Knovel

Deepening engineering research with Premium Content

Authoritative standards, handbooks and evaluated data for teaching and research



Why Premium Content matters

Knovel 35 gives students and researchers broad access to engineering reference content across 35 subject areas. Premium Content collections add specialist standards, handbooks, and evaluated databases from respected societies and data providers, giving deeper and more authoritative data for advanced coursework, design projects, theses, and research.

What Premium Content adds

- **Trusted sources:** content from AIChE/CCPS, ASM International, and ASME, alongside evaluated DIPPR 801 property data.
- **Interactive, searchable data:** dedicated databases let students filter, compare, and extract properties rather than reading through static tables.
- **Industry-relevant learning:** graduates train on the same standards and data used in professional engineering practice.
- **Citable research data:** evaluated, well-documented sources support rigorous thesis and research work.

Premium Content at a glance

70+
reference works in the ASM Materials Collection

183,000+
unique records in the Chemical Resistance Database

~5,000
exposure media covered, incl. 2,800+ chemical substances

2024
edition of DIPPR 801 evaluated process design data

The Premium collections

AIChE/CCPS: Center for Chemical Process Safety

Process safety guidance from the Center for Chemical Process Safety (CCPS), part of AIChE (American Institute of Chemical Engineers), the world's largest society for chemical engineers. CCPS publications provide the latest guidelines for producing, storing, and handling flammable, explosive, and reactive materials. Of use to researchers, lecturers, and students in chemical and process engineering, supporting process safety teaching, hazard analysis coursework, and research into the safe handling of hazardous materials.

ASM International Materials Collection

Practical information and interactive data on the selection, processing, performance, and analysis of materials. Comprises over 70 reference works, including the complete ASM Handbook series, the Atlas of Fatigue Curves, the Atlas of Stress-Strain Curves (2nd Edition), and many more trusted titles. Of use to researchers and students in materials science, metallurgy, and mechanical and aerospace engineering, supporting laboratory work, thesis research, and failure analysis with authoritative, citable materials data.

ASME Boiler and Pressure Vessel Code, Section II: Materials

The materials data used in ASME code design and construction of boilers and pressure vessels. An internationally recognised American national standard, the ASME Boiler and Pressure Vessel Code establishes safety rules governing the design, fabrication, and inspection of boilers and pressure vessels, with Section II organising its materials data across four parts. Of use to researchers, lecturers, and students in mechanical and process engineering, giving direct access to the data behind a recognised design standard for coursework, design projects, and applied research.

DIPPR Project 801

Evaluated process design data for the physical, thermodynamic, and transport properties of industrially important chemicals. The 2024 Edition of DIPPR 801 is a renowned reference for chemical process and equipment design. Of use to researchers, lecturers, and students in chemical and process engineering, providing critically evaluated property data for process simulation, design projects, and thermodynamics teaching.

Also available: Knovel Corrosion

Covers the corrosion behaviour of metals, plastics, and coatings across a wide range of exposure media, brought together in a single searchable view. Interactive tools allow users to check materials compatibility for specific exposure media, compare the resistance of different material grades against the same medium, and extract concentration and temperature data from isocorrosion graphs. Field-tested case studies document the causes of corrosion failures and their remedies. Of use to researchers, lecturers, and students in materials science, metallurgy, and chemical, mechanical, and civil engineering.

Chemical Resistance Database: Plastics and Elastomers

The effects of exposing polymeric materials to specific combinations of exposure media and conditions. Over 183,000 unique records, organised by material category, span over 1,196 material grades across 226 material types, including neat, reinforced, and filled thermoplastics, thermoset resins, rubbers, and thermoplastic elastomers. Resistance data cover almost 5,000 exposure media, including over 2,800 chemical substances (from water to acetone to sulphuric acid) and conditions such as weathering, sterilisation, ageing, and environmental stress cracking. Data are presented in tabular format with an additional datasheet view, compiled from commercial catalogues, journal articles, technical reports, and materials datasheets. Of use to researchers and students in polymer science, chemistry, and chemical and materials engineering, supporting experimental planning, materials selection, and comparison of degradation behaviour.

Knovel Polymer Matrix Composites Database

Comprehensive typical and design data for polymer-matrix composites, including prepregs, matrix resins, and fibre reinforcement. The emphasis is on tensile, shear, flexural, compressive, and fatigue properties of composites cured under different conditions and tested across a wide range of temperature and stress conditions. Of use to researchers and students in composites, materials, and aerospace engineering, supporting materials selection, performance modelling, and validation of experimental results against design data.



Using Premium Content in teaching and research

- **Curriculum development:** link Premium collections to modules in materials, process design, polymers, and process safety.
- **Project assignments:** ask students to select a polymer for a chemical exposure using the Chemical Resistance Database, or source property data for a process simulation from DIPPR 801.
- **Workshops and training:** organise library-led sessions showing how to search, filter, and export Premium data.
- **Research projects:** guide postgraduate researchers to evaluated data and recognised standards for thesis and publication work.

Next steps

Request a trial
Give faculty and students time-limited access to the Premium collections relevant to your programmes.

Map collections to courses
Work with us to match each Premium collection to the modules, labs, and research groups that will use it.

Book a training session
Arrange an online or on-site session for librarians, lecturers, or students.

For more information, contact your Elsevier Account Manager or visit Knovel's Higher Education page.

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