20NRM04 MetrIAQ

Metrology for the determination of emissions of dangerous substances from building materials into indoor air

WP 1 Development of ERM, gPRM and gCRM to improve the QA/QC of the emission test chamber method according to EN 16516

The aim of this work package is to develop an emission reference material (ERM), gaseous primary reference materials (gPRM) and finally gaseous certified reference materials (gCRM) to ensure the QA/QC of the emission chamber test method, as described in EN 16516. The ERM, gPRM and gCRM will contain and release relevant compounds (such as glycols, aldehydes, terpenes, alcohols, aromatic hydrocarbons, isothiazolinones); that are typically emitted by construction products, within the range of the EU-LCI-list; with a focus on compounds that have low LCI values, i.e. near the detection limit.

In Task 1.1, a list of relevant compounds for the ERM, gPRMs and gCRMs will be drawn up, in consultation with the experts of the EU-LCI working group. This working group will also participate as a member of the project's stakeholder advisory board (SAB). The application of the ERM will not be limited to the test method of EN 16516 and will be suitable for the QA/QC of test procedures requiring the use of emission test chambers.

In Task 1.2, the ERM will be developed to provide temporarily constant emission profiles, or at least a significantly decelerated decline of the emission profile over time, in order to obtain measurable chamber air concentrations. The project will aim to achieve a consistent emission profile that decreases by less than 10 % over a target period of at least 14 days, to ensure improved determination of the recovery in the test chamber.

In Task 1.3, gPRM and gCRM of indoor air pollutants stated in the EU-LCI list will be developed. The availability of gases in cylinders will be tested and a traceability chain will be established, from the gPRM to measurement data obtained for emissions of dangerous substances, from building materials into indoor air. Using the gPRM reference values for the composition of other gas mixtures can be assigned making the gas mixture a gCRM.

This work package is directly linked with WP2, where the transport processes inside the ERM and the compound release into test chamber air will be modelled. Finally, the validation of the ERM and gCRM developed will be carried out in WP3.

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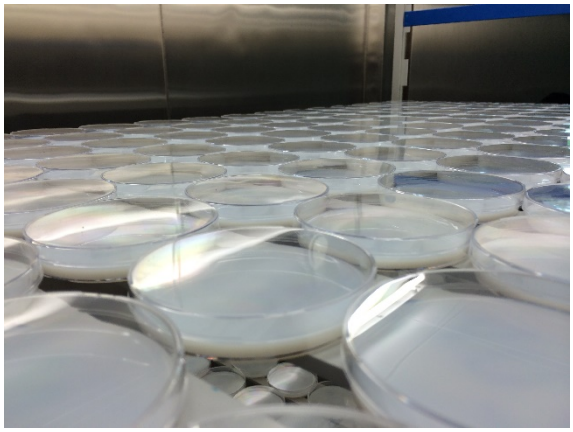

Emission Reference Material on lacquer basis (ERM, left side) and gaseous Certified Reference Materials (gCRMs, right side).
Source: BAM, VSL

Work package leader: Bundesanstalt für Materialforschung und -prüfung (BAM)

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