Stationary Source Controls for Ozone:
Future Studies

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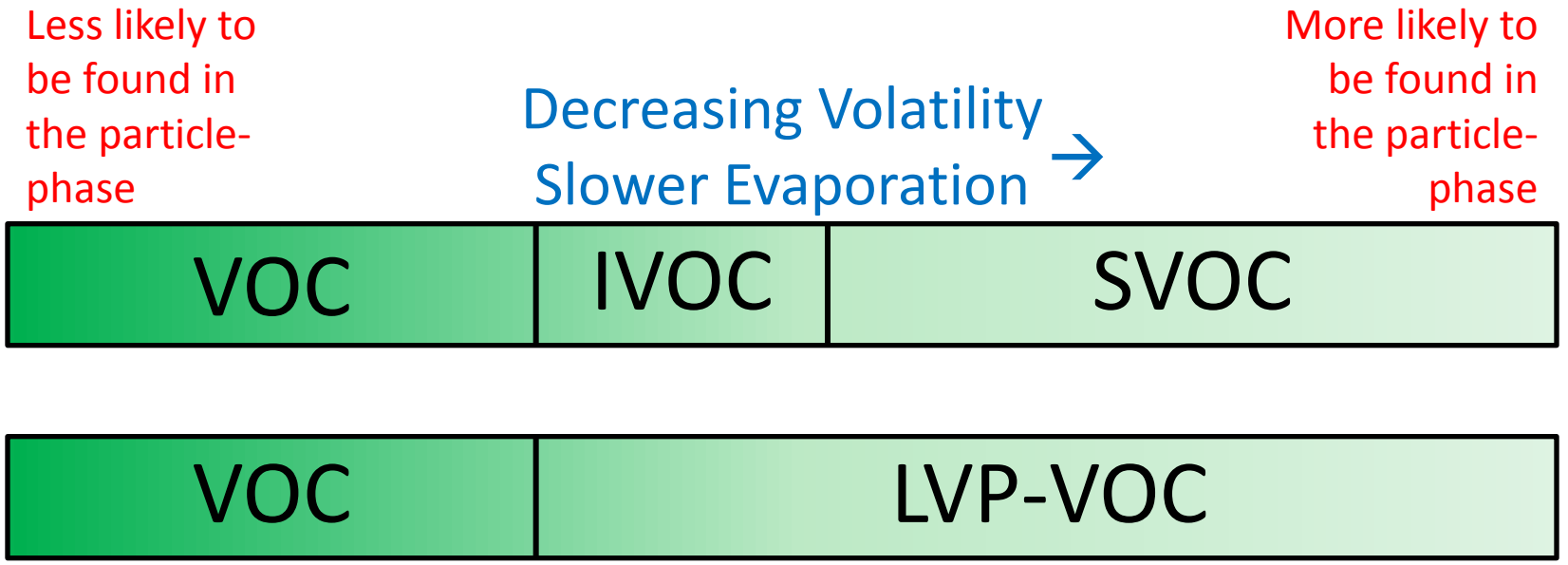
Organic Compounds in the Atmosphere

- Organics are molecules containing carbon
- May exist in the gas phase, particle phase, or both depending on volatility
- Typically classified by volatility

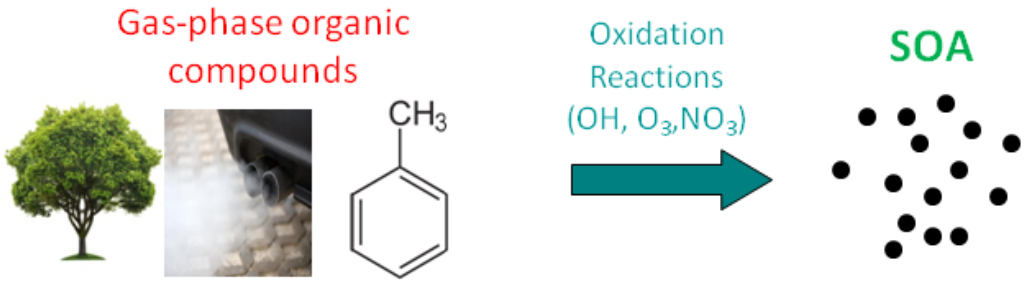


Reactivity of Organic Compounds

- Ozone Formation
  - Species dependent
  - Complex function of NOx and VOC concentrations, sunlight intensity, and temperature
  - VOCs, IVOCs, and SVOCs can produce Ozone

Reactivity of Organic Compounds

- $PM_{2.5}$ Formation
  - Species dependent
  - VOCs, IVOCs, and SVOCs can produce $PM_{2.5}$
  - Primary Organic Aerosol (POA) is formed at source of emissions
  - Secondary Organic Aerosol (SOA) is formed from the oxidation of organic gases in the atmosphere



Opportunities for Future Studies

- Develop IVOC and SVOC emissions inventory for ozone and $PM_{2.5}$ modeling
  - Requires species-dependent and temperature-dependent evaporation rates
  - Should account for mixing effects in complex mixtures
  - Will improve accuracy of regional air quality modeling
- Continued study and parameterization of anthropogenic SOA yields
- More measurements of VOC, IVOC, SVOC emissions and ambient concentrations