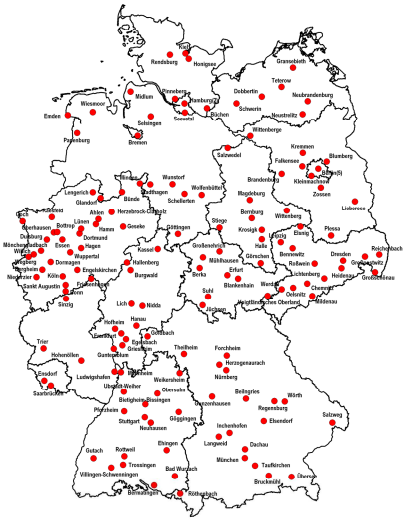
## GerES (German Environmental Survey)

4 large Environmental Surveys from 1985 up to 2006 permit to monitore time trends in amount and prevalence of VOC in the Indoor Air of representative homes in Germany
- last one exclusively on children

All surveys were conducted in cooperation with German Health Surveys



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**nationwide cross-sectional population study**

**The main goals of GerES are to analyse and document the <u>extent, distribution and determinants of exposure to environmental pollutants of the general German population.</u> Three main instruments of investigation were comprised in GerES: human biomonitoring, monitoring of the domestic environment, collecting data on exposure factors via questionnaires as well as the measurement of noise and detection of hearing impairments.**

**Monitoring the domestic environment is vital to detect indoor exposure pathways and to quantify their contribution to overall exposure.**

# Exposure pathway indoor air

| Analyte | GerES I | GerES II | GerES III | GerES IV |
|---|---|---|---|---|
| VOC in indoor air | ☑ | | | ☑ |
| VOC in personal air | | ☑ | | |
| HCHO in indoor air | ☑ | ☑ | | ☑ |

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# Health related modules

**Irritation of eyes and the respiratory system due to formaldehyde and other aldehydes, or VOC in indoor air (N=600)**

- questionnaire data (symptoms, exposure sources)
- formaldehyde, aldehydes and VOC in indoor air

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..But of course also the whole biomonitoring..

## VOC in IA, Data published in Jan 2008

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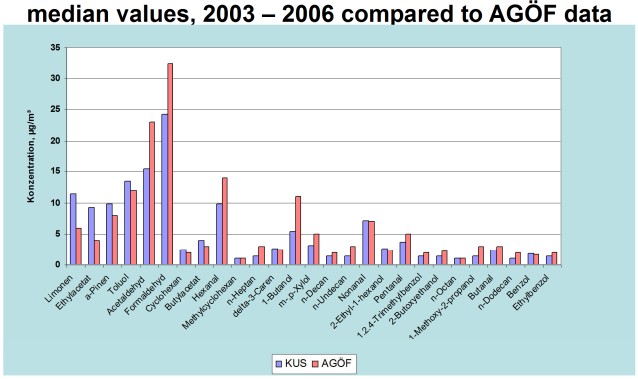
**International Conference on IAQ and Construction Materials:**
**Recommendations for a European Labelling System**

AgBB – Ausschuss zur gesundheitlichen Bewertung von Bauprodukten

**Recent data of the German Environmental Survey, median values, 2003 – 2006 compared to AGÖF data**




Luxemburg 06 November 2007 — 3rd Meeting of the Working Group of Indoor Air Quality Experts 5

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Here I cannot avoid to come back to those VOC among the Priority substances cited by Ispra and VITO, the short list..

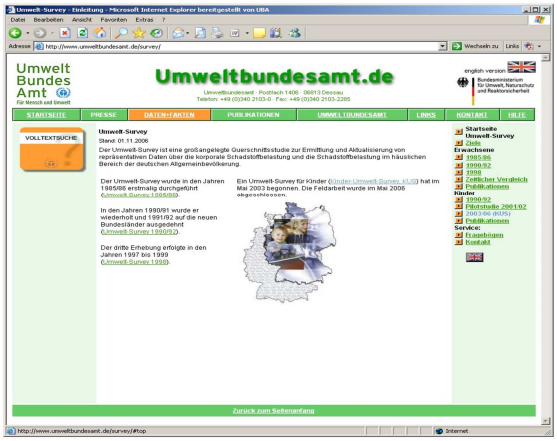
Toluene and Naphthalene

data about actual exposition show constant decline for Toluene

and low prevalence for N, at least in Germany

different situation in Greece because of mothballs! Eastern EU-countries?

# www.umweltbundesamt.de/survey

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please have a closer look at

## *Emission sources of indoor air pollutants*

- Construction materials
- Fixtures and fittings
- Home furnishings
- Intermediate catabolic products of residents
- Cleaning agents and home care products
- Body care products

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Many materials and many human activities are possible sources of indoor air pollutants.

Major sources are indicated in this slide.

## *Actions to reduce indoor air contaminants*

- Reduction of emissions
- Definition of guideline values
- Risk communication, rising awareness
- Ventilation

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Depending on the source of the indoor air pollutant different procedure are required to obtain successful pollutant reductions.

Anyway it is not trivial to find the sources of indoor air contaminants!

The best method to get rid  bad air is regular aeration / ventilation – but odours are a special problem…

Care for energy saving measure! Sustainability!

## *Chemical groups with priority for guideline values*

- **Aldehydes**
- **Glycolethers**
- Terpenes
- Phthalates
- Biocides
- Polychlorinated biphenyls

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**The major goal of defining guideline levels for indoor air pollutants is to identify concentrations above which reductions measures should be taken.**

In the mid-nineties a group of experts (Indoor Air Hygiene Commission) in Germany started work to derive guideline values for indoor air pollutants. The method has been published 1998 (in English).

**As the Environmental survey indicates a significant rise in Glycolethers and Aldehydes, these groups are focused now.**

**Emission pattern from building products do confirm the findings, toxicological relevance**

## *Help by REACh?*

- raising concentrations in indoor air as consequence of energy saving measures

- Emitted substances differ from declared content
- REACh will not close every gap:
- reaction products
- degradation products
- wood products
  not adressed by REACh for the time being

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**REACh will not close every gap**

**reaction products**

**degradation products**

**wood products**

**are not adressed by REACh**

**THANK YOU FOR YOUR ATTENTION!**