

Copper: An essential material from a responsible industry

Member State Partnership Approach to the Duty of Care



Summary of key findings

The copper Voluntary Risk Assessment (VRA) is a scientific study, initiated by the copper industry, to evaluate the potential risks for man and the environment when exposed to copper.

In April 2008, the VRA was fully agreed between the copper industry and the European Commission's Technical Committee for New and Existing Substances.

The European Commission's Scientific Committee on Health and Environmental Risk (SCHER) performed a final evaluation of the human health and environmental dossiers. SCHER confirmed that the VRA is both comprehensive and of very good quality. SCHER also recognised that while some of the methodologies used were innovative, they are scientifically sound, and that the conclusions are relevant and correct.

Overall findings of the VRA

High-level

- The use of copper products has been proven to be, in general, safe for Europe's environment and the health of its citizens.
- With this risk assessment, the copper industry is meeting its duty of care to all stakeholders by demonstrating the safe use of its products for the environment and for human health. It has identified a limited number of local situations where risk management actions may be required.
- The European Copper Institute and Italy, as Review country, have agreed to co-operate in preparing a risk reduction measurement plan in areas where potential risks are observed.
- The VRA provides the copper industry and public authorities with the solid scientific platform on which to develop future regulatory initiatives, such as REACH. It also ensures that sufficient high quality data are available to assess the safety of current productions and uses of copper.

Human Health Risk Assessment

- The safe limit value for acute effects in drinking water is 4.0 mg/l of copper, with the general public typically exposed to 0.7 mg/l. This is consistent with the 2.0 mg/l guideline for copper advised by the World Health Organisation.
- For the consumer/general population exposure assessment the major source of exposure for consumers is through food and drinking water. For adults, the minimum daily dietary intake is 1 mg, with a maximum threshold of 11 mg. Actual intakes range between 0.6 and 2 mg, suggesting that deficiency may be of concern.
- Occupational health risks are possible at some industrial sites, specifically for workers involved in the production of copper chemicals and powders. The use of personal protective equipment is already used to address this risk.
- Copper is not a CMR (carcinogenic, mutagenic, reprotoxic) or a PBT (persistent, bio-accumulative, toxic) material.

Environmental Risk Assessment

- The copper levels measured in European waters, sediments and soils are usually well below these safe limit levels. The risk characterisation therefore concluded on no regional concerns for any of the compartments considered.
 - The European-wide safe levels for copper in freshwater and marine waters are respectively 7.8 and 2.6 µg Cu/l. The safe level for copper in soil is 79mg/kg dry weight.
 - The safe levels for copper in freshwater, estuarine and marine sediments are respectively 87, 144, and 338mg Cu/kg dry weight.
- Environmental risks are possible at 14% of industrial sites - where there is insufficient on-site water treatment, or where the effluent goes into a water body with low dilution.