery is connected into the circuitry and the device is powered on, wherein at least two battery contact actuators are separated from each other.

2. The device of claim 1, wherein a seal is formed upon combining the electrical module and the reservoir module.

3. The device of claim 1, further comprising a seal sealing each power-on contact before the modules are combined, each seal being configured to maintain the sealing when the power-on contact is closed by the battery contact actuator, wherein the seal is water- and/or particulate-tight.

4. The device of claim 3, wherein each seal is a flexible polymer cover over the power-on contact, which is configured to be deformed by the battery contact actuator when the electrical module is combined with the reservoir module, whereby the battery contact actuator mechanically acts through the seal to close the power-on contact.

5. The device of claim 1, further comprising a seal sealing the electrical output before, during, and after the electrical module is combined with the reservoir module.

6. The device of claim 2, wherein the seal is water- and/or particulate-tight.

7. The device of claim 1, wherein the electrical output is configured to flex while continuously applying a force on the electrical input of the reservoir module to ensure good electrical connection between the two.

8. The device of claim 7, wherein at least one surface of the electrical input is substantially planar.

9. The device of claim 1, further comprising a coupler on the reservoir module or the electrical module which couples with a corresponding coupler receptor on the electrical module or reservoir module, respectively, to prevent the unitary activated drug delivery device from being separated.

10. The device of claim 9, wherein the coupler is a snap mechanically biased to snap into a corresponding snap receptor.

11. The device of claim 10, wherein the snap is a one-way snap.

12. The device of claim 9, comprising two couplers and two corresponding coupler receptors.

13. The device of claim 12, wherein the couplers are of different sizes, whereby each coupler can be inserted only into its correspondingly sized coupler receptor , thereby ensuring that the device can be assembled in only one configuration.

14. The device of claim 9, wherein the coupler is biased so that once the coupler is engaged with its corresponding receptor, the device cannot be disassembled without breaking the coupler.

15. The device of claim 9, wherein a water- and/or particulate-tight seal is formed between the coupler and the coupler receptor when they are coupled.

16. The device of claim 1, wherein the battery contact actuators protrude from the reservoir module and are each adapted to depress a receptacle on the electrical module when the electrical module is combined with the reservoir module, the receptacles being in mechanical communication with the power-on contacts such that the battery is connected into the circuit when the battery contact actuators

depresses the receptacle.

17. The device of claim 16, wherein at least one receptacle is a deformable member.

18. The device of claim 17, wherein the deformable member is indented, flush or domed.

19. The device of claim 1, wherein the battery is housed in a compartment that protrudes from the electrical module, which compartment has an outer shape that is configured to a corresponding indentation in the reservoir module such that the battery compartment fits snugly within the indentation in only one configuration when the electrical module and the reservoir module are combined to form the unitary device.

20. The device of claim 1, further comprising a sealing member adapted to provide a seal around the electrical input and electrical output when the electrical module and the reservoir module are combined to form the unitary device.

21. The device of claim 1, wherein the electrical module further comprises a controller.

22. The device of claim 21, wherein the controller is configured to execute a power-on check when the battery is connected into the circuitry.

23. The device of claim 1, wherein the device is configured to increment a logic flag when the electrical module is combined with the reservoir module, and wherein the device is configured such that, if the logic flag has met or exceeded a predetermined value, the device will either not power on or will power off if it has already powered on.

24. The device of claim 23, wherein the device is configured to record an error code if the logic flag has met or exceeded a predetermined value.

25. The device of claim 1, wherein the power-on contact is configured to remove the battery from the circuitry if the electrical module and the reservoir module are separated after they have been combined.

26. The device of claim 2, wherein the electrical module is configured to flex while maintaining the seal.

27. The device of claim 1, wherein the battery contact actuators are separated from each other by at

least 0.5 cm.

28. A corrosion-resistant electrotransport drug delivery device comprising an electrical module and a reservoir module, the electrical module and the reservoir module configured to be combined to form a unitary, activated drug delivery device prior to use,
wherein the electrical module comprises:

circuitry;

a power-on counter comprising a logic flag configured to increment when the circuitry is powered on;

an electrical output adapted to connect the circuitry to an input connector on the reservoir module when the electrical module is combined with the reservoir module;

wherein the battery is isolated from the circuitry until the electrical module and the reservoir module are combined; and
wherein the reservoir module comprises:

an electrical input adapted to electrically connect the circuitry in the electrical module to at least a pair of active electrodes in the reservoir module when the electrical module is combined with the reservoir module;
wherein the circuitry powers the device off, or will not power the device on, if the number of counts in the power-on counter exceeds a predetermined value.

29. A corrosion-resistant electrotransport drug delivery device comprising an electrical module and a reservoir module, the electrical module and the reservoir module configured to be combined to form a unitary, activated drug delivery device prior to use, wherein the device resists corrosion by electrically isolating a circuitry in the electrical module from a power source,
further wherein the electrical module comprises:

the circuitry;

an electrical output adapted to connect the circuitry to an input connector on the reservoir module when the electrical module is combined with the reservoir module; and

one or more power-on contacts between the circuitry and a battery;

a first seal sealing the one or more power-on contacts before the modules are combined, the first seal being configured to maintain the sealing when the power-on contact is closed by an actuator, wherein the first seal is water- and/or particulate-tight;

a second seal sealing the electrical output before, during and after the electrical module is combined with the reservoir module;

wherein the battery is isolated from the circuitry by the one or more power-on contacts while the one or more power-on contacts remain open, and wherein the battery is connected into the

circuitry when the one or more power-on contacts is closed by one or more battery contact actuators on the reservoir module when the electrical module and the reservoir module are combined; and the reservoir module comprises:

an electrical input adapted to electrically connect the circuitry in the electrical module to at least a pair of active electrodes in the reservoir module when the electrical module is combined with the reservoir module; and

the one or more battery contact actuators configured to close a corresponding power-on contact when the electrical module is combined with the reservoir module, such that the battery is connected into the circuitry and the device is powered on.