

WHAT IS CLAIMED IS:

1. A method of purifying an organic solvent, comprising:
passing the organic solvent through a first filter unit and a second filter unit
5 downstream of the first filter unit to obtain a purified organic solvent,
wherein the first filter unit comprises a first housing and at least one first filter in
the first housing, and the first filter comprises a filtration medium having a first average
pore size;
wherein the second filter unit comprises a second housing and at least two
10 second filters in the second housing, the at least two second filters are arranged in the
second housing in parallel, and each of the second filters independently comprises a
filtration medium having a second average pore size; and
wherein the number of the first filter in the first filter unit is smaller than the
number of the second filters in the second filter unit, and the first average pore size is
15 larger than the second average pore size.
2. The method of claim 1, wherein the first filter unit comprises one first filter.
3. The method of claim 1, wherein the filtration medium in the first filter
20 comprises polypropylene, high density polyethylene, ultra high molecular weight
polyethylene, nylon, polytetrafluoroethylene, or a perfluoroalkoxy alkane polymer.
4. The method of claim 1, wherein the first average pore size is from about
50 nm to about 200 nm.
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5. The method of claim 1, wherein the second filter unit comprises two or
three second filters.
6. The method of claim 1, wherein the filtration medium in the second filter
30 comprises polypropylene, high density polyethylene, ultra high molecular weight
polyethylene, nylon, polytetrafluoroethylene, or a perfluoroalkoxy alkane polymer.

7. The method of claim 1, wherein the second average pore size is from about 10 nm to about 50 nm.

5 8. The method of claim 1, further comprising passing the organic solvent through a third filter unit disposed between the first and second filter units, wherein the third filter unit comprises a third housing and at least one third filter in the third housing, the third filter comprises a filtration medium having a third average pore size, and the filtration medium in the third filter comprises an ion exchange membrane.

10 9. The method of claim 8, wherein the third filter unit comprises one to three third filters.

15 10. The method of claim 8, wherein the ion exchange membrane in the third filter comprises polypropylene, high density polyethylene, ultra high molecular weight polyethylene, nylon, polytetrafluoroethylene, or a perfluoroalkoxy alkane polymer.

20 11. The method of claim 1, further comprising passing the organic solvent exiting the second filter unit to a storage tank.

12. The method of claim 11, further comprising recirculating the organic solvent by moving the organic solvent from the storage tank to the first filter unit and passing the organic solvent through the first and second filter units.

25 13. The method of claim 1, further comprising passing the organic solvent through a fourth filter unit disposed downstream of the second filter unit, wherein the fourth filter unit comprises a fourth housing and at least two fourth filters in the fourth housing, the at least two fourth filters are arranged in the fourth housing in parallel, and each of the fourth filters independently comprises a filtration medium having a fourth
30 average pore size.

14. The method of claim 13, wherein the number of the second filters in the second filter unit is smaller than the number of the fourth filter in the fourth filter unit.

15. The method of claim 13, wherein the fourth filter unit comprises 4 to 14 fourth filters.

16. The method of claim 13, wherein the fourth average pore size is smaller than the second average pore size.

17. The method of claim 13, wherein the fourth average pore size is at most about 10 nm.

18. The method of claim 13, wherein the filtration medium in the fourth filter comprises polypropylene, high density polyethylene, ultra high molecular weight polyethylene, nylon, polytetrafluoroethylene, or a perfluoroalkoxy alkane polymer.

19. The method of claim 13, further comprising recirculating the organic solvent by moving the organic solvent exiting the fourth filter unit to the storage tank and subsequently passing the organic solvent through the fourth filter unit.

20. The method of claim 13, further comprising moving the purified solvent to a packaging station disposed downstream of the fourth filter unit.

21. The method of claim 1, wherein the organic solvent comprises cyclohexanone, ethyl lactate, n-butyl acetate, propylene glycol monomethyl ether, propylene glycol monomethyl ether acetate, 4-methyl-2-pentanol, or propylene carbonate.

22. The method of claim 1, wherein passing an organic solvent is performed at a flow rate of from about 25 to about 170 L/min.

23. A system, comprising:

a first filter unit, wherein the first filter unit comprises a first housing and at least one first filter in the first housing, and the first filter comprises a filtration medium having a first average pore size; and

5 a second filter unit downstream of and in fluid communication with the first filter unit, wherein the second filter unit comprises a second housing and at least two second filters in the second housing, the at least two second filters are arranged in the second housing in parallel, and each of the second filters independently comprises a filtration medium having a second average pore size;

10 wherein the number of the first filter in the first filter unit is smaller than the number of the second filters in the second filter unit, and the first average pore size is larger than the second average pore size.