Claims

1. A diverting agent comprising:

a polyvinyl alcohol-based resin wherein the polyvinyl alcohol-based resin has a degree of saponification of 90 mol% or more.

2. The diverting agent according to claim 1, wherein the polyvinyl alcohol-based resin has a dissolution rate of 0.1 mass% to 30 mass%, when 4 g of the polyvinyl alcohol-based resin is charged into 96 g of water and is stirred for 180 minutes at 40°C.

3. The diverting agent according to any one of claims 1 or claim 2, wherein a degree of crystallinity of the polyvinyl alcohol-based resin is 25% to 60%.

4. The diverting agent according to claim 1, wherein when 1 g of the polyvinyl alcohol-based resin is immersed in 100 g of water at 40°C, a ratio of a dissolution rate after 24 hours with respect to a dissolution rate after 1 hour of the polyvinyl alcohol-based resin is 2.8 or more.

5. The diverting agent according to claim 4, wherein when 1 g of the polyvinyl alcohol-based resin is immersed in 100 g of water at 40°C, the dissolution rate after 1 hour is less than 30 mass%.

6. The diverting agent according to claim 4 or claim 5, wherein when 1 g of the polyvinyl alcohol-based resin is immersed in 100 g of water at 40°C, the dissolution rate after 24 hours is 30 mass% or more.

7. The diverting agent according to any one of claims 4 to 6, wherein the polyvinyl alcohol-based resin is a modified polyvinyl alcohol-based resin.

8. The diverting agent according to claim 7, wherein a modification rate of the modified polyvinyl alcohol-based resin is 0.5 mol% to 10 mol%.

9. The diverting agent according to claim 1, wherein the polyvinyl alcohol-based resin satisfies the following formula (A).

Degree of swelling × elution rate (mass%) ≤ 500 (A)

(In the formula (A), the degree of swelling is a value determined according to the following formula (B), and the elution rate (mass%) is a value determined according to the following formula (C).)

[Equation 1]

$$\text{Degree of swelling} = \frac{\text{Mass (g) of polyvinyl alcohol-based resin after swelling} - \text{mass (g) of polyvinyl alcohol-based resin dried after swelling}}{\text{mass (g) of polyvinyl alcohol-based resin dried after swelling}} \quad (B)$$

(In the formula (B), the mass (g) of the polyvinyl alcohol-based resin after swelling is a mass (g) of a residual polyvinyl alcohol-based resin obtained by charging 1 g of a polyvinyl alcohol-based resin into 100 g of water, leaving it to stand for 1 day in a thermostatic chamber at 23°C and collecting by filtration. The mass (g) of the polyvinyl alcohol-based resin dried after swelling is a mass (g) after the residual polyvinyl alcohol-based resin is dried at 140°C for 3 hours.)

[Equation 2]

$$\text{Elution rate (mass\%)} = \left\{ 1\,(g) - \frac{\text{Mass (g) of polyvinyl alcohol-based resin dried after swelling}}{1\,(g) \times \frac{\text{Solid fraction (mass\%) of polyvinyl alcohol-based resin}}{100}} \right\} \times 100 \quad (C)$$

(In the formula (C), the mass (g) of the polyvinyl alcohol-based resin dried after swelling is the same as defined in the formula (B).)

10. The diverting agent according to claim 9, wherein the elution rate of the polyvinyl alcohol-based resin is 50 mass% or less.

11. The diverting agent according to claim 9, wherein the degree of swelling of the polyvinyl alcohol-based resin is 30 or less.

12. A method of filling a fracture which is a method of temporarily filling the fracture generated in a well, comprising:

allowing the diverting agent according to any one of claims 1 to 11 to flow into a fracture to be filled with a flow of fluid in the well.