CLAIMS

What is claimed is:

1. A battery diaphragm, comprising:

a porous substrate; and

an adhesive layer formed on a side of the porous substrate, wherein the adhesive layer comprises a polymer material with an adhesive property, the polymer material comprises polyvinylidene fluoride (PVDF), the adhesive layer has a coating coefficient C, the coating coefficient C is equal to a ratio of an adhesive strength A of the adhesive layer to a value P of an increase in gas permeability per unit coating thickness of the adhesive layer, a relation C=A/P is satisfied, the coating coefficient C has a ratio in a range of 0.4<C<0.9, the adhesive strength A of the adhesive layer has a unit of N/m, the value P of the increase in the gas permeability per unit coating thickness of the adhesive layer has a unit of s/100cc/μm, the adhesive layer is coated with aqueous polyvinylidene fluoride, and an α-phase in a crystalline region of the aqueous polyvinylidene fluoride has a ratio greater than 30% and less than 70%.

2. The battery diaphragm according to claim 1, wherein a raw material of a polyvinylidene fluoride copolymer has a crystallinity in a range between 10% and 50%.

3. A battery diaphragm, comprising:

a porous substrate; and

an adhesive layer formed on a side of the porous substrate, wherein the adhesive layer comprises a polymer material with an adhesive property, the polymer material comprises polyvinylidene fluoride (PVDF), the adhesive layer has a coating coefficient C, the coating coefficient C is equal to a ratio of an adhesive strength A of the adhesive layer to a value P of an increase in gas permeability per unit coating thickness of the adhesive layer, a relationship C=A/P is satisfied, the coating coefficient C has a ratio in a range of 0.4<C<0.9, the adhesive strength A of the adhesive layer has a unit of N/m, and the value P of the increase in the gas permeability per unit coating thickness of the adhesive layer has a unit of s/100cc/μm, the adhesive layer is coated with oil-based polyvinylidene fluoride, and an α-phase in a crystalline region of the oil-based polyvinylidene fluoride has a ratio less than 20%.

4. The battery diaphragm according to claim 3, wherein a raw material of a polyvinylidene fluoride copolymer has a crystallinity of 10% - 50%.

5. A lithium battery, comprising: a positive electrode, a negative electrode and the battery diaphragm according to claim 1, wherein the battery diaphragm is positioned between the positive electrode and the negative electrode.