CLAIMS

1. A method for producing an aqueous dispersion of purified polytetrafluoroethylene, the method comprising: removing or reducing a compound represented by Formula (1) below from an aqueous dispersion of polytetrafluoroethylene obtained by a production method including performing emulsion polymerization of tetrafluoroethylene in an aqueous medium in the presence of an anionic hydrocarbon surfactant:

Formula (1): $(H-(CF_2)_m-COO)_pM^1$

wherein m is 3 to 19, M^1 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and p is 1 or 2.

2. The method for producing an aqueous dispersion of purified polytetrafluoroethylene according to claim 1, wherein the removal or reduction of a compound represented by Formula (1) above comprises ion-exchanging and/or concentrating the aqueous dispersion of polytetrafluoroethylene.

3. A method for producing powder of refined polytetrafluoroethylene, the method comprising: removing or reducing a compound represented by Formula (1) below from non melt-processible and fibrillatable polytetrafluoroethylene powder obtained by a production method including performing emulsion polymerization of tetrafluoroethylene in an aqueous medium in the presence of an anionic hydrocarbon surfactant,

wherein the removal or reduction of a compound represented by Formula (1) above comprises heating the polytetrafluoroethylene powder at a temperature of 200°C or more:

Formula (1): $(H-(CF_2)_m-COO)_pM^1$

wherein m is 3 to 19, M^1 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and p is 1 or 2.

4. A method for producing a molded body of polytetrafluoroethylene from non melt-processible and fibrillatable polytetrafluoroethylene obtained by a production method including performing emulsion polymerization of tetrafluoroethylene in an aqueous

medium in the presence of an anionic hydrocarbon surfactant, the method comprising:

removing or reducing a compound represented by Formula (1) below,

wherein the removal or reduction of a compound represented by Formula (1) above comprises heating at a temperature of 200°C or more:

Formula (1): $(H-(CF_2)_m-COO)_pM^1$

wherein m is 3 to 19, M^1 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and p is 1 or 2.

5. A method for producing refined polytetrafluoroethylene, the method comprising: removing or reducing a compound represented by Formula (1) below by bringing a fluorine radical source into contact with non melt-processible and fibrillatable polytetrafluoroethylene at a temperature over 100°C, the polytetrafluoroethylene being obtained by a production method including performing emulsion polymerization of tetrafluoroethylene in an aqueous medium in the presence of an anionic hydrocarbon surfactant:

Formula (1): $(H-(CF_2)_m-COO)_pM^1$

wherein m is 3 to 19, M^1 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and p is 1 or 2.

6. A method for producing polytetrafluoroethylene, the method comprising: removing or reducing a compound represented by Formula (1) below by bringing a fluorine radical source into contact with non melt-processible and fibrillatable polytetrafluoroethylene obtained by a production method including performing emulsion polymerization of tetrafluoroethylene in an aqueous medium in the presence of an anionic hydrocarbon surfactant, wherein the amount of the fluorine radical source added is 0.5 parts by weight or more per 100 parts by weight of polytetrafluoroethylene in terms of fluorine atoms:

Formula (1): $(H\text{-}(CF_2)_m\text{-}COO)_pM^1$

wherein m is 3 to 19, M^1 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent,

or a phosphonium optionally having a substituent, and p is 1 or 2

7. A composition, comprising:
polytetrafluoroethylene, and
a compound represented by Formula (5) below in an amount of 1000 ppb or less with respect to polytetrafluoroethylene; and a nonionic surfactant in an amount of 1%/polytetrafluoroethylene or more;
wherein the content of a compound represented by Formula (3) below is 1000 ppb or less with respect to polytetrafluoroethylene:

Formula (3): $(H-(CF_2)_8-SO_3)_qM^2$

wherein M^2 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and q is 1 or 2;

Formula (5): $(H-(CF_2)_{13}-COO)_pM^1$

wherein M^1 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium

optionally having a substituent, or a phosphonium optionally having a substituent, and p is 1 or 2.

8. A compiosition, comprising:

polytetrafluoroethylene, and

at least any one of a compound represented by Formula (5) below and a compound represented by Formula (5') below, wherein the content of the compound represented by Formula (5) below is 1000 ppb or less with respect to polytetrafluoroethylene, and the content of the compound represented by Formula (5') below is 1000 ppb or less with respect to polytetrafluoroethylene; and

a nonionic surfactant in an amount of 1%/polytetrafluoroethylene or more;

wherein the content of a compound represented by Formula (3) below is 1000 ppb or less with respect to polytetrafluoroethylene:

Formula (3): $(H-(CF_2)_8-SO_3)_qM^2$

wherein M^2 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and q is 1 or 2;

Formula (5): $(H-(CF_2)_{13}-COO)_pM^1$

wherein M^1 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H

or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and p is 1 or 2; and

Formula (5'): $(H-(CF_2)_{14}-COO)_pM^1$

wherein M^1 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and p is 1 or 2.

9. The composition according to any one of claims7 or 8, being an aqueous dispersion.

10. A composition, comprising:

non melt-processible and fibrillatable polytetrafluoroethylene, and

a compound represented by Formula (5) below in an amount of 1000 ppb or less with respect to polytetrafluoroethylene;

wherein the content of a compound represented by Formula (3) below is 1000 ppb or less with respect to polytetrafluoroethylene:

Formula (3): $(H-(CF_2)_8-SO_3)_qM^2$

wherein M^2 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and q is 1 or 2;

Formula (5): $(H-(CF_2)_{13}-COO)_pM^1$

wherein M^1 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and p is 1 or 2.

11. A composition, comprising:

non melt-processible and fibrillatable polytetrafluoroethylene, and

at least any one of a compound represented by Formula (5) below and a compound represented by Formula (5') below, wherein the content of the compound represented by Formula (5) below is 1000 ppb or less with respect to polytetrafluoroethylene, and the content of the compound represented by Formula (5') below is 1000 ppb or less with respect to polytetrafluoroethylene;

wherein the content of a compound represented by Formula (3) below is 1000 ppb or less with respect to polytetrafluoroethylene:

Formula (3): $(H-(CF_2)_8-SO_3)_qM^2$

wherein M^2 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and q is 1 or 2;

Formula (5): $(H-(CF_2)_{13}-COO)_pM^1$

wherein M^1 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and p is 1 or 2; and

Formula (5'): $(H-(CF_2)_{14}-COO)_pM^1$

wherein M^1 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and p is 1 or 2.

12. A composition, comprising:

non melt-processible and fibrillatable polytetrafluoroethylene, and

a compound represented by Formula (5) below in an amount of 25 ppb or less with respect to polytetrafluoroethylene;

wherein the content of a compound represented by Formula (3) below is 1000 ppb or less with respect to polytetrafluoroethylene:

Formula (3): $(H-(CF_2)_8-SO_3)_qM^2$

wherein M^2 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and q is 1 or 2;

Formula (5): $(H-(CF_2)_{13}-COO)_pM^1$

wherein M^1 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and p is 1 or 2.

13. A composition, comprising:

non melt-processible and fibrillatable polytetrafluoroethylene, and

at least any one of a compound represented by Formula (5) below and a compound represented by Formula (5') below, wherein the content of the compound

represented by Formula (5) below is 25 ppb or less with respect to polytetrafluoroethylene, and the content of the compound represented by Formula (5') below is 25 ppb or less with respect to polytetrafluoroethylene;

wherein the content of a compound represented by Formula (3) below is 1000 ppb or less with respect to polytetrafluoroethylene:

Formula (3): $(H-(CF_2)_8-SO_3)_qM^2$

wherein M^2 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and q is 1 or 2;

Formula (5): $(H-(CF_2)_{13}-COO)_pM^1$

wherein M^1 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and p is 1 or 2; and

Formula (5'): $(H-(CF_2)_{14}-COO)_pM^1$

wherein M^1 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium

optionally having a substituent, or a phosphonium optionally having a substituent, and p is 1 or 2.

14. The composition according to any one of claims 10 to 13, further comprising a compound represented by Formula (7) below in an amount of 1000 ppb or less with respect to polytetrafluoroethylene:

Formula (7): $(F-(CF_2)_7-COO)_pM^1$

wherein M^1 is H, a metal atom, NR^5_4 (where R^5s may be the same as or different from each other and are each H or an organic group having 1 to 10 carbon atoms), an imidazolium optionally having a substituent, a pyridinium optionally having a substituent, or a phosphonium optionally having a substituent, and p is 1 or 2.

15. The composition according to any one of claims 7 to 14, wherein the content of the compound represented by Formula (3) is 25 ppb or less with respect to polytetrafluoroethylene.

16. The composition according to any one of claims 7 to 15, wherein

the polytetrafluoroethylene is obtained by polymerization using an anionic hydrocarbon surfactant.

17. The composition according to any one of claims 10 to 16, being powder.

18. A molded body comprising the composition according to claim 17.

19. The molded body according to claim 18, being a stretched body.