CLAIMS

[Claim 1]

A saturated aliphatic hydrocarbon compound composition having an evaporation loss of 4% by mass or less as determined by the Noack method, a kinetic viscosity at 100ºC of 6.5 mm^2/s or less, and an average carbon number of 36 to 44,

wherein the content of the saturated aliphatic hydrocarbon compound having a carbon number of 40 is 20% by mass or more,

wherein the saturated aliphatic hydrocarbon compound having a carbon number of 40 comprises a plurality of isomers,

wherein in a gas chromatography chromatogram of the composition, the area of the main peak is 40% or less of the total peak area corresponding to a saturated aliphatic hydrocarbon compound having a carbon number of 40, and

the compound corresponding to the main peak is 11-methyl-11,13-dioctricosane.

[Claim 2]

The saturated aliphatic hydrocarbon compound composition according to claim 1, wherein the content of a saturated aliphatic hydrocarbon compound having a carbon number of 40 is 90% by mass or more.

~~[Claim 3]~~

~~The saturated aliphatic hydrocarbon compound composition according to claim 1 or 2, wherein in a gas chromatography chromatogram of the composition, the area of the main peak is 40% or less of the total peak area corresponding to a saturated aliphatic hydrocarbon compound having a carbon number of 40.~~

[Claim 3~~4~~]

The saturated aliphatic hydrocarbon compound composition according to any one of claim~~s~~ 1 or ~~to~~ 2~~3~~, wherein the content of 11-methyl-11,13-dioctyltricosane in a saturated aliphatic hydrocarbon compound having a carbon number of 40 is 40% by mass or less.

[Claim 4~~5~~]

A lubricating oil composition comprising the saturated aliphatic hydrocarbon compound composition according to any one of claims 1 to 3~~4~~.

[Claim 5~~6~~]

A method for producing a saturated aliphatic hydrocarbon compound composition, comprising:

a step 1 of oligomerizing an olefin to obtain an olefin oligomer;

a step 2 of isomerizing the olefin oligomer to obtain an isomer,

wherein the olefin oligomer is isomerized in the presence of a Friedel-Crafts catalyst,

wherein the Friedel-Crafts catalyst comprises an organoaluminum compound and an organic halide, and

wherein the reaction temperature upon the isomerization reaction is 120 to 200 ºC; and

a step 3 of hydrogenating the isomer.

~~[Claim 7]~~

~~The method for producing a saturated aliphatic hydrocarbon compound composition according to claim 6, wherein in the step 2, the olefin oligomer is isomerized in the presence of a Friedel-Crafts catalyst.~~

[Claim 6~~8~~]

The method for producing a saturated aliphatic hydrocarbon compound composition according to claim 5~~6 or 7~~, wherein in the step 1, the olefin is oligomerized in the presence of a Friedel-Crafts catalyst.

~~[Claim 9]~~

~~The method for producing a saturated aliphatic hydrocarbon compound composition according to claim 7 or 8, wherein the Friedel-Crafts catalyst comprises an organoaluminum compound.~~

[Claim 7~~10~~]

The method for producing a saturated aliphatic hydrocarbon compound composition according to any one of claims ~~6 to 9~~5 to 6, further comprising a step 4, which is a distillation step, after the step 3.

[Claim 8~~11~~]

The method for producing a saturated aliphatic hydrocarbon compound composition according to any one of claims ~~6 to 10~~5 to 7, wherein the olefin comprises 90% by mass or more of an olefin having a carbon number of 20.

[Claim 9~~12~~]

The method for producing a saturated aliphatic hydrocarbon compound composition according to any one of claims ~~6 to 11~~5 to 8, wherein the olefin is a dimer of 1-decene.

[Claim 10~~13~~]

A lubricating oil composition comprising a saturated aliphatic hydrocarbon compound composition obtained by the production method according to any one of claims ~~6 to 12~~5 to 9.