

Occupational safety: Biological agents

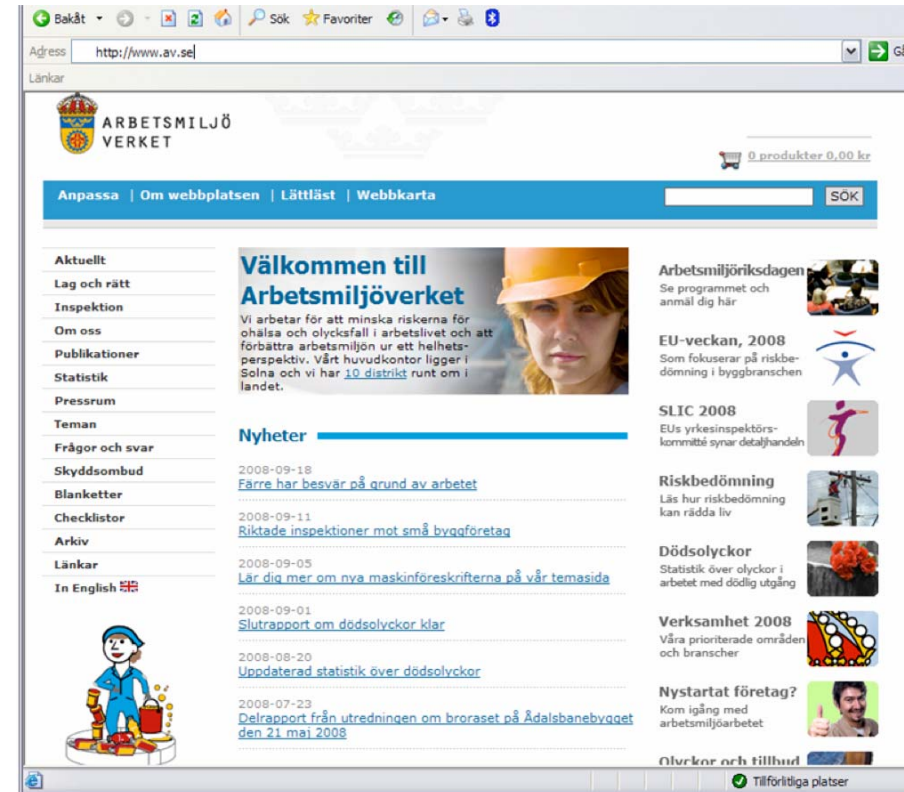
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Chemical, microbial and physical factors

Swedish Work Environment Authority

Swedish Work Environment Authority (SWEA)

www.av.se

Arbetsmiljöverket



Swedish Work Environment Authority

- **Inspections – districts (re-organisation)**
- **Provisions (AFS) – experts in Solna (moving)**
- **Information – website www.av.se**
- **International work – EU, standards etc.**
- **Statistics**

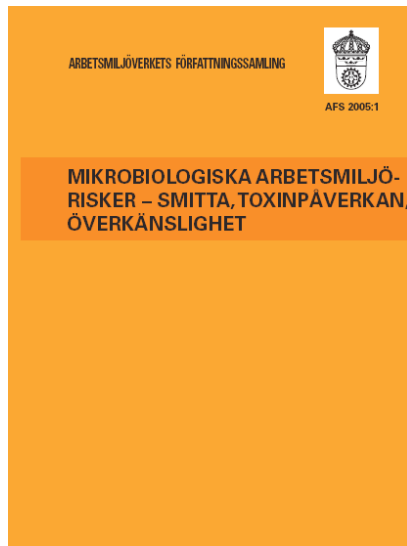
EU directives and Swedish law

EU directives must be incorporated into national law



- **Swedish Work Environment Act**
- **Work Environment Ordinance**
- **AFS – Provisions from Swedish Work Environment Authority**

AFS 2005:1 – Microbiological Work Environment Risks



- Risk assessment
- Safety measures
- Planning of work
- Facilities, equipment
- Decontamination, hygiene
- Knowledge, instructions
- (Notification, authorisation)

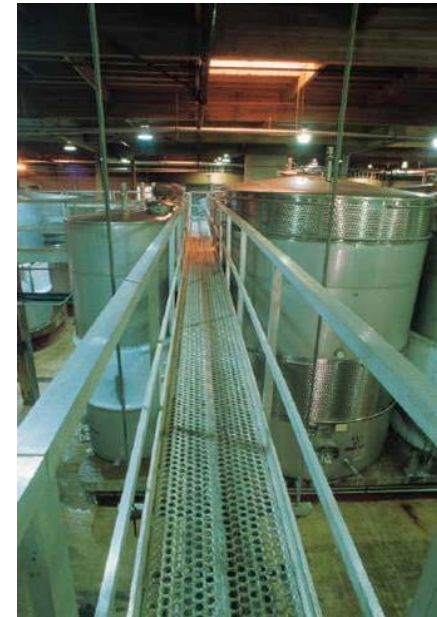
Biological agents – more than prokaryotes

- **Bacteria, viruses, viroids**
- **Prions**
- **Micro-fungi**
- **Human endoparasites**
- **Cell cultures of higher organisms**



Different situations – different risks

- R&D – laboratory work
- R&D – pilot plant, field trials
- Production – large scale culture
- Production – formulation
- Production – package, marketing



Risk assessment (Appendix 1)



- Risk identification
- Possibility of microbial growth (includes moulds)
- Nature of exposure
- Intended use means extended risk assessment
- Documentation

Risk factors

- **Infectious agents**
- **Spores from mould**
- **Endotoxins**
- **Toxins as by-products**
- **Contaminations**
- **Handling**
- **Growth promoting environment**
- **Product protection vs. worker protection**



Classification criteria (Appendix 2A)

- **Risk group 1 – do not normally cause infections in humans**
- **Risk group 2 – diseases; self-healing, no severe after-effects; prophylaxis or treatment available**
- **Risk group 3 and 4 – severe diseases, serious consequences; highly contagious; no or insufficient treatment**

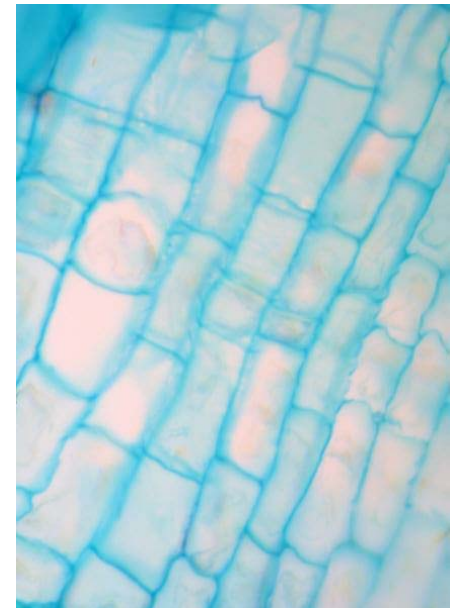
Safety measures (Appendix 3)



- **Based on risk assessment**
- **Good practice**
- **Tables for laboratory, animal and large scale work**
- **Facility, equipment**
- **Instructions, routines**
- **Protective clothing**

Use of risk group 1 organisms

- **No human infections**
- **Good Practice**
- **Safety measures on level 1, depending on work**
- **Documentation of risk assessment**
- **Renewal of risk assessment**



Use of risk group 2 organisms

- **Safety measures on level 2**
- **Written instructions**
- **Small scale use must be notified before first use**
- **Large scale use (>500 l) must have authorisation before use**



Examples of other Provisions

- **AFS 2001:1 Systematic Work Environment Management**
 - **AFS 2000:42 Workplace Design**
 - **AFS 1997:10 Laboratory Work with Chemicals**
 - **AFS 2000:4 Chemical Hazards in the Work Environment**
 - **AFS 2002:1 Use of Pressure Retaining Devices**
 - **AFS 1990:11 Work with Laboratory Animals**
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Summary

- **AFS 2005:1 is always applicable**
- **Biological agents are more than prokaryotes**
- **Risk assessment, documentation, safety measures are central**
- **Notification or authorisation for work with risk group 2**
- **Other Provisions apply**