aerosol-formers. During storage and smoking, aerosol-formers may migrate from the aerosol-forming substrates of known heatable smoking articles to the combustible heat sources thereof. This migration of the aerosol-formers can disadvantageously lead to their decomposition, particularly during smoking of the heatable smoking articles. A number of previous attempts have been made to inhibit migration of aerosol-formers from the aerosol-forming substrates of heatable smoking articles to the combustible heat sources thereof (for example, in US-A-4,714,082, EP-A2-0 337 507, EP-A2-0 337 508 and US-A-5,156,170). Generally, such attempts have involved smoking articles in which the aerosol-forming substrate is enveloped within a non-combustible capsule, such as a metallic cage, to reduce migration of aerosol-formers from the aerosol-forming substrate to the combustible heat source during storage and use, but in which the combustible heat source is still allowed to come into direct contact with aerosol-formers from the aerosol-forming substrate during storage and use. Such prior art designs disadvantageously allow for decomposition and combustion gases generated from the combustible heat source to be directly drawn into the mainstream aerosol, make it difficult to use known machinery and methods to produce the smoking article, and can hinder the ability of the smoking article to attain a suitable temperature to provide a satisfactory aerosol during the first few puffs by the consumer.

There remains a need for an improved heatable smoking article comprising a combustible heat source and an aerosol-forming substrate comprising at least one aerosol-former which may be assembled using known manufacturing equipment. There also further remains a need for an improved heatable smoking article comprising a combustible heat source and an aerosol-forming substrate comprising at least one aerosol-former in which migration of the at least one aerosol-former from the aerosol-forming substrate to the combustible heat source is substantially prevented or inhibited. Further, there still is a need to reduce the level of harmful smoke constituents in the mainstream aerosol of a heatable smoking article, like carbonyl compounds, such as formaldehyde, acetaldehyde, proprionaldehyde, and phenolics.

According to the invention, there is provided a smoking article comprising: a combustible heat source with opposed front and rear faces and at least one airflow channel extending from the front face to the rear face of the combustible heat source; and an aerosol-forming substrate comprising at least one aerosol-former downstream of the combustible heat source. A non-metallic, non-combustible, gas-resistant, first barrier coating is provided on substantially the entire rear face of the combustible heat source, which allows gas to be drawn through the at least one airflow channel. wherein the non-metallic, non-combustible, gas-resistant, first barrier coating has an elemental metal or alloy content of less than 50 mole percent.

There is further provided a smoking article according to the invention, wherein the first barrier coating has a thickness of at least about 10 microns.

There is further provided a smoking article according to the invention, wherein the first barrier coating is substantially impermeable to air.

There is further provided a smoking article according to the invention, wherein the first barrier coating comprises clay, glass, or alumina.

There is further provided a smoking article according to the invention, wherein the combustible heat source is a carbonaceous heat source.

There is further provided a smoking article according to the invention, wherein the combustible heat source comprises an ignition aid.

There is further provided a smoking article according to the invention, wherein the ignition aid is an oxidizing agent.

There is further provided a smoking article according to the invention, wherein a gas-resistant, heat resistant, second barrier coating is provided on the inner surface of the at least one airflow channel.

There is further provided a smoking article according to the invention, wherein the second barrier coating is substantially impermeable to air.

There is further provided a smoking article according to the invention, wherein the aerosol-forming substrate comprises homogenised tobacco-based material.

There is further provided a smoking article according to the invention, further comprising a heat-conducting element around and in contact with a rear portion of the combustible heat source and an adjacent front portion of the aerosol-forming substrate.

There is further provided a smoking article according to the invention, further comprising an expansion chamber downstream of the aerosol-forming substrate.

There is further provided a smoking article according to the invention, further comprising a mouthpiece downstream of the expansion chamber.

According to the invention there is also provided a combustible heat source with opposed front and rear faces for use in a smoking article according to the invention having a non-metallic, non-combustible, gas-resistant, first barrier coating provided on substantially the entire rear face thereof, wherein the non-metallic, non-combustible, gas-resistant, first barrier coating has an elemental metal or alloy content of less than 50 mole percent.

According to the invention, there is provided a smoking article for lowering the amount of carbon monoxide produced during combustion of a combustible heat source in the smoking article.

According to the invention, there is provided a smoking article for lowering the amount of certain harmful smoke constituents, such as carbon monoxide, formaldehyde, acetaldehyde, proprionaldehyde and phenolics, which are produced during combustion of a combustible heat source in the smoking article.

According to the invention, there is provided a combustible heat source for lowering the amount of certain harmful smoke constituents, such as carbon monoxide, formaldehyde,