Changes in indoor pollutants since the 1950s

Over the past half-century there have been major changes in building materials and consumer products used indoors. Composite-wood, synthetic carpets, polymeric flooring, foam Cushioning, plastic items and scented cleaning agents have become ubiquitous. The same is true for mechanical and electrical appliances such as washer/dryers, TVs and Computers. These materials and products emit an array of chemicals including solvents, unreacted monomers, and additives. The consequent changes in emission profiles for indoor pollutants have been accompanied by modifications in building operations. Residences and non-residences are less ventilated than they were decades ago. Air-conditioned buildings are more numerous, especially in certain parts of the World. Most of these recirculate a high fraction of their air. The personal habits of building occupants, including the fraction who smoke indoors, have also changed. Taken together, these changes have altered the kind and concentrations of chemicals that occupants are exposed to in their homes, workplaces and schools. Since the 1950s, levels of certain indoor Pollutants (e.g., formaldehyde, aromatic and chlorinated solvents, chlorinated pesticides, PCBs) have increased and then decreased. Levels of other indoor pollutants have increased and remain high (e.g., phthalate esters, brominated flame-retardants, nonionic surfactants and their degradation products). Many of the chemicals presently found in indoor environments, as well as in the blood and urine of occupants, were not present 50 years ago. Given the public's exposure to such species, there would be exceptional Value in monitoring networks that provided cross-sectional and longitudinal information regarding Pollutants found in representative buildings.

General information
Publication status: Published
Organisations: Section for Indoor Environment, Department of Civil Engineering
Contributors: Weschler, C. J.
Pages: 153-169
Publication date: 2009
Peer-reviewed: Yes

Publication information
Journal: Atmospheric Environment
Volume: 43
Issue number: 1
ISSN (Print): 1352-2310
Ratings:
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.979 SNIP 1.467
Web of Science (2009): Indexed yes
Original language: English
Keywords: Smoking, Body burden, Air conditioning, Indoor chemistry, Pesticides, Organics, Flame-retardants, Endocrine disrupters, Plasticizers, Building materials
DOIs:
10.1016/j.atmosenv.2008.09.044
Source: orbit
Source ID: 243080
Research output: Contribution to journal › Journal article – Annual report year: 2009 › Research › peer-review