



SPECIATE is EPA's repository of organic gas, particulate matter emission source profiles



VOC → methane, ethane, propane, butene, ethene, benzene, toluene, formaldehyde, acetaldehyde...

PM_{2.5} → elemental carbon, organic carbon, nitrate, sulfate, silicon, manganese, lead, iron, calcium...

OTHER → speciated mercury, NOX, SVOC

Maintaining/updating this database is a collaborative effort by the EPA SPECIATE Workgroup

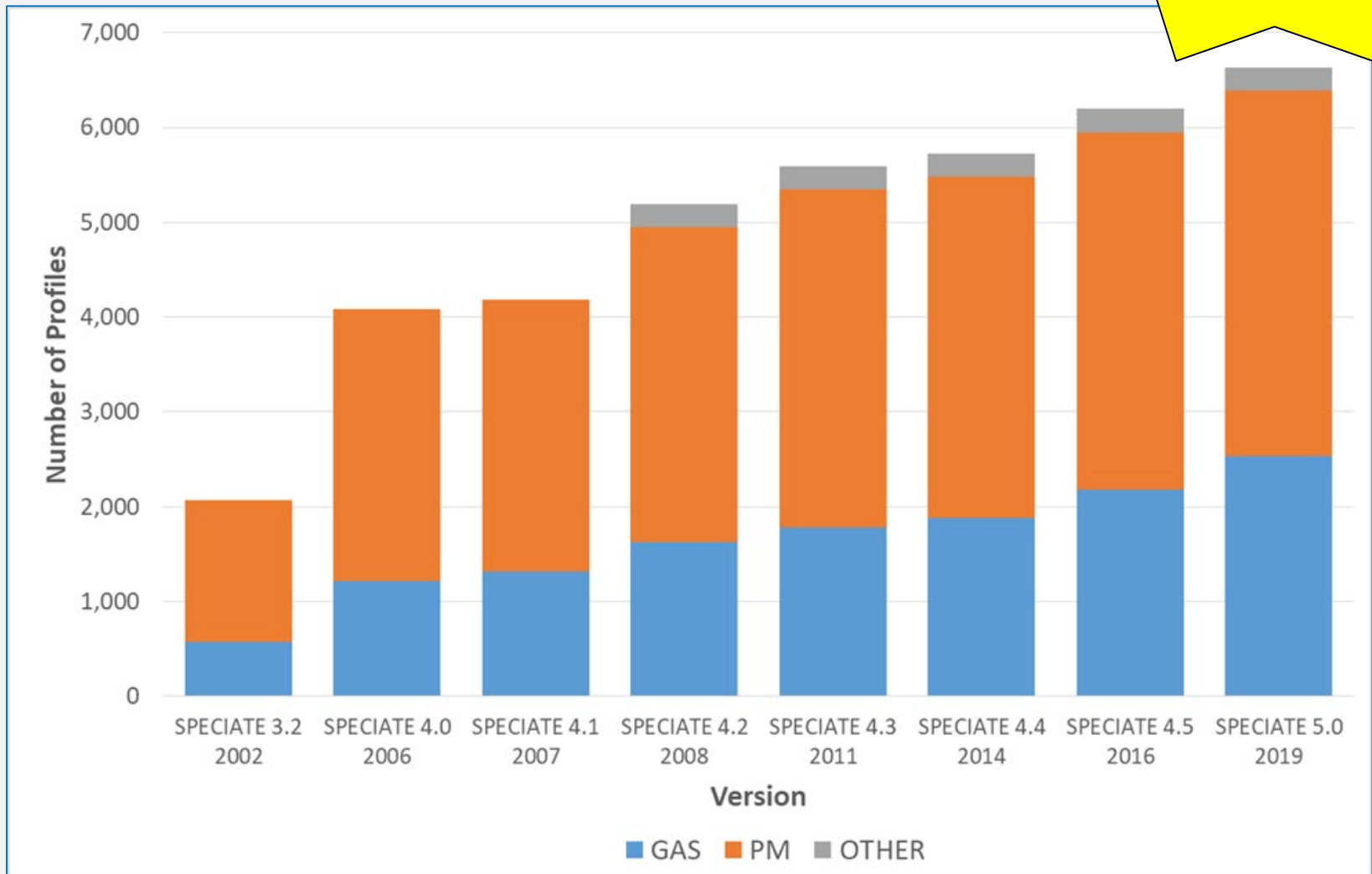


Critical for simulating atmospheric chemistry using emission inventories

- Inputs for air quality models
- Black carbon inventories
- Source apportionment
- Can be used to estimate air toxics emissions

History of the SPECIATE Database

**SPECIATE5.0:
6,654 profiles**





SPECIATE5.0 Highlights

- Added organic gas and particulate matter profiles
 - Oil and gas profiles
 - Updated consumer products profiles
 - First set of volatility basis set profiles
- Structural improvements and additional metadata
- New quality assessment
- User friendly Qlik[®] browser – every field is searchable, easy to download into Excel[®]

<https://www.epa.gov/air-emissions-modeling/speciate>

Improving External Collaboration

Poster
Session

- Assessment of SPECIATE profiles

Bray, et. al, "An assessment of important SPECIATE profiles in the EPA emissions modeling platform and current data gaps"
Atmospheric Environment, 207 (2019) 93-104

- Fires (VOC & PM)
 - Oil and gas (VOC)
 - Coal Combustion (PM)
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- SPECIATE: Guidelines for Data Developers



Come See SPECIATE- Related Posters and Presentations!

- “Carbon in the NEI” – lightning talk!
- Poster session – Tuesday PM
- Modeling session – Wednesday AM
- Q&A with EPA – Thursday PM
- Toxics/Speciation session – Friday AM

Contact Madeleine Strum (strum.madeleine@epa.gov)
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