

## EPA'S HERO DATABASE

### Background

EPA's Office of Research and Development created the HERO database to facilitate complete, sustainable, transparent, effective and efficient assessment development. The database includes more than 300,000 scientific articles from the peer-reviewed literature used by EPA to develop its Provisional Peer Reviewed Toxicity Values (PPRTV) and Integrated Science Assessments (ISA) that feed into the National Ambient Air Quality Standards (NAAQS) review. It also includes references and data from the Integrated Risk Information System (IRIS), a database that supports critical agency policymaking for chemical regulation. Risk assessments characterize the nature and magnitude of health risks to humans and the ecosystem from pollutants and chemicals in the environment.

HERO is an evergreen database. This means that new studies are continuously added so scientists can keep abreast of new research. References are then sorted, classified and made available through HERO.

### Features of HERO

**Database:** At its heart, HERO consists of an ever-expanding database of scientific literature used to develop EPA's risk assessments aimed at understanding the health and environmental effects of pollutants and chemicals.

**Literature Search:** A systematic, sustainable set of procedures and tools to facilitate advanced literature searching, screening and data classification using natural language



and cutting-edge tools to mine the vast body of research.

**Data Mining:** HERO employs innovative, efficient technologies for intelligent information extraction, retrieval and synthesis.

**Transparency:** Assessments are published with hyperlinks in the text to allow stakeholders to view more information than the traditional reference list. Public participation via a public access [website](#) provides transparency to the science behind EPA's decision-making processes used for protecting human health the environment.

**Agility:** Tools and processes are created to meet the evolving needs of scientists, collaborators and stakeholders.

**Continuous Updating:** As new literature is published, new studies are added and metadata applied automatically so scientists can keep abreast of new research in their fields.

**Scientific Integrity:** Scientific integrity depends on independence, accountability, innovation and transparency. HERO advances those values through systematic, comprehensive search and screening techniques, and public and stakeholder participation in the identification of key research.

HERO is part of the open government directive to conduct business with transparency, participation, and collaboration. Every American has the right to know the data behind EPA's regulatory process. Through HERO, the public can participate in the decision-making process.

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