A cover for a photoresist container includes a cap assembly and a threaded connector. The cap assembly includes a mounting plate, a connecting base and a cover plate. The mounting plate has a bottom surface, a top surface and a central hole defined through the mounting plate. The connecting base is mounted in the central hole of the mounting plate and abuts the bottom surface of the mounting plate. The cover plate is mounted on the top surface of the mounting plate and is connected to the connecting base. The threaded connector is connected detachably to the mounting plate and has a passing hole defined through the threaded connector and having an inner thread. When the inner thread of the threaded connector is worn off or damaged, the threaded connector can be detached and replaced easily and conveniently.
COVER FOR A PHOTORESIST CONTAINER

BACKGROUND OF THE INVENTION

0001 1. Field of Invention
0002 The present invention relates to a cover, and more particularly to a cover for a photoresist container comprising a detachable threaded connector.
0003 2. Description of the Related Art
0004 With reference to FIG. 8, a conventional cover comprises a threaded cap (9), a dip tube (6), a reflux tube (7) and a forcing tube (8). The threaded cap (9) is an integral piece, has an inner thread and is mounted securely on a photore sist container by screwing to seal the photoresist container. The dip tube (6), the reflux tube (7) and the forcing tube (8) are mounted through the threaded cap (9).
0005 When the conventional cover is frequently twisted to open or close the photoresist container, the inner thread of the threaded cap (9) will be worn and damaged. Thus, the conventional cover must be replaced entirely. However, because other components of the threaded cap (9) are still usable, the entire replacement of the conventional cover is uneconomic and is not environmentally friendly.
0006 To overcome the shortcomings, the present invention provides a cover for a photore sist container to mitigate or obviate the aforementioned problems.

SUMMARY OF THE INVENTION

0007 The primary objective of the present invention is to provide a cover for a photoresist container that comprises a detachable threaded connector.
0008 A cover for a photore sist container in accordance with the present invention comprises a cap assembly and a threaded connector. The cap assembly includes a mounting plate, a connecting base and a cover plate. The mounting plate has a bottom surface, a top surface and a central hole defined through the mounting plate. The connecting base is mounted in the central hole of the mounting plate and abuts the bottom surface of the mounting plate. The cover plate is mounted on the top surface of the mounting plate and is connected to the connecting base. The threaded connector is connected detachably to the mounting plate and has a passing hole defined through the threaded connector and having an inner thread. When the inner thread of the threaded connector is worn off or damaged, the threaded connector can be detached and replaced easily and conveniently. Thus, the cover in accordance with the present invention needs not to be discarded entirely and is economical and environmentally friendly.
0009 Other objectives, advantages and novel features of the invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

0010 FIG. 1 is an exploded perspective view of a cover for a photoresist container in accordance with the present invention;
0011 FIG. 2 is an exploded perspective view of a cap assembly of the cover for a photoresist container in FIG. 1;
0012 FIG. 3 is a perspective view of the cap assembly of the cover for a photoresist container in FIG. 1;
0013 FIG. 4 is an exploded perspective view of the cap assembly and a threaded connector of the cover for a photoresist container in FIG. 1;
0014 FIG. 5 is a perspective view of the cap assembly and the threaded connector of the cover for a photoresist container in FIG. 1;
0015 FIG. 6 is a perspective view of the cover for a photoresist container in FIG. 1;
0016 FIG. 7 is an exploded perspective view of another embodiment of the cover for a photoresist container in accordance with the present invention; and
0017 FIG. 8 is a perspective view of a conventional cover for a photore sist container in accordance with the prior art.

DETAILED DESCRIPTION OF THE INVENTION

0018 With reference to FIGS. 1 to 4, a cover for a photore sist container in accordance with the present invention comprises a cap assembly (1), a threaded connector (2), a dip tube device (6), a reflux tube device (7) and a forcing tube device (8).
0019 The cap assembly (1) comprises a mounting plate (11), a connecting base (12) and a cover plate (13). The mounting plate (11) is round and has a bottom surface, a top surface, multiple mounting holes (111), multiple positioning holes (112), multiple detaching holes (113), multiple positioning pins (114), a central hole (115) and an annular recess (116). The mounting holes (111) are defined through the mounting plate (11) and may be countersunk. Preferably, six mounting holes (111) are implemented. The positioning holes (112) are defined through the mounting plate (11). Preferably, two positioning holes (112) are implemented and are disposed opposite each other along a diameter of the mounting plate (11). The detaching holes (113) are defined through the mounting plate (11). Preferably, two detaching holes (113) are implemented and are disposed opposite each other along a diameter of the mounting plate (11). The positioning pins (114) are mounted respectively in the positioning holes (112) and protrude from the bottom surface of the mounting plate (11). The central hole (115) is circular and is defined through the mounting plate (11). The annular recess (116) is defined in the bottom surface of the mounting plate (11) and is adjacent to the central hole (115).
0020 The connecting base (12) is round, is mounted in the central hole (115) of the mounting plate (11), abuts the bottom surface of the mounting plate (11) and has multiple fastening holes (121), multiple threaded bores (122) and an annular flange (123). The fastening holes (121) are threaded and are defined through the connecting base (121). Preferably, three fastening holes (121) are implemented. The threaded bores (122) are defined in the connecting base (12). Preferably, three threaded bores (12) are implemented and are disposed respectively between adjacent fastening holes (121). The annular flange (123) is held and engages the annular recess (116) of the mounting plate (11).
0021 The cover plate (13) is round, is mounted on the top surface of the mounting plate (11) and has multiple inserting holes (131), multiple through holes (132) and multiple connecting holes (133). The inserting holes (131) are defined through the cover plate (13) and respectively correspond to and are aligned with the fastening holes (121) of the connecting base (12). The through holes (132) are countersunk, are defined through the cover plate (13) and respectively correspond to and are aligned with the threaded bores (122) of the connecting base (12). The connecting bolts (133) are
mounted respectively through the through holes (132) and are screwed respectively into the threaded bores (122) of the connecting base (12). Thus, the cover plate (13) is connected to the connecting base (12) and the mounting plate (11) is squeezed between the cover plate (13) and the connecting base (12).

[0022] With further reference to FIGS. 4 and 5, the threaded connector (2) is circular, is connected detachably to the cap assembly (1) and has a passing hole (21), multiple threaded bores (22), multiple positioning bores (23) and multiple fastening bolts (24). The passing hole (21) is defined through the threaded connector (2), is disposed around the inserting holes (131) of the cover plate (13) and has an inner thread (211). The threaded bores (22) are defined in the threaded connector (2) and respectively correspond to and are aligned with the mounting holes (111) of the mounting plate (11). The positioning bores (23) are defined in the threaded connector (2), are aligned respectively with the positioning holes (112) of the mounting plate (11) and respectively engage the positioning pins (114) of the mounting plate (11). The fastening bolts (24) are mounted respectively through the mounting holes (111) of the mounting plate (11) and are screwed respectively into the threaded bores (22) to combine the mounting plate (11) and the threaded connector (2) together.

[0023] With further reference to FIG. 6, the dip tube device (6) is mounted through the cover plate (13) and the connecting base (12) and comprises a dip tube (61), a lower connector (62), an upper connector (63) and a check valve (64). The dip tube (61) is mounted through one of the inserting holes (131) of the cover plate (13) and a corresponding fastening hole (121) of the connecting base (12) and may extend into a photoresist container containing liquid. The lower connector (62) is mounted on the dip tube (61) and is screwed into the corresponding fastening hole (121). The upper connector (63) is mounted on the dip tube (61) and may be connected to a supply pipe. The check valve (64) is mounted in the dip tube (61) to prevent liquid from flowing backwards. Thus, the dip tube (61) can draw and deliver liquid to the supply pipe.

[0024] The reflux tube device (7) is mounted through the cover plate (13) and the connecting base (12) and comprises a reflux tube (71), a lower connector (72) and an upper connector (73). The reflux tube (71) is mounted through one of the other two inserting holes (131) of the cover plate (13) and a corresponding fastening hole (121) of the connecting base (12) and may extend into a photoresist container containing liquid. The lower connector (72) is mounted on the reflux tube (71) and is screwed into the corresponding fastening hole (121). The upper connector (73) is mounted on the reflux tube (71). Thus, overflowing liquid can be collected and delivered to the photoresist container through the reflux tube (71).

[0025] The forcing tube device (8) is mounted through the cover plate (13) and the connecting base (12) and comprises a forcing tube (81), a lower connector (82) and an upper connector (83). The forcing tube (81) is mounted through the last inserting hole (131) of the cover plate (13) and a corresponding fastening hole (121) of the connecting base (12) and may extend into the photoresist container containing liquid. The lower connector (82) is mounted on the forcing tube (81) and is screwed into the corresponding fastening hole (121). The upper connector (83) is mounted on the forcing tube (81) and may be connected to a high pressure gas supply. When high pressure gas is provided into the photoresist container through the forcing tube (81), a pressure in the photoresist container is raised and forces liquid to flow into the dip tube (61).

[0026] When the inner thread (211) of the threaded connector (2) is worn off or damaged, the threaded connector (2) can be replaced easily and conveniently because the threaded connector (2) is connected detachably to the cap assembly (1). Thus, the cover in accordance with the present invention need not to be discarded entirely and is economical and environmentally friendly.

[0027] A damaged threaded connector (2) is detached and replaced by the following steps:

[0028] 1. The fastening bolts (24) are unscrewed to release the damaged threaded connector (2).

[0029] 2. Two detaching pins are inserted into the detaching holes (113) of the mounting plate (11) to push the damaged threaded connector (2) away from the mounting plate (11).

[0030] 3. A new threaded connector (2) is placed below the mounting plate (11).

[0031] 4. The positioning bores (23) of the new threaded connector (2) are respectively aligned with and engage the positioning pins (114) of the mounting plate (11). The new threaded connector (2) is forced to join to the mounting plate (11).

[0032] 5. The fastening bolts (24) are mounted through the mounting holes (111) of the mounting plate (11) and are screwed into the threaded bores (22) to combine the mounting plate (11) and the threaded connector (2) together.

[0033] With reference to FIG. 7, the threaded connector (2A) can be any suitable size so as to be connected to various photoresist containers of different sizes.

[0034] Even though numerous characteristics and advantages of the present invention have been set forth in the foregoing description, together with details of the structure and function of the invention, the disclosure is illustrative only. Changes may be made in detail, especially in matters of shape, size and arrangement of parts within the principles of the invention to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.

What is claimed is:

1. A cover for a photoresist container comprising a cap assembly comprising:
   a mounting plate having
   a bottom surface;
   a top surface; and
   a central hole being defined through the mounting plate;
   a connecting base being mounted in the central hole of the mounting plate and abutting the bottom surface of the mounting plate;
   and
   a cover plate being mounted on the top surface of the mounting plate and being connected to the connecting base; and
   a threaded connector being connected detachably to the mounting plate and having a passing hole defined through the threaded connector and having an inner thread.

2. The cover for a photoresist container as claimed in claim 1 wherein the mounting plate has multiple mounting holes defined through the mounting plate; and
the threaded connector has
   multiple threaded bores being defined in the threaded
   connector and respectively corresponding to and
   aligned with the mounting holes of the mounting
   plate; and
   multiple fastening bolts being mounted through the
   mounting holes of the mounting plate and being
   screwed into the threaded bores of the threaded bores.

3. The cover for a photoresist container as claimed in claim

2, wherein
   the mounting plate further has an annular recess defined in
   the bottom surface of the mounting plate and being
   adjacent to the central hole; and
   the connecting base further has an annular flange held in
   and engaging the annular recess of the mounting plate.

4. The cover for a photoresist container as claimed in claim

3, wherein
   the connecting base further has multiple threaded bores
   defined in the connecting base; and
   the cover plate further has
   multiple through holes being defined through the cover
   plate and respectively corresponding to and being
   aligned with the threaded bores of the connecting
   base; and
   multiple connecting bolts being mounted respectively
   through the through holes and being screwed respectivly
   into the threaded bores of the connecting base.

5. The cover for a photoresist container as claimed in claim

4, wherein
   the mounting plate further has
   multiple positioning holes being defined through the
   mounting plate; and
   multiple positioning pins being mounted respectively in
   the positioning holes and protruding from the bottom
   surface of the mounting plate; and
   the threaded connector further has multiple positioning
   bores defined in the threaded connector, aligned respectivly
   with the positioning holes of the mounting plate and
   respectively engaging the positioning pins of the
   mounting plate.

6. The cover for a photoresist container as claimed in claim

5, wherein
   the mounting plate further has multiple detaching holes
   defined through the mounting plate.

7. The cover for a photoresist container as claimed in claim

1, wherein
   the mounting plate further has an annular recess defined in
   the bottom surface of the mounting plate and being
   adjacent to the central hole; and
   the connecting base further has an annular flange held in
   and engaging the annular recess of the mounting plate.

8. The cover for a photoresist container as claimed in claim

1, wherein
   the connecting base further has multiple threaded bores
   defined in the connecting base; and
   the cover plate further has
   multiple through holes being defined through the cover
   plate and respectively corresponding to and being
   aligned with the threaded bores of the connecting
   base; and
   multiple connecting bolts being mounted respectively
   through the through holes and being screwed respectivly
   into the threaded bores of the connecting base.

9. The cover for a photoresist container as claimed in claim

1, wherein
   the mounting plate further has
   multiple positioning holes being defined through the
   mounting plate; and
   multiple positioning pins being mounted respectively in
   the positioning holes and protruding from the bottom
   surface of the mounting plate; and
   the threaded connector further has multiple positioning
   bores defined in the threaded connector, aligned respectivly
   with the positioning holes of the mounting plate and
   respectively engaging the positioning pins of the
   mounting plate.

10. The cover for a photoresist container as claimed in claim

1, wherein
   the mounting plate further has multiple detaching holes
   defined through the mounting plate.

   * * * * *