

removal complicated, confusing, and can increase the likelihood of errors. It is therefore desirable to reduce the quantity of different variations of tubes and connectors that are inventoried and used at medical facilities.

SUMMARY

[0007a] According to an aspect of the present invention, there is provided a medical waste fluid collection system including: a lid provided with a first port and a second different port; and a connector configured to connect with the ports, the connector including: a main body extending along a primary axis and defining a lumen, the lumen extending between a lower mouth at a lower portion of the main body and an upper mouth at an upper portion of the main body; a first mating portion; and a second mating portion; wherein the first mating portion and the first port are configured to engage each other such that the lower mouth of the connector extends a predetermined distance into an interior of the medical waste fluid collection system when the connector is connected with the first port; and the second mating portion and the second port are configured to engage each other such that the lower mouth of the connector extends the same predetermined distance into the interior of the medical waste fluid collection system when the connector is connected with the second port, the second port being larger than the first port.

[0007b] Disclosed herein is a connector for connecting medical fluid containers, the connector including: a main body defining a conduit, the main body including an outer surface configured to seal with an inner surface of a first port of a container when the connector is connected with the first port; and an outer skirt wall connected with the main body and including a surface configured to seal with a mating surface of a second port of the container when the connector is connected with the second port, wherein the main body includes a conduit wall that extends into the interior of the container when the connector is connected with the first port and when the connector is connected with the second port.

[0008] Certain aspects of the present disclosure may include a connector that is suitable for connecting medical suction tubing with at least two different types of fluid ports in a medical fluid collection system. In certain aspects, the connector includes a generally cylindrical main body portion having an upper portion, a middle portion, and a lower portion. The main body portion includes a cylindrical outer surface extending generally parallel to a central longitudinal axis of the body portion, and an inner surface defining a primary conduit extending through the connector. At least one lateral closure wall extends radially outward from the main body portion. At least one annular skirt wall extends longitudinally from the at least one lateral closure wall, including a first annular skirt wall that serves to receive an open mouth of a first fluid port having a relatively small diameter, e.g., a diameter of about 15 mm, and a second annular skirt wall that serves to receive an open mouth of a second fluid port having a relatively larger diameter, e.g., a diameter of about 25 mm.

[0009] In certain aspects, an inner surface of the first annular skirt wall may be configured to engage an outer surface of a spout (also herein interchangeably referred as a port cone or port riser) of a first port in an interference fit such that the connector may be secured to the first port. Similarly, an inner surface of the second annular skirt wall may be configured to engage an outer surface of a spout of a second port. Alternatively, an outer surface of the second annular skirt wall may be configured to engage an inner surface of the spout of the second port. In various other aspects, an outer surface of the first annular skirt wall may be configured to engage an inner surface of the spout of the first port. It will be appreciated that the connector may be configured with any number of annular skirt walls, each of which may be configured to engage either an inner surface or an outer surface of a particular port's spout. In various other aspects, the connector may be configured such that one or more annular skirt walls are configured to engage an outer surface of a spout of a first port and an inner surface of a spout of a second port, the spout of the second port having a larger diameter than the spout of the first

Claims

1. A medical waste fluid collection system comprising:
 - a lid (300) provided with a first port and a second different port; and
 - a connector (100) configured to connect with the ports, the connector comprising:
 - a main body (102) extending along a primary axis and defining a lumen, the lumen extending between a lower mouth at a lower portion (108) of the main body (102) and an upper mouth at an upper portion (104) of the main body (102);
 - a first mating portion; and
 - a second mating portion;
 - wherein the first mating portion and the first port are configured to engage each other such that the lower mouth of the connector (100) extends a predetermined distance into an interior of the medical waste fluid collection system when the connector (100) is connected with the first port; and
 - the second mating portion and the second port are configured to engage each other such that the lower mouth of the connector (100) extends the same predetermined distance into the interior of the medical waste fluid collection system when the connector is connected with the second port,
 - the second port being larger than the first port.
2. The system of claim 1, the connector (100) further comprising a shoulder configured to restrict translation of the connector in at least one direction along the primary axis when the connector (100) is connected with either or each of the first port and the second port.
3. The system of claim 1, wherein the first mating portion of the connector (100) includes a first mating wall extending in a direction along the primary axis, the first mating wall configured to seal with the first port when the connector (100) is connected with the first port.
4. The system of claim 3, wherein the main body (102) of the connector (100) comprises the first mating wall.

5. The system of claim 3, the connector (100) further comprising a first closure wall extending in a direction transverse to the primary axis and coupling the first mating wall and the main body (102).
6. The system of claim 3, wherein the second mating portion of the connector (100) includes a second mating wall extending in a direction along the primary axis, the second mating wall configured to seal with the second port when the connector (100) is connected with the second port.
7. The system of claim 6, the connector (100) further comprising a second closure wall extending in a direction transverse to the primary axis and coupling the first mating wall and the second mating wall.
8. The system of claim 6, wherein an outer surface of the first mating wall of the connector (100) seals with the first port when the connector (100) is connected with the first port.
9. The system of claim 8, wherein an outer surface of the second mating wall of the connector (100) seals with the second port when the connector (100) is connected with the second port.
10. The system of claim 8, wherein an inner surface of the second mating wall of the connector (100) seals with the second port when the connector (100) is connected with the second port.
11. The system of claim 6, wherein an inner surface of the first mating wall of the connector (100) seals with the first port when the connector (100) is connected with the first port.
12. The system of claim 11, wherein an outer surface of the second mating wall of the connector (100) seals with the second port when the connector (100) is connected with the second port.

13. The system of claim 11, wherein an inner surface of the second mating wall of the connector (100) seals with the second port when the connector (100) is connected with the second port.

14. The system of claim 3, wherein both an outer surface of the main body of the connector (100) and an inner surface of the second mating wall of the connector (100) seal with the first port when the connector (100) is connected with the first port.