

Method for Producing Modified Conjugated Diene-Based Polymer,
Polymer Composition,
Crosslinked Polymer, and Tire

ABSTRACT

A method for producing a modified conjugated diene-based polymer includes polymerizing a monomer group X containing at least one compound selected from the group consisting of a vinylsilane compound (A) and an aromatic vinyl compound (B) and a conjugated diene compound in the presence of a polymerization initiator, thereby preparing a polymer having an active terminal; and reacting the polymer having the active terminal with a polyorganosiloxane (C). The vinylsilane compound (A) is a vinylsilane compound having a group " $-\text{SiR}^1\text{R}^2\text{R}^3$ ". The aromatic vinyl compound (B) is an aromatic vinyl compound containing a specific atom (e.g., a nitrogen atom). The polyorganosiloxane (C) is a polyorganosiloxane having a specific functional group (e.g., an epoxy group), wherein the total number of the specific functional groups is two or more.