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## **THEREDA – a Thermodynamic Reference Database project**

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Radioactive waste poses a serious danger to the environment. Consequently, many significant efforts are made to ensure the safe disposal of hazardous waste. In order to assess the long term safety of a repository, geochemical model calculations are used to analyze the performance of a system and predict the amount of radionuclides potentially mobilized from a repository. For reliable geochemical model calculations, a consistent, comprehensive and well maintained thermodynamic reference database is needed. The main objective of THEREDA is to establish a comprehensive and internally consistent thermodynamic database for the geochemical modelling of near-field and far-field processes occurring in the different host rock formations under discussion. The THEREDA database is run by the following institutions:

GRS: Gesellschaft für Anlagen- und Reaktorsicherheit mbH, Germany

KIT-INE: Karlsruhe Institute of Technology, Institute for Nuclear Waste Disposal, Germany

HZDR-IRC: Helmholtz-Zentrum Dresden-Rossendorf, Institute of Resource Ecology, Germany

TU-BAF: Technische Universität Bergakademie Freiberg, Institut für Anorganische Chemie, Germany

AF-Consult: AF-Consult Switzerland AG, Switzerland

THEREDA is focusing on data for actinides, fission- and activation products, chemotoxic elements and the elements defining the matrix system, i.e. the system of oceanic salts and cement phases. Specific labels are assigned to the data included in THEREDA allowing for traceability and transparency. THEREDA database is organized in a way to assure that compatibility problems (e.g. arising from exclusively SIT or Pitzer compatible data) are managed. The database is handled by a central databank, and made available to potential users via internet. Software tools are supplied to translate THEREDA into input files for commonly used geochemical modeling codes (EQ3/6, PHREEQC, Geochemist's Workbench, CHEMAPP, ...).

For more information please visit the project webpage at [www.thereda.de](http://www.thereda.de) where more detailed information on the THEREDA project and contact addresses are given.

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