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ECOS-HABITAT: Expositions cumulées aux Composés Organiques Semi-volatils dans l'habitat: risques pour le développement de l'enfant / Contribution des poussières sédimentées à l'exposition : contamination des logements français

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This study is part of the ECOS-habitat project which aims at assessing health risks related to indoor cumulative exposure to Semi-Volatile Organic Compounds (SVOC).

The first objective of this study is to develop and evaluate an analytical measurement method for selection of SVOC found in settled house dust based on their health risk. The dust was collected either by household vacuum cleaner or wipe. The method was developed for 55 compounds, and evaluated in application of French standards NF T 90-210 and XP T 90-220. It consists in 1) an high temperature and pressure solvent extraction (vacuumed dust) or ultrasonication (wiped dust) 2) an injection and gas phase chromatographic separation 3) a detection by tandem mass spectrometry.

The second objective is to test various storage, pretreatment and duration conditions. To achieve this, a homogenous sample was made up and then stored in various time, temperature, packaging and lightness conditions. No influence of time is noticed when dust is stored at -18°C. Nevertheless time and above zero temperatures are influencing concentrations for a few compounds. Thus storage time and temperature recommendations are provided. These findings allow further steps of the ECOS project.

Keywords: Semi-Volatile Organic Compounds, GC/MS/MS, analytical development, sample conservation, settled dust