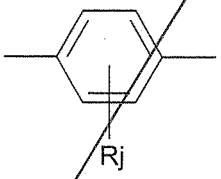
# CLAIMS

1. A membrane comprising a polymer or a polymer composition wherein said polymer is a poly(arylethersulfone)polymer comprising recurring units derived from at least one aromatic dihalo monomer comprising at least one –$S(=O)_2$– group or a polycarbonate polymer comprising recurring units derived from a carbonate compound selected from the groups consisting of a carbonyl halide, a carbonate ester and a haloformate ; and an aromatic diol (D) having general formula (III)

HO- $Ar^1$-Q-$Ar^2$-OH (III)

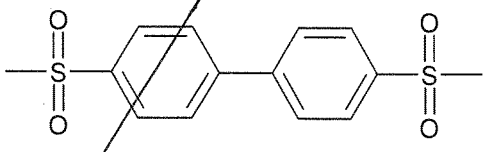
wherein $Ar^1$, $Ar^2$ are equal or different from each other and are aromatic moieties of the formula :



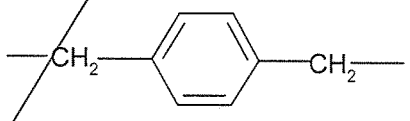

wherein R is selected from the group consisting of :

hydrogen, halogen, alkyl, alkenyl, alkynyl, aryl, ether, thioether, carboxylic acid, ester, amide, imide, alkali or alkaline earth metal sulfonate, alkyl sulfonate, alkali or alkaline earth metal phosphonate, alkyl phosphonate, amine and quaternary ammonium and j is 0, 1, 2, 3 or 4.

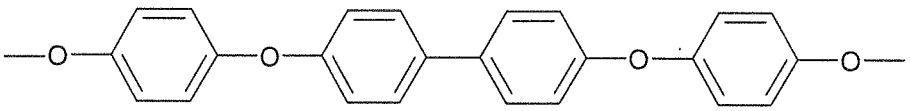
wherein Q is a group chosen among the following structures (Q-1), (Q-2), (Q-3), (Q-4), (Q-5), (Q-6) and (Q-7) :



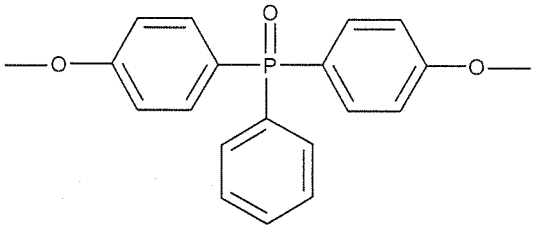

, (Q-1)




, (Q-2)



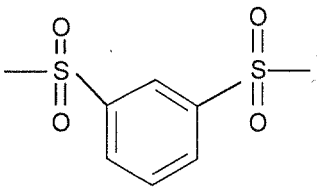
(Q-3)



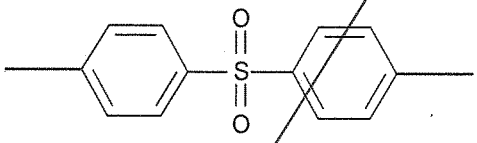
(Q-4)

$-O-(CR_1R_2-CR_3R_4-O)_n-$, (Q-5)

in which $R_1$, $R_2$, $R_3$, and $R_4$ equal to or different from each other, are independently selected from H, an alkyl group having from 1 to 10 carbon atoms which is optionally substituted by at least one halogen atom, an aralkyl group or an aryl group ; n is 0, 1, 2, 3, 4, 5 or 6 ;



(Q-6)



(Q-7)

and wherein the polymer composition is comprising said poly(arylethersulfone)polymer or said polycarbonate polymer and at least one other ingredient.

2. The membrane according to claim 1, characterized in that the membrane is selected from the group consisting of isotropic or anisotropic membranes, porous or non-porous membranes, composite membranes, or symmetric or non-symmetric membranes.

3. The membrane according to anyone of claims 1 or 2, characterized in that the membrane is in the form of flat structures, corrugated structures, tubular structures or hollow fibers.

4. The membrane according to anyone of claims 1 to 3 wherein the polymer composition is a dope solution.

5. A method for the manufacturing of the membrane according to anyone of claims 1 to 4 wherein said method is chosen from a solution casting or a solution spinning method.

6. A method for purifying water, comprising using the membrane according to any one of claims 1 to 4.

7. A method for treating wastewaters comprising using the membrane according to any one of claims 1 to 4.

8. A method for producing pharmaceuticals comprising using the membrane according to any one of claims 1 to 4.

9. A method for purifying blood, comprising using the membrane according to any one of claims 1 to 4.

10. The method according to claim 9, said method being a hemodialysis method.

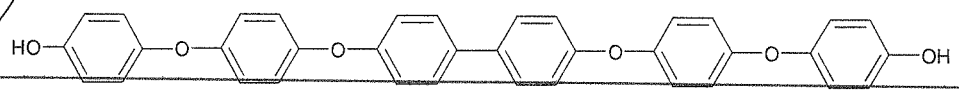
11. A method for effecting separation in industrial processes, comprising using the membrane according to any one of claims 1 to 4.

12. The method according to claim 11, said method comprising effecting separation in food and beverage processing.

13. The method according to claim 11, said method comprising effecting separation in electropaint recovery.

14. The method according to claim 11, said method comprising effecting separation in gas separation.

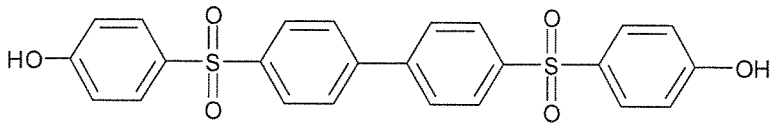
15. An aromatic diol (D) according to formula (D-3) :



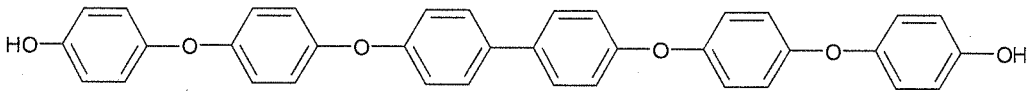

(D-3).

# CLAIMS

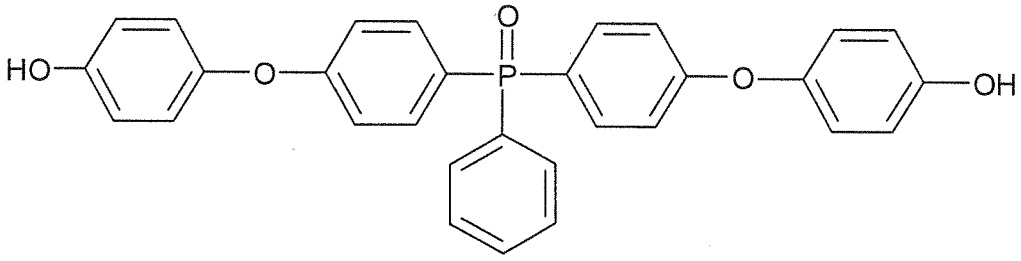
1. A membrane comprising a polymer or a polymer composition wherein said polymer is a poly(arylethersulfone)polymer comprising recurring units derived from 4,4'-dihalodiphenylsulfone and an aromatic diol (D); or a polycarbonate polymer comprising recurring units derived from a carbonate compound selected from the groups consisting of a carbonyl halide, a carbonate ester and a haloformate and an aromatic diol (D), wherein said aromatic diol (D) is selected from the group consisting of:



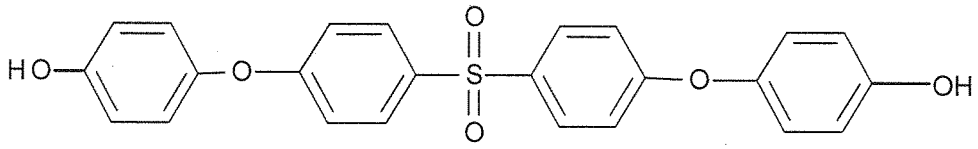
(D-1);



(D-3);



(D-4); and



(D-7);

and wherein the polymer composition is comprising said poly(arylethersulfone)polymer or said polycarbonate polymer and at least one other ingredient.

2. The membrane according to claim 1, characterized in that the membrane is selected from the group consisting of isotropic or anisotropic membranes, porous or non-porous membranes, composite membranes, or symmetric or non-symmetric membranes.

3. The membrane according to anyone of claims 1 or 2, characterized in that the membrane is in the form of flat structures, corrugated structures, tubular structures or hollow fibers.

4. The membrane according to anyone of claims 1 to 3 wherein the polymer composition is a dope solution.

5. A method for the manufacturing of the membrane according to anyone of claims 1 to 4 wherein said method is chosen from a solution casting or a solution spinning method.

6. A method for purifying water, comprising using the membrane according to any one of claims 1 to 4.

7. A method for treating wastewaters comprising using the membrane according to any one of claims 1 to 4.

8. A method for producing pharmaceuticals comprising using the membrane according to any one of claims 1 to 4.

9. A method for purifying blood, comprising using the membrane according to any one of claims 1 to 4.

10. The method according to claim 9, said method being a hemodialysis method.

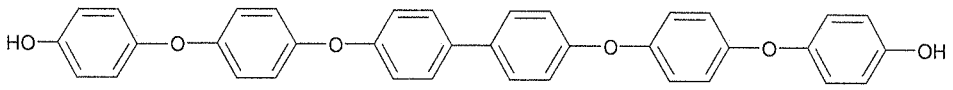
11. A method for effecting separation in industrial processes, comprising using the membrane according to any one of claims 1 to 4.

12. The method according to claim 11, said method comprising effecting separation in food and beverage processing.

13. The method according to claim 11, said method comprising effecting separation in electropaint recovery.

14. The method according to claim 11, said method comprising effecting separation in gas separation.

15. An aromatic diol (D) according to formula (D-3) :




(D-3).