Claims

1. A method for the thermal disposal of perfluorinated compounds in an industrial gas, comprising:

   feeding the industrial gas into a combustion chamber (**19**) of a burner (**1**); admixing a diluent gas with a fuel gas;

   then feeding the fuel gas admixed with diluent gas into the combustion chamber (**19**) of the burner (**1**) via a feed line separate from the industrial gas, wherein the diluent gas is introduce into the combustion chamber (**19**) in order to reduce the calorific value of the gas mixture consisting of diluent gas and fuel gas relative to the calorific value of the fuel gas;

   regulating throughput of the diluent gas as a function of the composition of the industrial gas in order to adapt the gas mixture consisting of diluent gas and fuel gas so that the feed of the diluent gas is reduced when the industrial gas contains perfluorinated compounds, wherein if the industrial gas contains tetrafluoromethane (CF4), the feed of the diluent gas is substantially discontinued or entirely discontinued; and

   feeding oxygen into combustion chamber (**19**) of the burner (**1**); and then igniting the fuel gas and oxygen in order to generate a flame for burning the perfluorinated compounds,

   wherein the admixture of the diluent gas with the fuel gas takes place before a flame is generated for burning the perfluorinated compounds and before the fuel gas is mixed with the oxygen.

2. The method according to claim 1, wherein the diluent gas is an inert gas.

3. The method according to claim 1, wherein volumes of the fuel gas, the oxygen and the diluent gas or volumes of the oxygen and an admixture of diluent gas and fuel gas flowing into the combustion chamber (**19**) are separately regulated.

4. The method according to claim 1 wherein volume(s) introduced into the combustion chamber of one or more of the fuel gas, the oxygen and/or the diluent gas, is/are dynamically regulated based on throughput and composition of the industrial gas introduced into the combustion chamber.

5. The method according to claim 4, wherein composition of the industrial gas is ascertained from operating states of a process that generated the industrial gas.

6. The method according to claim 1, wherein, if the industrial gas contains tetrafluoromethane (CF_4), diluent gas is fed at an amount of 1% or less of the volumetric flow of the fuel gas.

7. The method according to claim 1, further comprising feeding an additional oxidant such as air or oxygen a regulated manner into the combustion chamber (**19**) as a function of the chemical composition of the industrial gas.

8. A burner (**1**) for generating a flame (**2**) in a combustion chamber (**19**) for burning perfluorinated compounds in an industrial gas, comprising:

   a feed line (**3**) for a fuel gas to be fed into the combustion chamber (**19**);

   a feed line (**4**) for oxygen to be fed into the combustion chamber (**19**);

   a feed line (**20**) for the industrial gas to be fed into the combustion chamber (**19**);

   an ignition apparatus (**7**) for igniting the gas mixture present in the combustion chamber (**19**);

   another feed line (**5**) for admixing a diluent gas into the fuel gas before the fuel gas and the diluent gas are introduced into the combustion chamber (**19**),

   wherein the additional feed line (**5**) for the diluent gas opens up in the feed line (**3**) for the fuel gas, and wherein the feed line (**3**) and the additional feed line (**5**) are separate from the feed line (**20**) for the industrial gas; and

   a process installation (**26**) that communicates the presence of perfluorinated compounds in the industrial gas prior to introduction into the combustion chamber (**19**),

   wherein the feed of the diluent gas is reduced, substantially discontinued or entirely discontinued when the industrial gas contains perfluorinated compounds.

9. The burner (**1**) according to claim 8, further comprising a flow regulator (**10**) associated with the additional feed line (**5**).

10. The burner (**1**) according to claim 8, wherein the feed lines (**3**, **4**, **5**) each have a flow regulator (**8**, **9**, **10**) and/or a valve (**13**, **14**, **15**) for regulating and/or blocking gas throughput.

11. A waste-gas treatment device (**18**), comprising:

at least one burner (**1**) arranged in a combustion chamber (**19**), for generating a flame (**2**) to burn perfluorinated compounds in an industrial gas according to claim 9;

at least one feeding means (**20**) for feeding the industrial gas into the combustion chamber; and

at least one discharge means (**21**) for discharging thermally treated waste gases from the combustion chamber.

12. The waste-gas treatment device (**18**) according to claim 11, further comprising at least one feed line (**11**) for a reaction gas selected from the group consisting of: an oxidant, a reducing agent, and a mixture of oxidant(s) and reducing agent(s).

13. The waste-gas treatment device (**18**) according to claim 11, further comprising liquid feed lines (**22**) on the side wall of the combustion chamber (**19**).

14. The waste-gas treatment device (**18**) according to claim 11, further comprising flow regulators (**8**, **9**, **10**) connected to a control unit (**23**) that serves to control the flow regulators (**8**, **9**, **10**).

15. A method for burning off perfluorinated compounds entrained in an industrial gas, comprising:

feeding the industrial gas into a combustion chamber of a burner;

mixing a diluent gas with a fuel gas to form a gas mixture, wherein said diluent gas reduces calorific value of the gas mixture relative to the calorific value of the fuel gas alone, and wherein throughput of the diluent gas as a function of the composition of the industrial gas is regulated in order to adapt the diluent gas and fuel gas mixture to a predetermined calorific value to burn off the perfluorinated compounds in the industrial ga so that the feed of diluent gas is reduced when the industrial gas contains perfluorinated compounds, wherein if the industrial gas contains tetrafluoromethane (CF4), the feed of the diluent gas is substantially discontinued or entirely discontinued;

feeding the diluent gas and fuel gas mixture via a feed line separate from the industrial gas into the combustion chamber;

separately feeding oxygen into the combustion chamber; and

then igniting the fuel gas in order to generate a flame for burning the perfluorinated compounds of the industrial gas in the combustion chamber.

16. The method according to claim 1, wherein the diluent gas is nitrogen.