fluid.

However, sulphur hexafluoride (SF_6) is also often used as a filling medium that is suitable both as an arc extinguishing medium and also as an electrical insulation medium. In comparison to air SF_6 offers the advantage of a higher breakdown resistance by a factor of approximately 2.5 at standard pressure. This makes possible small insulation separation distances, and thus allows the design of more compact switching devices for medium, high or extremely high-voltage. From DE 195 19 301 A1 a breaker for a metal-enclosed gas-insulated high-voltage switchgear is of known art. Here a contact pin and an opposing contact are arranged in a housing that is filled with SF_6 as an insulation gas. DE 32 15 234 C2 describes enclosed medium voltage switchgear, in which switching blades are arranged in a housing filled with an insulation gas; the blades can be brought into three switching positions.

From the point of view of environmental protection, and in particular climate protection, however, SF_6 is beset with many disadvantages. Its global warming potential (GWP), also known as its CO_2-equivalent, is 22,800.Thus 1 kg of SF_6 over a time period of 100 years is considered to be just as damaging as 22,800 kg of CO_2. Moreover its atmospheric lifespan is extremely high at 3200 years. Thus in Europe, for example, the handling and use of SF_6 is subject to stringent regulations. Stocks of SF_6 and its consumption must be monitored, for example,

It is therefore an object of the invention to provide switching devices for medium, high or extremely high

AMENDED CLAIMS

1. A switching device (100, 200) for medium, high or extremely high voltage, wherein

at least one voltaged component (101, 102, 103, 104, 100, 202, 203, 400) of the switching device is enclosed in an enclosure (105, 201, 206) and the enclosure (105, 201, 206) is filled with a filling medium (109, 204),

characterised in that the filling medium (109, 204) comprises at least one compound from the group of fluorinated ketones C4-C8, or consists of the same.

2. The switching device (100, 200) according to Claim 1,

characterised in that the compound from the group of fluorinated ketones is a compound from the group of fluorinated ketones C5-C7.

3. The switching device (100, 200) according to one of the Claims 1 or 2,

characterised in that the compound from the group of fluorinated ketones C4-C8 is a compound from the group of perfluorinated ketones.

4. The switching device (100, 200) according to Claim 3,

characterised in that the compound from the group of fluorinated ketones C4-C8 is $CF_3CF_2C(O)CF(CF_3)_2$.

5. The switching device (100, 200) according to one of the Claims 1 to 4,

characterised in that it is designed as a switching device (100, 200) for medium voltage.

6. The switching device according to one of the Claims 1 to 5,

characterised in that the switching device is designed as a switch (100) with at least two contact means (101, 102) enclosed in the enclosure (105).

7. The switching device according to Claim 6,

characterised in that the switch (100) is designed as a three-position switch with three contact means enclosed in the enclosure (105).

8. The switching device according to one of the Claims 1 to 5,

characterised in that the switching device is designed as switchgear (200).

9. The switchgear (200) according to Claim 8,

characterised in that the switchgear (200) includes at least one switch (100. 400) for medium, high, or extremely high voltage arranged in the enclosure (201, 206).

10. The switchgear (200) according to Claim 9,

characterised in that the switch (100) arranged in the

enclosure (201, 206) is a switch in accordance with one of the Claims 6 or 7.

11. The switchgear (200) according to Claim 9,

characterised in that the switch arranged in the enclosure (201, 206) includes at least two contact means, which are surrounded by the filling medium (204) of the enclosure (201, 206) of the switchgear (200).

12. The switchgear (200) according to one of the Claims 9-11,

characterised in that the switchgear (200) is designed as a block switchgear that contains more than one switch (100, 400).

13. The switching device (100, 200) according to one of the Claims 1 to 11,

characterised in that the enclosure (105, 201, 206) is provided with a closure element (205) that can be opened and again closed.

14. A use of at least one compound from the group of fluorinated ketones C4-C8 as a constituent of a filling medium (109, 204), or as a filling medium (109, 204), for the filling of an enclosure (105, 201, 206), in which at least one voltaged component (101, 102, 103, 104, 100, 202, 203, 400) of a switching device (100, 200) for medium, high, or extremely high voltage is enclosed.

15. The use of a compound from the group of fluorinated ketones C4-C8 as a constituent of a filling medium (109, 204), or as a filling medium (109, 204), in accordance with Claim 14,

characterised in that the filling medium (109, 204) serves as an electrical insulation medium and/or an arc extinguishing medium.

16. A method

characterised by the filling of an enclosure (105, 201, 206), in which at least one voltaged component (101, 102, 103, 104, 100, 202, 203, 400) of a switching device (100, 200) for medium, high, or extremely high voltage is enclosed, with a filling medium (109, 204) that comprises at least one compound from the group of fluorinated ketones C4-C8, or consists of the same.

fluid.

However, sulphur hexafluoride (SF_6) is also often used as a filling medium that is suitable both as an arc extinguishing medium and also as an electrical insulation medium. In comparison to air SF_6 offers the advantage of a higher breakdown resistance by a factor of approximately 2.5 at standard pressure. This makes possible small insulation separation distances, and thus allows the design of more compact switching devices for medium, high or extremely high-voltage. From DE 195 19 301 A1 a breaker for a metal-enclosed gas-insulated high-voltage switchgear is of known art. Here a contact pin and an opposing contact are arranged in a housing that is filled with SF_6 as an insulation gas. DE 32 15 234 C2 describes enclosed medium voltage switchgear, in which switching blades are arranged in a housing filled with an insulation gas; the blades can be brought into three switching positions.

From the point of view of environmental protection, and in particular climate protection, however, SF_6 is beset with many disadvantages. Its global warming potential (GWP), also known as its CO_2-equivalent, is 22,800. Thus 1 kg of SF_6 over a time period of 100 years is considered to be just as damaging as 22,800 kg of CO_2. Moreover its atmospheric lifespan is extremely high at 3200 years. Thus in Europe, for example, the handling and use of SF_6 is subject to stringent regulations. Stocks of SF_6 and its consumption must be monitored, for example.

According to the present invention there is provided a composition when used as an electrical insulation medium, the composition comprising or consisting of at least one of the following compounds:

CLAIMS:

1. A composition when used as an electrical insulation medium, the composition comprising or consisting of at least one of the following compounds:

(a) a fluorinated ketone from the group of fluorinated ketones C4-C8 with the general formula R-C(O)-R', wherein R and R' are partially fluorinated or perfluorinated substituents, or

(b) a fluorinated ketone from the group of fluorinated ketones C5-C7, C9, C10, C11, C13, C14, C15.

2. The composition according to claim 1, wherein the compound from the group of fluorinated ketones is C5 or C7.

3. The composition according to claim 1, wherein the compound from the group of fluorinated ketones is selected from the group consisting of $CF_3C(O)CF(CF_3)_2$, $CH_3C(O)CF_2CF_2H$, and $CH_3C(O)CF_2CFHCF_3$.

4. The composition according to claim 1, wherein the fluorinated ketone is alpha-branched to the carbonyl group.

5. The composition according to claim 1, wherein the compound from the group of fluorinated ketones comprises at least one constituent that contains one or more non-chain forming heteroatoms interrupting the main carbon chain in a perfluorinated part of the molecule.

6. The composition according to claim 5, wherein the heteroatom is a nitrogen, oxygen or sulphur atom.

7. The composition according to claim 5 or 6, wherein the compound is a perfluoroketone.

8. A filling medium for a switching device and/or a switchgear for medium, high or extremely high voltage, comprising a composition according to any one of the preceding claims.

9. The filling medium according to claim 8, further comprising at least one further component not belonging to the group of fluorinated ketones.

10. The filling medium according to claim 8, wherein the filling medium consists of a composition according to any one of claims 1 through 7.

11. A switching device for medium, high or extremely high voltage, wherein at least one voltaged component of the switching device is enclosed in an enclosure and the enclosure is filled with a filling medium according to any one of claims 8 through 10.

12. A switchgear for medium, high or extremely high voltage, wherein at least one voltaged component of the switchgear is enclosed in an enclosure and the enclosure is filled with a filling medium according to any one of claims 8 through 10.

13. The switchgear according to claim 12, wherein the component comprises a busbar, a cable connector and/or a switch.

14. The switchgear as claimed in claim 12 for medium, high or extremely high voltage, wherein at least one switch is enclosed in a switching chamber, wherein at

least two contact means of said switch are enclosed in an enclosure, wherein the switching chamber and the enclosure are filled with a filling medium according to any one of claims 8 through 10.

15. The switchgear according to claim 14, wherein the filling media of the switching chamber and the enclosure have the same composition.

16. The switchgear according to claim 14, wherein the filling media of the switching chamber and the enclosure have a different composition.

17. The switchgear as claimed in claim 15 for medium, high or extremely high voltage, wherein the enclosure comprises a closure element that can be opened and again closed.

18. The switchgear of claim 17, wherein the closure element is a flap valve.

19. The switchgear of claim 18, wherein the flap valve has locking means and sealing means.

20. The switchgear of any one of claims 17 to 19, wherein the closure element provides access to the parts of the switching device which are enclosed in the enclosure.

21. The switchgear of any one of claims 17 to 20, wherein the closure element allows filling the filling medium into the enclosure and removing the filling medium from the enclosure.

22. A switching device for medium, high or extremely high voltage, wherein at least two contact means of the

switching device are enclosed in an enclosure and the enclosure is filled with a filling medium according to any one of claims 8 through 10.

23. The switching device of claim 22, wherein the at least two contact means are of different designs.

24. The switching device of claim 22, wherein the at least two contact means are switching tubes that can be connected electrically via a switching contact.

25. The switching device of claim 22, wherein the at least two contact means are two contact pieces that can be directly connected together electrically.

26. The switching device of claim 22, wherein the switching device is a three-position switch with three contact means enclosed in the enclosure.

27. The switching device of any one of claims 22 to 26, wherein the switching device is a switchgear comprising at least two voltaged components which are electrically insulated with respect to each other.

28. The switching device of claim 27, wherein the voltaged components include a busbar, a cable connector, or a switch.

29. The switching device of claim 27 or 28, wherein the switchgear includes a plurality of separate enclosures, each being filled with a filling medium according to any one of claims 8 through 10.

30. The switching device of claim 29, wherein the filling medium is the same for all enclosures.

31. The switching device of claim 29, wherein the filling medium differs between enclosures.

32. The switching device according to any one of claims 27 to 31, wherein the switchgear is a block switchgear containing more than one switch.

33. A composition when used as an electrical insulation medium according to claim 1 substantially as hereinbefore described with reference to any one of the accompanying examples.

34. A switching device for medium, high, or extremely high voltage according to claim 11 or 22 substantially as hereinbefore described with reference to the accompanying Figure 1.

35. A switchgear for medium, high, or extremely high voltage according to claim 12 substantially as hereinbefore described with reference to the accompanying Figure 2.