example, US-A-5,076,297 and US-A-5,146,934.

Although many combustible carbon-based heat sources are known in the art, such heat sources are often difficult to ignite with a conventional yellow flame cigarette lighter. Additionally, when used in a heated smoking article, known combustible carbon-based heat sources often do not generate enough heat after ignition thereof to produce an acceptable aerosol during early puffs.

It has been proposed in the art to include oxidizing agents and other additives in combustible carbon-based heat sources in order to improve the ignition and combustion properties thereof. However, generally such additives have only been included in small amounts relative to the total weight of the combustible carbon-based heat source. For example, EP–A1-0 627 174 discloses that oxidants such as perchlorates, chlorates, nitrates and permanganates may be included in the carbonaceous heat sources disclosed therein in an amount of between about 0.05% and 10% by weight of the heat source and preferably between about 0.2% and 4%.

There remains a need for a combustible heat source that generates enough heat to produce an acceptable aerosol during early puffs of a heated smoking article, but not so much heat as to result in combustion or thermal degradation of the aerosol-generating material. Moreover, there is a need for such a combustible heat source that is mechanically and chemically stable at ambient temperatures and humidity and can be ignited easily and rapidly with a conventional yellow flame cigarette lighter.

According to the invention, there is provided a combustible heat source for a smoking article comprising carbon and at least one ignition aid selected from the group consisting of metal nitrate salts having a thermal decomposition temperature of less than 600°C, chlorates, peroxides, thermitic materials, intermetallic materials, magnesium, zirconium, and combinations thereof, wherein the at least one ignition aid is present in an amount of at least 20 percent by dry weight of the combustible heat source, the combustible heat source having a first portion and an opposed second portion, wherein at least part of the combustible heat source between the first portion and the second portion is wrapped in a combustion resistant wrapper that is one or both of heat conducting and substantially oxygen impermeable, and wherein upon ignition of the first portion of the combustible heat source the second portion of the combustible heat source increases in temperature to a first temperature and wherein during subsequent combustion of the combustible heat source the second portion of the combustible heat source maintains a second temperature lower than the first temperature.

Herein disclosed is ~~According to the invention there is provided~~ a combustible heat source for a smoking article comprising carbon and at least one ignition aid, wherein the at least one ignition aid is present in an amount of at least about 20 percent by dry weight of the combustible heat source. The combustible heat source has a first portion and an opposed second portion, wherein at least part of the combustible heat source between the first portion and the second portion is wrapped in a combustion resistant wrapper that is one or both of heat conducting and substantially

oxygen impermeable. Upon ignition of the first portion of the combustible heat source the second portion of the combustible heat source increases in temperature to a first temperature and during subsequent combustion of the combustible heat source the second portion of the combustible heat source maintains a second temperature lower than the first temperature.

As used herein, the term 'ignition aid' is used to denote a material that releases one or both of energy and oxygen during ignition of the combustible heat source.

As used herein, the term 'ignition aid' is used to denote a material that releases one or both of energy and oxygen during ignition of the combustible heat source, where the rate of release of one or both of energy and oxygen by the material is not ambient oxygen diffusion limited. In other words, the rate of release of one or both of energy and oxygen by the material during ignition of the combustible heat source is largely independent of the rate at which ambient oxygen can reach the material. As used herein, the term 'ignition aid' is also used to denote an elemental metal that releases energy during ignition of the combustible heat source, wherein the ignition temperature of the elemental metal is below about 500 °C and the heat of combustion of the elemental metal is at

least about 5 kJ/g.

As used herein, the term 'ignition aid' does not include alkali metal salts of carboxylic acids (such as alkali metal citrate salts, alkali metal acetate salts and alkali metal succinate salts), alkali metal halide salts (such as alkali metal chloride salts), alkali metal carbonate salts or alkali metal phosphate salts, which are believed to modify carbon combustion. As discussed further below, even when present in a large amount relative to the total weight of the combustible heat source, such alkali metal burn salts do not release enough energy during ignition of a combustible heat source to produce an acceptable aerosol during early puffs.

As used herein, the terms 'first portion' and 'second portion' are used to denote two spaced-apart regions of the combustible heat source.

As used herein, the term 'combustion resistant wrapper' is used to denote a wrapper that remains substantially intact throughout combustion of the combustible heat source.

As used herein, the term 'wrapped' is used to denote that the combustion resistant wrapper is around and in direct contact with the periphery of the combustible heat source.

According to the invention there is also provided a smoking article comprising a combustible heat source according to the invention.

~~In particular, according to the invention t~~There is also provided a smoking article comprising a combustible heat source according to the invention; and an aerosol-generating substrate.

According to the invention there is further provided a smoking article comprising a combustible heat source according to the invention; and an aerosol-generating substrate downstream of the combustible heat source, wherein the first portion of the combustible heat source is an upstream end of the combustible heat source and the second portion of the combustible heat source is a downstream end of the combustible heat source.

As used herein, the terms 'upstream' and 'front', and 'downstream' and 'rear', are used to describe the relative positions of components, or portions of components, of smoking articles according to the invention in relation to the direction of air drawn through the smoking articles during use thereof.

Preferably, at least a rear part of the combustible heat source is wrapped in the combustion resistant wrapper.

Preferably, at least a rear part of the combustible heat source and at least a front part of the aerosol-generating substrate are wrapped in the combustion resistant wrapper. In such embodiments, the combustion resistant wrapper is around and in direct contact with the periphery of at least a rear part of the combustible heat source and the periphery of at least a front part of the aerosol-generating substrate.

Preferably, a rear part of the aerosol-generating substrate is not wrapped in the combustion resistant wrapper.

Preferably, a front part of the combustible heat source is not wrapped in the combustion resistant wrapper.

14. A smoking article (2) comprising:

a combustible heat source (4) according to any of claims 1 to 12; and

an aerosol-generating substrate (6) downstream of the combustible heat source (4),

wherein the first portion of the combustible heat source is an upstream end of the combustible heat source and the second portion of the combustible heat source is a downstream end of the combustible heat source.

15. A smoking article (2) according to claim 14 wherein at least a rear part (4b) of the combustible heat source is wrapped in the combustion resistant wrapper (22).

16. A smoking article (2) according to claim ~~1~~15 wherein at least a rear part (4b) of the combustible heat source and at least a front part (6a) of the aerosol-generating substrate (6) are wrapped in the combustion resistant wrapper (22).

17. A smoking article (2) according to claim 16 wherein a rear part (6b) of the aerosol-generating substrate (6) is not wrapped in the combustion resistant wrapper (22).

18. A smoking article (2) according to any of claims 14 to 17 wherein a front part (4a) of the combustible heat source (4) is not wrapped in the combustion resistant wrapper (22).

19. A smoking article (2) according to any of claims 14 to 17 wherein the combustible heat source (4) is wrapped in the combustion resistant wrapper (22) along substantially its entire length.

20. A smoking article (2) according to any of claims 14 to 19 wherein the combustible heat source (4) is substantially cylindrical.