CLAIMS

[Claim 1]

A production method of a conjugated diene, comprising:

a step A of allowing an α-olefin and formaldehyde to react with each other to produce a γ,δ-unsaturated alcohol;

a step A' of washing the resulting reaction liquid by bringing the reaction liquid into contact with an alkaline aqueous solution at a temperature range of 50 to 80°C;

a step of distilling an organic layer of a washed liquid obtained by the step A'; and

a step B of subjecting the γ,δ-unsaturated alcohol to a dehydration reaction at 135 to 210°C in the presence of an aqueous solution of an acidic catalyst.

[Claim 2]

The production method according to claim 1, wherein in the step A, a solvent is allowed to coexist.

[Claim 3]

The production method according to claim 2, wherein the solvent is an alcohol.

[Claim 4]

The production method according to any of claims 1 to 3, wherein the α-olefin is isobutene, and the γ,δ-unsaturated alcohol is 3-methyl-3-buten-1-ol.

[Claim 5]

The production method according to any of claims 1 to 4, wherein the step B comprises feeding the γ,δ-unsaturated alcohol and water continuously or intermittently into a reactor; and taking the produced conjugated diene and water continuously or intermittently out of the reaction system.

[Claim 6]

The production method according to claim 5, wherein {(feed rate of water (mol/hr))/(feed rate of γ,δ-unsaturated alcohol (mol/hr))} is from 0.5 to 12.

[Claim 7]

The production method according to any of claims 1 to 6, wherein the acidic catalyst is phosphoric acid.

[Claim 8]

The production method according to any of claims 1 to 7, wherein the

alkaline aqueous solution has a pH of 10 to 13.