Claims

1. A method for the removal of a fluorinated gas from a gas stream comprising the steps of: conveying the gas stream containing the fluorinated gas to a combustion region, decomposing the fluorinated gas in the combustion region, entraining a calcium salt capable of reacting with the fluorinated gas decomposition products into the gas stream to react with the fluorinated gas decomposition products to form calcium fluoride and then removing the calcium fluoride salt from the gas stream.

2. A method according to Claim 1, wherein the fluorinated gas is one or a mixture of molecular fluorine (F_2) and the perfluorinated gases.

3. A method according to Claim 2, wherein the perfluorinated gases are one or a mixture of nitrogen trifluoride (NF_3), carbon tetrafluoride (CF_4), Hexafluoroethane (C_2F_6), Silicon tetrafluoride (SiF_4), Sulphur hexafluoride (SF_6).

4. A method according to Claim 1, wherein the calcium salt is one or a mixture of CaO, $CaCO_3$, $Ca(OH)_2$, Lime, Slaked Lime and $Ca(CH_3CH_2CO_2)_2.H_20$

5. A method according to any preceding claim, wherein the calcium salt is entrained into the gas stream downstream of the combustion region

6. A method according to any preceding claim, wherein the calcium salt is entrained into the gas stream inside the combustion zone

7. A method according to any preceding claim, wherein the calcium salt is entrained into the gas stream upstream of the combustion zone

8. A method according to any preceding claim, wherein the calcium salt is entrained into the gas stream by an air blown powder technique

9. A method according to any of Claims 1 to 7, wherein the calcium salt is entrained into the gas stream by a simple spraying technique

10. A method according to any of Claims 1 to 7, wherein the calcium salt is entrained into the gas stream by an atomising spray technique

11. A method according to any preceding claim, wherein the combustion region is that of an inwardly fired burner.

12. A method according to any of Claims 1 to 10, wherein the combustion region is that of an electrically heated burner.

13. A method according to any of Claims 1 to 10, wherein the combustion region is that of an open flame burner.

14. A method according to any of Claims 1 to 10, wherein the combustion region is that of a plasma reactor.

Claims

1 A method for the removal of a fluorinated gas from a gas stream comprising the steps of: conveying the gas stream containing the fluorinated gas to a combustion region, decomposing the fluorinated gas in the combustion region, wherein the method also comprises the steps of entraining a calcium salt capable of reacting with the fluorinated gas decomposition products into the gas stream upstream of the combustion region and conveying the gas stream containing the fluorinated gas and calcium salt to the combustion regionto react with the fluorinated gas decomposition products to form dry calcium fluoride salt and then removing the dry calcium fluoride salt from the gas stream.

2 A method for the removal of a fluorinated gas from a gas stream comprising the steps of: conveying the gas stream containing the fluorinated gas to a combustion region, decomposing the fluorinated gas in the combustion region, wherein the method also comprises the steps of entraining a calcium salt capable of reacting with the fluorinated gas decomposition products into the gas stream inside the combustion region to react with the fluorinated gas decomposition products to form dry calcium fluoride salt and then removing the dry calcium fluoride salt from the gas stream.

3 A method for the removal of a fluorinated gas from a gas stream according to claim 1, wherein the calcium salt capable of reacting with the fluorinated gas decomposition products is also entrained into the gas stream inside the combustion region to react with the fluorinated gas decomposition products to form dry calcium fluoride salt.

4 A method according to any preceding claim, wherein the fluorinated gas is one or a mixture of molecular fluorine (F_2) and the perfluorinated gases.

5 A method according to claim 4, wherein the perfluorinated gases are one or a mixture of nitrogen trifluoride (NF_3), carbon tetrafluoride (CF_4), hexafluoroethane (C_2F_6), silicon tetrafluoride (SiF4), sulphur hexafluoride (SF_6).

6 A method according to any preceding claim, wherein the calcium salt is one or a

mixture of CaO, $CaCO_3$, $Ca(OH)_2$, lime, slaked lime and $Ca(CH_3CH_2CO_2)_2.H_2O$.

7 A method according to any preceding claim, wherein the calcium salt is entrained into the gas stream by an air blown powder technique.

8 A method according to any of Claims 1 to 6, wherein the calcium salt is entrained into the gas stream by a simple spraying technique.

9 A method according to any of Claims 1 to 6, wherein the calcium salt is entrained into the gas stream by an atomising spray technique.

10 A method according to any preceding claim, wherein the combustion region is that of an inwardly fired burner.

11 A method according to any of Claims 1 to 9, wherein the combustion region is that of an electrically heated burner.

12 A method according to any of Claims 1 to 9, wherein the combustion region is that of an open flame burner.

13. A method according to any of Claims 1 to 9, wherein the combustion region is that of a plasma reactor.

14. A method according to any preceding claim, wherein the dry calcium fluoride salt is removed from the gas stream by one of a filter cyclone and electrostatic precipitator.