

Guidelines on Ambient Chemical-Speciatiated Particulate Monitoring

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The U.S. Environmental Protection Agency promulgated changes to the National Ambient Air Quality Standards (NAAQS), July 1997 40CFR Part 58. These included a new national ambient air particulate standard for "Fine Particulate". The existing ambient particulate monitoring network for Inhalable Particulate, particles 10 μ m and smaller, is being revised to include 1500 sites for measurement of Fine Particulate, particles 2.5 μ m and smaller.

A new requirement of this rule is a modest chemical speciation network of fifty Federal and three-hundred State and Local PM_{2.5} sites across the nation that will provide a first order characterization of the particle mass, trace elements, anions, cations, semi-volatile organic particles and carbon constituents of PM_{2.5}. In addition to development of network design and implementation, EPA is proposing the requirement of ambient meteorology conditions be measured at all chemical speciation Trend and Super-Sites.

The physical and chemical speciation data will be used to support several areas of application including:

- Understanding the effects of atmospheric meteorology and man-made pollutant constituents on visibility impairment.
- Aiding the interpretation of health studies by linking effects to PM_{2.5} constituents.
- Helping to implement the PM_{2.5} standard for both ambient, source and long range transport of Fine Particulate.
- Using the chemical speciatiated particulate data to aid in monitoring network design, control technology and identify sources.