


Particulates are very fine particles found in the atmosphere and be made of a wide range of different materials from many different sources.

To give a sense of size, a human hair is 50-70 microns in diameter so five to seven times as big as a single PM_{10} particle and over twenty times bigger than a $PM_{2.5}$ particle. Microns are very small indeed – 1 micron is equivalent to one thousandth of a millimetre! The diagram shows how PM_{10} and $PM_{2.5}$ particles sizes compare.

PM_{10} $PM_{2.5}$

Particulate

LOOKS LIKE:




DESCRIPTION:

PM_{10} are tiny particles up to 10 microns in size, $PM_{2.5}$ particules are smaller, up to 2.5 microns in size.

MAIN SOURCES:

- Transport (road and rail)
- Shipping
- Industry
- Sand and seas salt
- Solid fuel burning
- BBQs



When scientists talk about particulates they generally categorise them into two main groups, depending on the size of the particles. PM_{10} is the term given to a group of particles of up to 10 microns in size. $PM_{2.5}$ refers to the group of smaller particulates up to 2.5 microns in size.

$PM_{2.5}$ is made up of finer particles than PM_{10} including organic compounds and some metals. These fine particles are emitted by all types of vehicles and some industrial processes. Other sources include natural sources such as forest/wild fires –

geology suggests that 55 million years ago at Scalers Hill near Cobham in Kent, a series of regular and severe wild fires occurred! Fires still occur in Kent, although they are usually started accidentally or deliberately.

The particles that make up PM_{10} includes $PM_{2.5}$ particles but is also made up of courser particles including dust, pollen and mould. These particles can be produced from human activity through road transport, diesel trains, shipping, industry and solid fuel burning or naturally occurring such as sand and sea salt.

The smaller particles are lighter therefore they stay in the atmosphere longer and travel further. PM_{10} particles can stay in the air for minutes or hours while $PM_{2.5}$ particles can stay in the air for days or weeks.

Maybe you've noticed particulates resulting from sea salt or sand if you live near the coast in Kent? Having said that, even sand from the Sahara Desert can affect the UK as can particulate from human activity on the continent.