more than one air outlet is provided, one or more air outlets may be provided in the aerosol generating device and one or more air outlets may be provided in the cartridge.

According to another aspect of the invention, there is provided an aerosol generating system comprising: a vaporizer for heating an aerosol-forming substrate; a plurality of air flow vents; and at least one air outlet, the air flow vents and the air outlet being arranged to define an air flow route between the air flow vents and the air outlet; wherein each of the plurality of air flow vents comprises an aperture arranged to direct air towards the vicinity of the vaporizer so as to manage particle size in the aerosol, wherein the air flow vents direct the air towards the vicinity of the vaporizer in more than one direction wherein each of the air flow vents has a diameter of less than or approximately equal to 0.4 mm.

For all aspects of the invention, the storage portion may be a liquid storage portion. For all aspects of the invention, the aerosol forming substrate may be a liquid aerosol forming substrate. The aerosol-forming substrate may contain nicotine. The aerosol-forming substrate may be adsorbed, coated, impregnated or otherwise loaded onto a carrier or support.

The aerosol-forming substrate may alternatively be any other sort of substrate, for example, a gas substrate or a gel substrate, or any combination of the various types of substrate. The aerosol-forming substrate may be a solid substrate.

The vaporizer of the aerosol generating device or system is arranged to heat the aerosol-forming substrate to form a supersaturated vapour. The supersaturated vapour is mixed with and carried in the air flow from the plurality of air flow nozzles towards the air outlet. The vapour condenses to form an aerosol, which is carried towards the air outlet into the mouth of a user. The aerosol generating device or cartridge may further comprise an aerosol forming chamber in the air flow route between the plurality of air flow nozzles and the air outlet. The aerosol forming chamber may assist or facilitate the generation of the aerosol. The aerosol generating device may include the aerosol-forming substrate or may be adapted to receive the aerosol-forming substrate. As known to those skilled in the art, an aerosol is a suspension of solid particles or liquid droplets in a gas, such as air.

Each air flow vent comprises a small aperture, orifice or hole. Each air flow vent may also comprise a nozzle. The small size of the aperture, orifice or hole results in a high velocity air flow through the air flow vent or vent or nozzle. This is because air flow speed may be increased by decreasing the cross sectional area of the air flow path, so as to take advantage of the Venturi effect. That is, the velocity of the air flow increases as the cross sectional area decreases and the air flow through a constricted cross section increases in speed. Each air flow vent or nozzle is arranged to propel, drive or force high velocity air towards the vicinity of the vaporizer. For the cartridge, the air flow vent or nozzles direct the air towards the vicinity of the vaporizer in more than one direction. For the device, the air flow vent or nozzles direct the air towards the vicinity of the vaporizer in more than one direction. The high speed air flow affects

Since the air flow vent or nozzles direct the high the high velocity air in more than one direction, the air may be directed onto more than one portion of the vaporizer. This increases the cooling rate and also increases the likelihood of substantially equal cooling on all sides of the vaporizer.

The air flow vent or nozzles may direct the high velocity air towards the vicinity of the vaporizer in any other desired direction or directions. For example, the air flow vent or nozzles may direct the air in the longitudinal direction of the aerosol generating device or cartridge. Moreover, each air flow vent or nozzle may direct the air in its own respective direction. For example, one air flow vent or nozzle may direct the high velocity air across the surface of the vaporizer and another air flow vent or nozzle may direct the air directly onto the surface of vaporizer.

Any suitable number of air flow vent or nozzles may be provided. The air flow vent or nozzles may have any suitable cross sectional area or diameter which results in the desired air flow velocity in the vicinity of the vaporizer. The vent or nozzles' cross sectional area and diameter will also affect the resistance to draw. The vent or nozzles may have the same or different cross sectional areas and diameters. The vent or nozzles may also have any desired cross sectional shape and the vent or nozzles may have the same or different cross sectional shapes. Advantageously, as mentioned in one of the above aspects of the invention, each of the air flow vents has a diameter of less than or approximately equal to 0.4 mm. This provides high speed, directed air flow. In one embodiment, for a flow rate of 27.5 millilitres per second through the air outlet, the air flow velocity through each of the air flow vents is between 10 and 30 meters per second. The separation of the air flow vent or nozzles and the vaporizer may be set according to the desired cooling rate in the aerosol generating device. The vent or nozzle-vaporizer separation may also affect the resistance to draw. The vent or nozzles may be separated from the vaporizer by the same or different distances. The air flow vent or nozzles may direct the air flow in any direction which results in the desired air flow patterns in the aerosol generating device or cartridge. The vent or nozzles may direct the air flow in the same or in different directions.

The air flow vent or nozzles may be arranged in any suitable pattern which results in the desired cooling rate. Preferably, the air flow vent or nozzles are arranged symmetrically with respect to the vaporizer. This results in a homogenous air flow around the vaporizer, which results in a consistent cooling rate and hence a consistent particle size in the aerosol. Preferably, the air flow vent or nozzles are arranged symmetrically with respect to the longitudinal axis of the aerosol generating device or cartridge. The vent or nozzles may be arranged in a plurality of sets of vent or nozzles. Each set may be longitudinally spaced from other sets. However, one, two, three, four or more sets of longitudinally spaced vent or nozzles