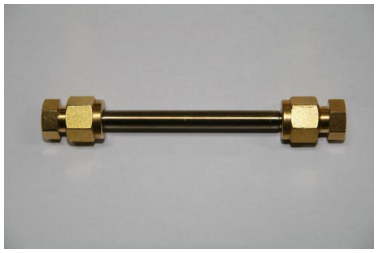
Environment – Air : Primary Standards

Ambient and indoor air standards (BTEX, NO_2, Formaldehyde)



Matrix reference material for Volatile Organic Compounds (VOCs)

One of the key missions of the Chemical and Biological Metrology Laboratory of LNE is to establish the metrological traceability and to assess the uncertainty of analytical measurements. To this end, LNE implements primary reference methods and produces Certified Reference Materials (CRMs), for various applications in the field of industrial, environmental and health analysis.

CRMs are metrological tools to achieving the traceability of measurement results and therefore ensuring reliability and comparability of results of chemical analyses everywhere in the world. Ensuring traceability is moreover a requirement of ISO/CEI-17025 standard.

CRMs are mainly used to carry out analytical instruments calibration and analytical procedures validation.

All reference materials produced by the Chemical and Biological Metrology Laboratory of LNE are **Certified** Reference Materials, meaning that the traceability to SI (International System of Units) is fully ensured through primary methods of measurement. The quality of each CRM is fully documented in the certificate describing the way the traceability is established and providing the uncertainty of the certified value.

Most of the CRMs produced are covered by CMCs (Calibration and Measurement Capabilities) published in the BIPM (Bureau International des Poids et Mesures) database ensuring the equivalence of LNE capabilities with the other National Metrology Institutes worldwide. Accreditation against ISO Guide 34 for CRMs production is currently in progress.

Matrix reference material for nitrogen dioxide (NO_2)

Air quality is a major concern of our society. Among the many compounds that could be harmful for human health, Volatile Organic Compounds (VOCs), aldehydes and nitrogen dioxide belong to the most monitored and regulated pollutants.

To enable the validation of analytical protocols and to ensure the traceability and the accuracy of measurements of ambient and indoor air, LNE has developed a method for loading compounds onto sorbent tubes by using gas standards.

These matrix reference materials are useful for laboratoires of environmental analysis and laboratories of occupational exposure for calibrating analysers and validating the analytical methods.

A matrix reference material containing different VOCs monitored in ambient and indoor air is available at LNE. Available matrix reference materials : benzene and toluene on sorbent tubes (e.g. carbograph 4, carbopack X, carbopack B)

On going development of matrix reference materials for :
Other VOCs, Formaldehyde and other aldehydes, Nitrogen dioxide on sorbent tube

Regulations : European directives such as 89/106/CEE for construction products, such as 2008/50/CE for air quality …

Mass range : Typical range is ng to µg depending on the compound.

Conditioning : The certified mass of the compound is loaded on a sealed sorbent tube.

Availability : Now available or available soon, depending on the compound.

Approximate price : 120 - 150 € HT per sorbent tube.

Contact person : Tatiana Macé (tatiana.mace@lne.fr)
Marie-Caroline Schbath (marie-caroline.schbath@lne.fr) or metrology@lne.fr