CLAIMS

1. A nonwoven fabric substrate for wiping sheet in which ridges and grooves are alternately formed at positions corresponding to each other on each of both surfaces, and apertures penetrating the grooves of both surfaces are formed,

wherein the ridges and the grooves extend parallel to each other, and extend in a direction intersecting with each of a pair of both sides extending in parallel of the nonwoven fabric substrate for wiping sheet,

in planar view, each of the grooves alternately includes an aperture portion which has a plurality of the apertures, and a non-aperture portion which has no aperture and is longer than a distance between the nearest end portions of the adjacent apertures in the aperture portion, and an arrangement pattern of the aperture portions and the non-aperture portions provided in the grooves is different from an arrangement pattern of the aperture portions and the non-aperture portions provided in the grooves adjacent to the grooves,

when a whole of the nonwoven fabric substrate for wiping sheet is seen in planar view, the nonwoven fabric substrate for wiping sheet includes an aperture region formed by the aperture portions of the plurality of grooves, and a non-aperture region formed by the non-aperture portions of the plurality of grooves, and

each of the aperture region and the non-aperture region is arranged in a predetermined pattern.

2. The nonwoven fabric substrate for wiping sheet according to claim 1,

wherein each of the aperture region and the non-aperture region is arranged in a pattern in which each of an extending direction of the aperture region and an extending direction of the non-aperture region intersects with the extending direction of each of the ridges and the grooves.

3. The nonwoven fabric substrate for wiping sheet according to claim 1 or 2,

wherein the apertures are formed by dividing and rearranging constituent fibers of the nonwoven fabric substrate.

4. The nonwoven fabric substrate for wiping sheet according to any one of claims

1 to 3,

wherein the aperture regions are arranged in a pattern in which a particular shape is periodically repeated in the extending direction of the aperture regions.

5. The nonwoven fabric substrate for wiping sheet according to any one of claims 1 to 4, wherein the aperture regions are arranged in a pattern in which a particular shape of a diamond shape or a V shape is periodically repeated in the extending direction of the aperture region.

6. The nonwoven fabric substrate for wiping sheet according to any one of claims 1 to 5,

wherein the non-aperture regions are arranged in a pattern in which a particular shape is periodically repeated in the extending direction of the non-aperture regions.

7. The nonwoven fabric substrate for wiping sheet according to any one of claims 1 to 6, wherein the non-aperture regions are arranged in a pattern in which a particular shape of a V shape is periodically repeated in the extending direction of the non-aperture region.

8. The nonwoven fabric substrate for wiping sheet according to any one of claims 1 to 7,

wherein the aperture regions are arranged in a pattern in which a particular shape is periodically repeated in the extending direction of the aperture regions, and

the aperture regions are repeatedly arranged with the non-aperture region interposed therebetween in a direction orthogonal to the extending direction of the aperture regions, and a period of the particular shape in the adjacent aperture regions having the particular shape is shifted by a half pitch.

9. The nonwoven fabric substrate for wiping sheet according to any one of claims 1 to 8, wherein the aperture regions are arranged in a pattern in which a particular shape of a diamond shape or a V shape is periodically repeated in the extending direction of the aperture regions, and

the aperture regions are repeatedly arranged with the non-aperture region

interposed therebetween in a direction orthogonal to the extending direction of the aperture regions, and a period of the particular shape in the adjacent aperture regions having the same particular shape is shifted by a half pitch.

10. The nonwoven fabric substrate for wiping sheet according to any one of claims 1 to 9,

wherein the non-aperture regions are arranged in a pattern in which a particular shape is periodically repeated in the extending direction of the non-aperture regions, and

the non-aperture regions are repeatedly arranged with the aperture region interposed therebetween in a direction orthogonal to the extending direction of the non-aperture regions, and a period of the particular shape in the non-aperture region having the particular shape is shifted by a half pitch from at least one of other adjacent non-aperture regions.

11. The nonwoven fabric substrate for wiping sheet according to any one of claims 1 to 10, wherein the non-aperture regions are arranged in a pattern in which a particular shape of a V shape is periodically repeated in the extending direction of the non-aperture regions, and

the non-aperture regions are repeatedly arranged with the aperture region interposed therebetween in a direction orthogonal to the extending direction of the non-aperture regions, and the period of the particular shape in the non-aperture region having the particular shape is shifted by a half pitch from at least one of the adjacent other non-aperture regions.

12. The nonwoven fabric substrate for wiping sheet according to any one of claims 1 to 11, wherein the non-aperture regions have a constant width in the extending direction of the non-aperture regions, and the width is wider than an interval between the apertures adjacent to each other in the direction of the grooves in the aperture portions.

13. The nonwoven fabric substrate for wiping sheet according to any one of claims 1 to 12,

wherein the aperture regions include a first aperture region arranged in a

pattern in which a diamond shape is periodically repeated, and a second aperture region arranged in a pattern in which a V shape is periodically repeated, in the extending direction of the aperture regions, and the first aperture region and the second aperture region have a pattern arranged alternately with the non-aperture region interposed therebetween in a direction orthogonal to the extending direction of the aperture regions.

14. The nonwoven fabric substrate for wiping sheet according to claim 13,

wherein the non-aperture regions include a first non-aperture region in which the V shape formed by the non-aperture portions of the plurality of grooves is repeatedly arranged in the extending direction of the non-aperture regions, and a second non-aperture region in which an inverted V shape formed by the non-aperture portions of the plurality of grooves is repeatedly arranged in the extending direction of the non-aperture regions, so as to surround the diamond shape of the first aperture region.

15. The nonwoven fabric substrate for wiping sheet according to claim 14, wherein the width of the first non-aperture region and the width of the second non-aperture region are formed in the same width.

16. The nonwoven fabric substrate for wiping sheet according to any one of claims 1 to 15,

wherein the nonwoven fabric substrate for wiping sheet is impregnated with a chemical solution.

17. The nonwoven fabric substrate for wiping sheet according to claim 16, wherein the chemical solution is an aqueous cleaning agent.

18. The nonwoven fabric substrate for wiping sheet according to claim 17, wherein the aqueous cleaning agent contains a surfactant.

19. The nonwoven fabric substrate for wiping sheet according to claim 17 or 18, wherein the aqueous cleaning agent contains an alkaline agent.

20. The nonwoven fabric substrate for wiping sheet according to any one of claims 17 to 19, wherein the aqueous cleaning agent contains a water-soluble solvent.

21. The nonwoven fabric substrate for wiping sheet according to any one of claims 17 to 20, wherein the aqueous cleaning agent contains a disinfectant.

22. The nonwoven fabric substrate for wiping sheet according to claim 21, wherein the disinfectant is isothiazolin-based disinfectant.

23. The nonwoven fabric substrate for wiping sheet according to any one of claims 17 to 22, containing the disinfectant other than polyhexamethylene biguanide or poly (hexamethylene) biguanide hydrochloride.

24. The nonwoven fabric substrate for wiping sheet according to claim 16, wherein the chemical solution is selected from at least one of mineral oil, synthetic oil, silicone oil, and wax.

CLAIMS

1. A non-woven fabric substrate for wiping sheet in which ridges and grooves are alternately formed at positions corresponding to each other on each of both surfaces, and apertures penetrating the grooves of both surfaces are formed, wherein the ridges and the grooves extend parallel to each other, and extend in a direction to intersect either opposed or adjacent sides, extending in parallel of the non-woven fabric substrate for wiping sheet, in planar view, each of the grooves alternately includes an aperture portion which has one or more apertures, and a non-aperture portion which has no aperture and is longer than a distance between the nearest end portions of the adjacent apertures in the aperture portion, and an arrangement pattern of the aperture portions and the non-aperture portions provided in the grooves is different from an arrangement pattern of the aperture portions and the non-aperture portions provided in the subsequent groove adjacent to the initial groove, when a whole of the non-woven fabric substrate for wiping sheet is seen in planar view, the non-woven fabric substrate for wiping sheet includes an aperture region formed by the aperture portions of the plurality of grooves, and a non-aperture region formed by the non-aperture portions of the plurality of grooves, and each of the aperture region and the non-aperture region is arranged in a predetermined pattern.

2. The non-woven fabric substrate for wiping sheet according to claim 1, wherein each of the aperture region and the non-aperture region is arranged in a pattern in which each of an extending direction of the aperture region and an extending direction of the non-aperture region intersects with the extending direction of each of the ridges and the grooves.

3. The non-woven fabric substrate for wiping sheet according to claim 1 or claim 2, wherein the apertures are formed by dividing and rearranging constituent fibers of the non-woven fabric substrate.

4. The non-woven fabric substrate for wiping sheet according to any one of claims 1 to 3, wherein the aperture regions are arranged in a pattern in which a particular shape is periodically repeated in the extending direction of the aperture

regions.

5. The non-woven fabric substrate for wiping sheet according to any one of claims 1 to 4, wherein the aperture regions are arranged in a pattern in which a particular shape of a diamond shape or a V shape is periodically repeated in the extending direction of the aperture region.

6. The non-woven fabric substrate for wiping sheet according to any one of claims 1 to 5, wherein the non-aperture regions are arranged in a pattern in which a particular shape is periodically repeated in the extending direction of the non-aperture regions.

7. The non-woven fabric substrate for wiping sheet according to any one of claims 1 to 6, wherein the non-aperture regions are arranged in a pattern in which a particular shape of a V shape is periodically repeated in the extending direction of the non-aperture region.

8. The non-woven fabric substrate for wiping sheet according to any one of claims 1 to 7, wherein the non-aperture regions have a constant width in the extending direction of the non-aperture regions, and the width is wider than an interval between the apertures adjacent to each other in the direction of the grooves in the aperture portions.

9. The non-woven fabric substrate for wiping sheet according to any one of claims 1 to 8, wherein the aperture regions include a first aperture region arranged in a pattern in which a diamond shape is periodically repeated, and a second aperture region arranged in a pattern in which a V shape is periodically repeated, in the extending direction of the aperture regions, and the first aperture region and the second aperture region have a pattern arranged alternately with the non-aperture region interposed therebetween in a direction orthogonal to the extending direction of the aperture regions.

10. The non-woven fabric substrate for wiping sheet according to claim 9, wherein

the non-aperture regions include a first non-aperture region in which the V shape formed by the non-aperture portions of the plurality of grooves is repeatedly arranged in the extending direction of the non-aperture regions, and a second non-aperture region in which an inverted V shape formed by the non-aperture portions of the plurality of grooves is repeatedly arranged in the extending direction of the non-aperture regions, so as to surround the diamond shape of the first aperture region.

11. The non-woven fabric substrate for wiping sheet according to claim 10, wherein the width of the first non-aperture region and the width of the second non-aperture region are formed in the same width.

12. The non-woven fabric substrate for wiping sheet according to any one of claims 1 to 11, wherein the non-woven fabric substrate for wiping sheet is impregnated with a chemical solution.

13. The non-woven fabric substrate for wiping sheet according to claim 12, wherein the chemical solution is an aqueous cleaning agent.

14. The non-woven fabric substrate for wiping sheet according to claim 13, wherein the aqueous cleaning agent contains a surfactant.

15. The non-woven fabric substrate for wiping sheet according to claim 13 or claim 14, wherein the aqueous cleaning agent contains an alkaline agent.

16. The non-woven fabric substrate for wiping sheet according to any one of claims 13 to 15, wherein the aqueous cleaning agent contains a water-soluble solvent.

17. The non-woven fabric substrate for wiping sheet according to any one of claims 13 to 16, wherein the aqueous cleaning agent contains a disinfectant.

18. The non-woven fabric substrate for wiping sheet according to claim 17, wherein the disinfectant is isothiazolin-based disinfectant.

19. The non-woven fabric substrate for wiping sheet according to any one of claims 13 to 18, containing the disinfectant other than polyhexamethylene biguanide or poly (hexamethylene) biguanide hydrochloride.

20. The non-woven fabric substrate for wiping sheet according to claim 12, wherein the chemical solution is selected from at least one of mineral oil, synthetic oil, silicone oil, and wax.