

## **MEASE – How to reflect metal-specific aspects in first tier exposure assessments for workers?**

**Daniel Vetter\*, Rüdiger V. Battersby\*, Jutta Schade\***

**\* EBRC Consulting GmbH, Hannover, Germany**

### **Abstract**

Various first tier assessment tools are available for the assessment of occupational exposure as required under the REACH regulation. While most of these tools are thereby covering a broad range of chemical substances on a generic basis (and therefore predominately address organic substances), MEASE was developed as a first tier screening tool specifically for the assessment of occupational inhalation and dermal exposure to metals and inorganic substances. For inhalation exposure, the tool follows the PROC-specific approach of the ECETOC TRA model and selects initial exposure estimates from three so-called "fugacity classes". The initial exposure estimates for PROCs 21-27a in MEASE were modified by reference to monitoring data from the metals industry. For dermal exposure, MEASE is based on the classification system of the formerly used EASE system, but the exposure estimates are again based on monitoring data for several metals. Metal-specific substance-intrinsic and process-intrinsic properties are taken into account by using defined options for specific sets of operational conditions and risk management measures and corresponding metal-specific exposure estimates in the tool. For example, hot-metallurgical processes are addressed via process temperature or additional physical forms including massive objects and aqueous solutions. Thus, the MEASE tool provides conservative exposure estimates to be used for occupational exposure assessment of metals and inorganic substances under the REACH regulation.