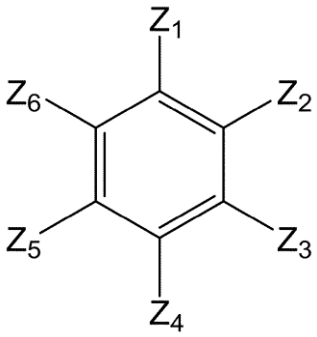


(5)

[0018]

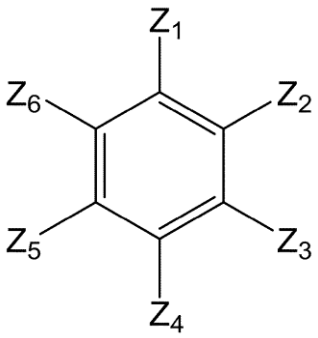
with the proviso that Z_1, Z_2, Z_3, Z_4, Z_5, and Z_6 are each individually a hydrogen atom or a fluorine atom, is less than 0.1 ppm.

[0018a] In one aspect, there is provided a method for producing a hydrofluoroolefin or fluoroolefin having two, three, or four carbon atoms, comprising irradiating at least one starting material compound selected from the group consisting of hydrofluorocarbons having one or two carbon atoms and hydrofluoroolefin As having two or three carbon atoms with ionizing radiation and/or an ultraviolet ray having a wavelength of 300 nm or less, with the proviso that when the at least one starting material compound is the hydrofluoroolefin A, the resulting hydrofluoroolefin is different from the hydrofluoroolefin A.

[0018b] In another aspect, there is provided a composition comprising trifluoroethylene (HFO-1123), 1,2-difluoroethylene (HFO-1132(E)/(Z)), tetrafluoroethylene (FO-1114), or 1,1-difluoroethylene (HFO-1132a) in an amount of 99.0 mol% or more, and further comprising at least one member selected from the group consisting of fluoroacetylene, trifluoromethane (HFC-23), 1,1,2,2-tetrafluoroethane (HFC-134), and 1,1,2-trifluoroethane (HFC-143).

[0018c]

In another aspect, there is provided a composition comprising trifluoroethylene (HFO-1123), 1,2-difluoroethylene (HFO-1132(E)/(Z)), tetrafluoroethylene (FO-1114), or 1,1-difluoroethylene (HFO-1132a) in an amount of 99.0 mol% or more, wherein the content of an aromatic compound represented by formula (5):



(5)

with the proviso that Z_1, Z_2, Z_3, Z_4, Z_5, and Z_6 are each individually a hydrogen atom or a fluorine atom, is less than 0.1 ppm.

Advantageous Effects of Invention

[0019]

The method for producing an HFO or FO according to the present disclosure can provide a method for producing an HFO or FO, which is a target compound, with high selectivity.

Description of Embodiments

[0020]

The present inventors conducted extensive research to solve the above problems, and found that the problems can be solved by a production method comprising irradiating a specific starting material compound with ionizing radiation and/or an ultraviolet ray having a wavelength of 300 nm or less.

[0021]

The present disclosure was accomplished as a result of further research based on the above finding. The present disclosure includes the following embodiments.

[0022]

Method for producing a hydrofluoroolefin (HFO) or fluoroolefin (FO)

In the method for producing a hydrofluoroolefin (HFO) or fluoroolefin (FO) of the present disclosure, a hydrofluoroolefin or fluoroolefin having two, three, or four