

	Spherical organic carbon particles	Soot (elemental carbon aggregates)	Inorganic ash particles
Schematic drawing			
Diameter measured by electron microscopy*	50-600 nm ^{52, 53}	20-50 nm ^{52, 73}	50-125 nm ⁹⁷
Mobility diameter	100-300 nm ⁶⁸⁻⁷⁰	50-300 nm ^{68, 76}	50-125 nm ^{69, 98, 99}
Internal turbostratic microstructure	No ⁶¹	Yes / No ⁸¹⁻⁸³	No
Solubility (H ₂ O)	Depends on ageing ⁶¹	Insoluble	Soluble
Main chemical characteristic	Organic carbon ^{62, 64, 67} (Most abundant organic compounds: metoxyphenols and monosaccharide anhydrides) ⁵⁷⁻⁶⁰	Elemental carbon with variable amounts of organics condensed on the surface ^{12, 62, 81} (Most abundant organic compounds: hydrocarbons and polycyclic aromatic hydrocarbons) ^{84, 85}	Alkali salts (mainly KCl and K ₂ SO ₄ with small amounts of trace elements (e.g. Zn)) ^{78, 92}
Combustion conditions	Low-temperature, incomplete combustion ^{11, 52-56}	High-temperature, incomplete combustion ⁵²	High-temperature, complete combustion ¹²⁰
Possible sources	Air starved combustion or start-up phase of batch wise combustion in conventional stoves, open fireplaces ^{58,62,64,67}	Combustion in conventional stoves, open fireplaces, boilers for wood, wood chips and pellets ^{14, 52, 75-79}	Combustion in pellets stoves, boilers for wood, wood chips and pellets ^{69, 120}