CLAIMS

1. A modified conjugated diene-based polymer comprising: a repeating unit derived from a conjugated diene-based monomer; and a functional group derived from a modifier,

wherein, if measured by differential scanning calorimetry (DSC), a difference between a glass transition onset temperature ($T_{g\text{-}on}$) and a glass transition offset temperature ($T_{g\text{-}off}$), which arise glass transition, is 10°C to 30°C ,

wherein, in a tan δ graph in accordance with temperature, derived from dynamic viscoelasticity analysis by an Advanced Rheometric Expansion System (ARES), a full width at half maximum (FWHM) value of a tan δ peak shown in a temperature range of -100°C to 100°C is 20°C or higher, and

the Advanced Rheometric Expansion System is measured using a dynamic mechanical analyzer with a torsional mode under conditions of a frequency of 10 Hz, a strain of 0.5%, and a temperature rise rate of 5°C/min.

2. The modified conjugated diene-based polymer of claim 1, wherein the difference between the glass transition onset temperature ($T_{g\text{-}on}$) and the glass transition offset temperature ($T_{g\text{-}off}$) is 15°C to 30°C.

3. The modified conjugated diene-based polymer of claim 1, wherein a glass transition temperature (Tg) is -100°C to 20°C.

4. The modified conjugated diene-based polymer of claim 1, wherein the full width at half maximum value of a tan δ peak is 30°C to 80°C.

5. The modified conjugated diene-based polymer of claim 1, wherein the tan δ peak is shown in a temperature range of -80°C to 20°C.

6. The modified conjugated diene-based polymer of claim 1, wherein a molecular weight distribution curve by gel permeation chromatography is unimodal, and molecular weight distribution is 1.0 to 3.0.

7. The modified conjugated diene-based polymer of claim 1, wherein the Si and N contents are 50 ppm or more each, based on a total weight of the polymer.

8. The modified conjugated diene-based polymer of claim 1, further comprising a repeating unit derived from an aromatic vinyl-based monomer.

9. The modified conjugated diene-based polymer of claim 1, wherein the modifier is an alkoxysilane-based compound comprising an N-functional group.

10. A rubber composition comprising the modified conjugated diene-based polymer of claim 1 and a filler.

11. The rubber composition of claim 10, wherein the filler is comprised in 0.1 parts by weight to 200 parts by weight based on 100 parts by weight of the modified conjugated diene-based polymer.

12. The rubber composition of claim 10, wherein the filler is a silica-based filler or a carbon black-based filler.