Claims

1. A gas purification filter unit for removing impurities contained in ozone gas, comprising:

a first removal portion which removes a gas component from said impurities; and a second removal portion which removes solid fine particles from said impurities from which said gas component has been removed, said second removal portion disposed in a stage after the first removal portion.

2. The gas purification filter unit according to claim 1, wherein said first removal portion comprises an adsorbing material which adsorbs said gas component.

3. The gas purification filter unit according to claim 2, wherein said absorbing material is a silica gel.

4. The gas purification filter unit according to claim 3, wherein said silica gel has a plurality of fine pores, and an opening diameter of each fine pore is 10 nm or less.

5. The gas purification filter unit according to claim 3 or 4, wherein said silica gel forms a spherical shape with a diameter of 0.5 mm or more and 3 mm or less.

6. The gas purification filter unit according to claim 2, wherein said adsorbing material contains silica and alumina.

7. The gas purification filter unit according to claim 6, wherein said adsorbing material is made from high silica zeolite having a silica to alumina ratio of 10 or more.

8. The gas purification filter unit according to claim 1, wherein said second removal portion comprises a region which strains out said solid fine particles.

9. The gas purification filter unit according to claim 8, wherein the second removal portion is constituted from a resin case which is corrosion resistant to ozone, and said region which is accommodated inside said resin case.

10. The gas purification filter unit according to claim 9, wherein said region comprises a filter material which forms a sheet shape, and is folded and accommodated inside said resin case.

11. The gas purification filter unit according to claim 10, wherein said filter material has a nominal mesh opening within a range between 0.2 μm or more and 0.5 μm or less.

12. The gas purification filter unit according to any one of claims 9 to 11, wherein said resin case and said filter material are made from a fluorine-based resin.

13. The gas purification filter unit according to claim 12, wherein said fluorine-based resin contains at least one selected from tetrafluorinated ethylene-hexafluorinated propylene copolymer, polytetrafluoroethylene, and perfluoroalkoxy fluorine resin.

14. The gas purification filter unit according to any one of claims 9 to 13, wherein the first removal portion comprises an outer sheathing which accommodates said adsorbent material, and an accommodating portion which is formed in a portion of the outer sheathing and which detachably accommodates the resin case which constitutes said second removal portion.

15. The gas purification filter unit according to claim 14, wherein said accommodating portion comprises a net member which is made from stainless steel.

16. The gas purification filter unit according to any one of claims 1 to 15, wherein said first and second removal portions form an integral construction in which the both removal portions are continuously arranged so as to be adjacent each other.