Are national binding occupational exposure limit values comparable?

Dr. Doris Koppisch & Christian Schumacher
Institute for Occupational Safety and Health of the German Social Accident Insurance (IFA)

Op de bres voor Arbeidshygiëne

NVvA Symposium 2015, Zeist
19.03.2015
Topics – so much to do in such short time …

Focus on airborne substances & measuring of inhalation exposure

- Issue: Finding the right OELV
- Definition & setting of OELV
  - Casus NL
- Comparison of binding OELV in EU
  - Casus health-based
- Issue: Compliance testing
- Focus on the target
  - Focus on the target, focus on the target, …
History of IFA

1935 Foundation Dust-Combating Agency in Berlin

1948 Rebuilding of the Dust Research Agency in Bonn

1953 Inauguration of the new Dust Research Institute (STF)

1975/76 Amalgamation STF + noise-combating- + silicosis research institute

1980 German Social Accident Insurance Institution for trade & industry (BG) institute for occupational safety“ (BIA) in Sankt Augustin

2003 Reorganisation BG-Institute for occupational safety and health (BGIA)

2007 Institute for Occupational Safety & Health (BGIA) of the German Social Accident Insurance (DGUV)

2010 Change of abbreviation from BGIA to IFA
IFA-Mission (2013)

- **Chemical analyses**: 24%
- **Testing**: 14%
- **Infra-structure**: 7%
- **Advice**: 28%
- **Research**: 27%

**Applied research:**

- **25 %** in the field of accident prevention
- **75 %** in the field of occupational diseases and work-related health risks
Find the right OELV

• Compliance testing on basis of measurements & „legal requirement“
  • You need: Substance + OELV + measurement result
  • You conclude: Exposure comply with OELV or not

• No legally binding OELV?
  • No problem; make it „private“
  • Look for health-based OELV or international OELV

• But - are occupational exposure limit values comparable?
  • No!

• And now …???
Definition & setting of OELV

• Definition OELV in EN 1540
  • Limit of the time-weighted average
  • of the concentration of a chemical agent in the air
  • within the breathing zone of a worker
  • in relation to a specified reference period, …
  • usually 8 h for long term & 15 min for short term measurements

• OELV can be everything;
  • Must not be legally binding
  • Must not set health-based

• See NL “publieke vs. private grenswaarden”, but also other countries!
Comparison of binding OELV in EU

• Casus: you want to find a health-based OELV
  • Legally binding OELV not only in NL not always health-based
  • Even health-based OELV of scientific committees can differ

• In Austria
  • Health-based or technical-derived

• In France
  • Health-based, then feasibility, then politics

• In Germany
  • Health-based or risk-based then feasibility, then politics
Compliance testing

- *However;* OELV is not the problem
- Compliance
  - Fulfilment of specified requirements
- Depending on the goal of the assessment (=requirements) an industrial hygienist use certain justification in their compliance testing, e.g.
  - Legally binding OELV
  - Recommendation of scientific committees
  - Limit values provided by
  - Technical derived or risk based numerical criteria
PDC - Testing Compliance with Occupational Exposure Limits for Airborne Substances

e.g.
Find and choose the right limit value out of different numerical criteria
Focus on the target, not the ball

- Legal occupational exposure limit values
  - BOELV, National OELV, Indicative OELV
- Recommendation of scientific committees
- OELV provided by suppliers
- Technical derived OELV or risk concentrations
- Risk-based OELV
  - Acceptable or tolerable risk concentration
  - Technical risk concentration
- Action or in-house limit value
So no problems left?

• Substance + OELV + measurement result
  • What measurement strategy to use?

• Focus on the target – remember???

• NVvA/BOHS guideline -> EN 689 -> please include EU-wide examples for „targets“

• Germany
  • Arbocatalogues = 72 measurements per substance!!!

• France
  • Legally binding OELV = 9 measurements per substance
So … what can the occupational hygienist do?

• Focus on the target
  • Target: Legal compliance vs. health at the workplace

• Legal compliance
  • Public OEL, BOHS/NVvA measuring strategy

• Health at the workplace
  • Qualification of the observer: *enough expertise*?
  • Basic information of the workplace: *enough information*?
  • Quality of measuring & analytic system: *metric/numbers correct*?
  • …
At the end their is … the expert

• In Germany a German Social Accident Insurance Institution may take the responsibility for the employer
  • Focus on the efficiency of the control measures set & used!

• Target: efficiency of the risk measurement measures
  • Expert judgement

• Not scientific?
  • Qual. of observer, measuring, analysis, etc. … remember???
  • Bayesian statistics
PDC Bayesian Statistics: Overview & Practical Applications in Exposure Assessment Data Interpretation

See you in London?

IOHA 2015, London
25 - 30 April 2015
Vielen Dank für Ihre Aufmerksamkeit

www.dguv.de/ifa

Questions

• Kunnen ook in het Nederlands

• Maar dan;
  • kort en krachtig a.u.b.
  • geeft u tijd voor het antwoord

• Immers;
  • ik moet ze nog vertalen …. 😊