

NPL Capabilities

Nick Allen

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Introduction to The National Physical Laboratory

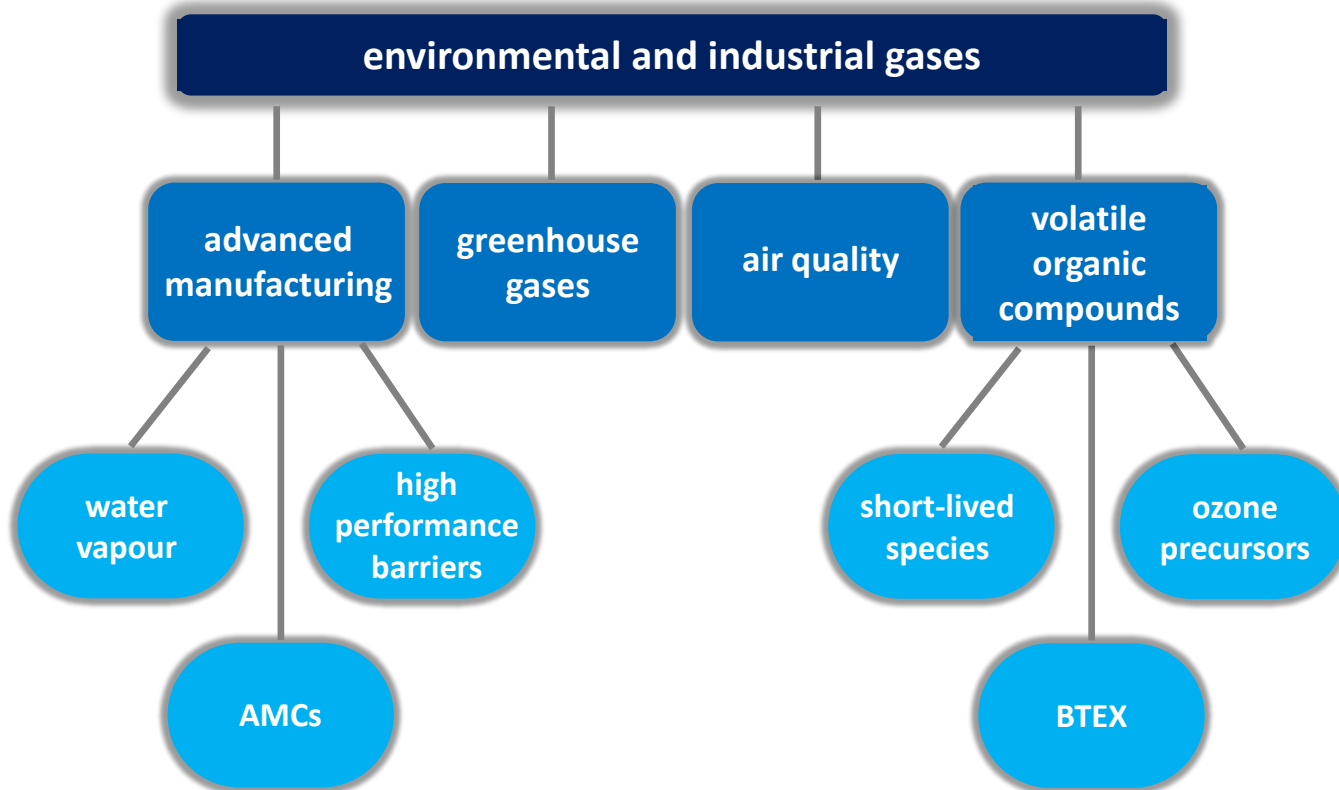
- NPL is located in Teddington on the outskirts of south west London
- NPL employs over 500 scientists
- NPL is the UK's National Measurement Institute



Role of NPL as a National Measurement Institute

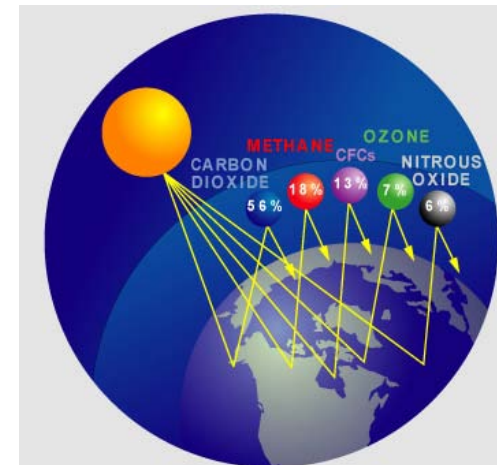
- ‘NPL is the UK’s National Measurement Institute, and is a world-leading centre of excellence in developing and applying the most accurate measurement standards, science and technology available’
- These standards underpin the National Measurement System infrastructure of traceability throughout the UK that ensures accuracy and consistency of measurement

Overview



NPL's role in Atmospheric Monitoring

- Entrusted by Defra, the Environment Agency and NERC to lead UK monitoring networks
- Provision of traceable measurements for climate change models and a basis for stable and comparable measurements of the highest impact greenhouse gases
- Metrology to underpin global monitoring of key compounds which alter the oxidising capacity of the atmosphere and affect public health
- A traceable infrastructure for ambient pollutants to meet regulatory needs



Volatile Organic Compounds

VOCs are ozone precursors

Development of stable reference standards for:

- Oxygenated VOCs
- Terpenes
- Formaldehyde

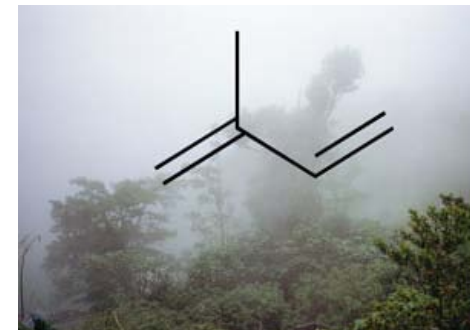
Dynamic reference standards for:

- Formaldehyde
- VOCs by diffusion for microscale GC applications

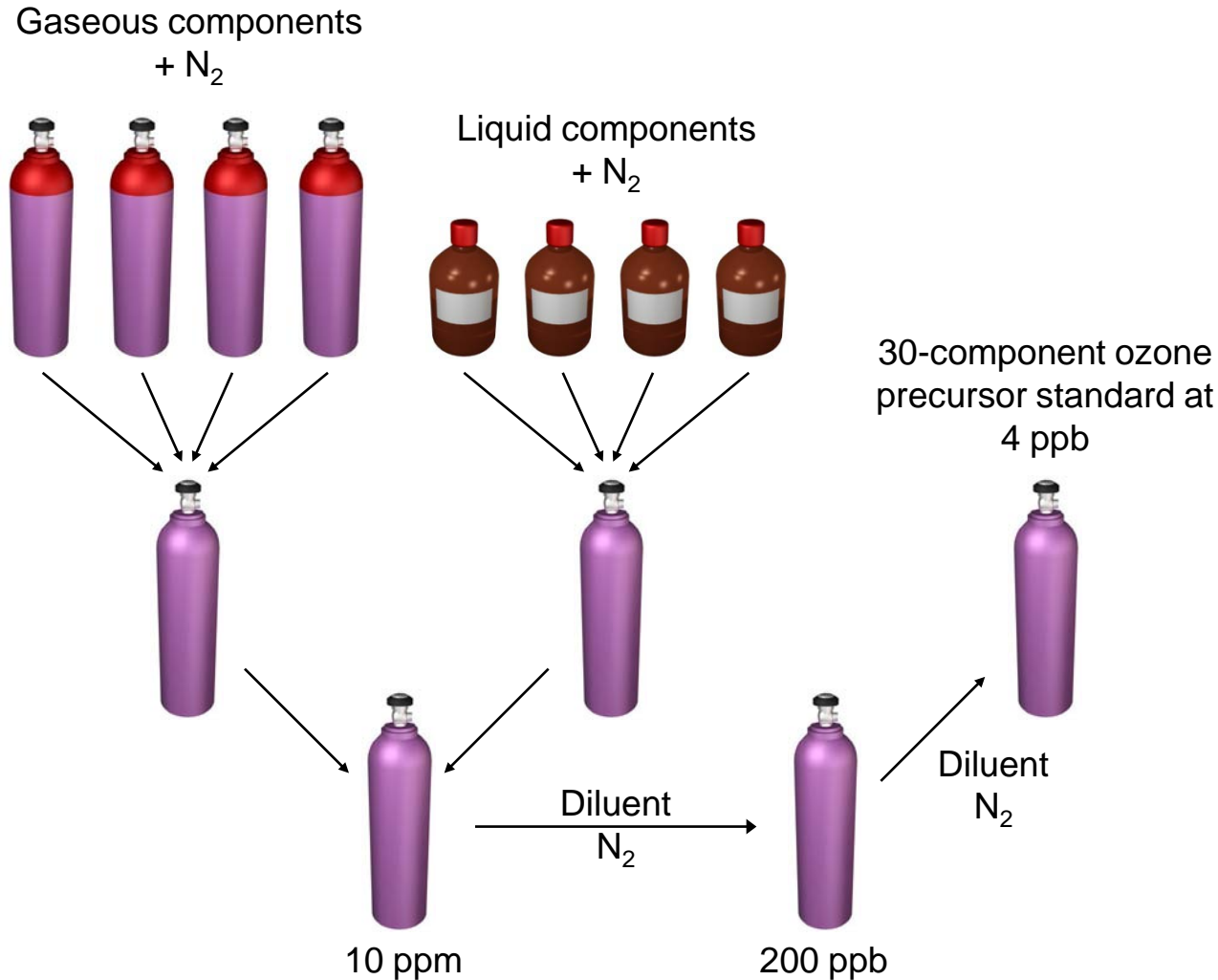
Disseminate standards to GAW

Underpin work towards NERC objectives

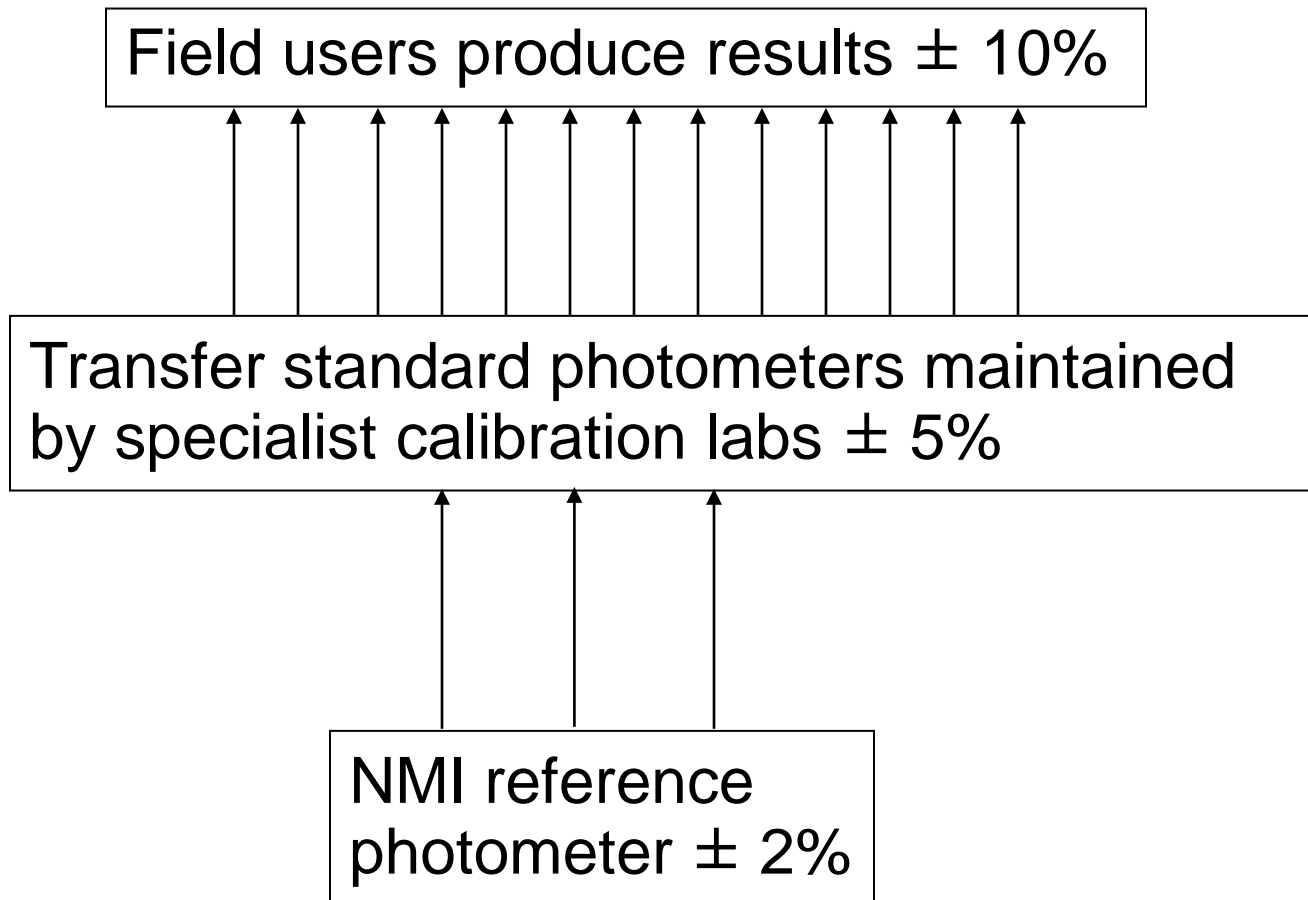
Disseminate standards to the WMO



NMIs make cylinder mixtures of known composition (primary standards) e.g. by gravimetry (traceable to mass).

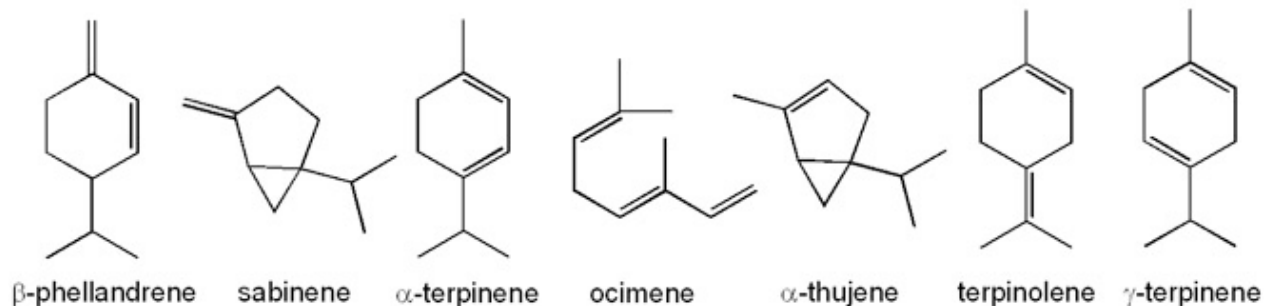
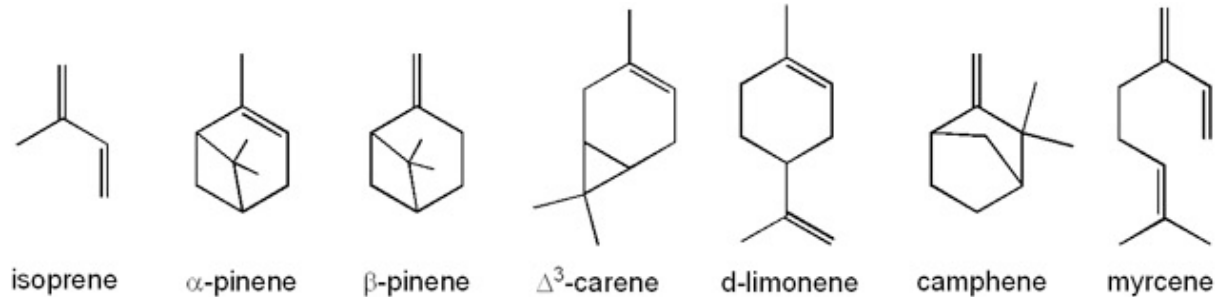


Instead of making primary standards, NMIs have national reference instruments, for ozone e.g. NIST photometers.



Future ozone standards

- NPL will continue to calibrate and underpin monitoring networks and ozone precursors
- NPL will continue to develop new standards for ozone precursors e.g. terpene species



National Measurement System



The National Measurement System delivers world-class measurement science & technology through these organisations



The National Measurement System is the UK's national infrastructure of measurement Laboratories, which deliver world-class measurement science and technology through four National Measurement Institutes (NMIs): LGC, NPL the National Physical Laboratory, TUV NEL The former National Engineering Laboratory, and the National Measurement Office (NMO).