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3.4 Carbonaceous Fraction: III. Wall Interactions 3.4.1 Theoretical; 3.4.2 Experimental; 3.5 Ash Fraction; 3.5.1 Chemical Reactions; 3.5.2 Gas-to-Particle Conversion; 3.6 Organic Fraction; 3.6.1 Preparatory Chemical Reactions; 3.6.2 Chemical Reactions in the Exhaust; 3.6.3 Gas-to-Particle Conversion: Models; 3.6.4 Gas-to-Particle Conversion: Measurements; 3.6.5 White Smoke; 3.7 Sulphate Fraction; 3.7.1 Chemical Reactions; 3.7.2 Gas-to-Particle Conversion; 3.8 Closure; 3.8.1 Carbonaceous Fraction I. Classical Models; 3.8.2 Carbonaceous Fraction II. The Combusting Plume 3.8.3 Carbonaceous Fraction III. Wall Interactions 3.8.4 Ash Fraction; 3.8.5 Organic Fraction; 3.8.6 Sulphate Fraction; 4 Formation II: Location; 4.1 Introduction; 4.2 Within the Exhaust System; 4.2.1 Storage and Release; 4.2.2 Deposition Within Catalysts; 4.3 Within the Exhaust Plume; 4.3.1 Long-term Ageing in the Atmosphere; 4.4 Within the Transfer Line; 4.5 Within the Dilution Tunnel; 4.6 On the Filter; 4.7 Closure; 4.7.1 Within the Exhaust System; 4.7.2 Within the Exhaust Plume; 4.7.3 Within the Transfer Line; 4.7.4 Within the Dilution Tunnel; 4.7.5 On the Filter; 4.7.6 General Remarks

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Sommario/riassunto

The public health risks posed by automotive particulate emissions are well known. Such particles are sufficiently small to reach the deepest regions of the lungs; and moreover act as carriers for many potentially toxic substances. Historically, diesel engines have been singled out in this regard, but recent research shows the need to consider particulate emissions from gasoline engines as well. Already implicated in more than one respiratory disease, the strongest evidence in recent times points to particle-mediated cardiovascular disorders (strokes and heart attacks). Accordingly, legislation