Today’s chemical companies are quickly adapting to the digital world, recognizing the power of “connection” among products, production equipment and personnel. However, with transformation also comes challenges. Major challenges that chemicals companies are facing in order to stay competitive require access to actionable information and best practices.

Knovel quickly delivers trusted, accessible and relevant engineering answers and insights to help chemical companies optimize materials input, mitigate risks, and meet manufacturing & compliance goals.
Focusing on continuous operational improvement is a relentless pursuit, as giving the customer what they need when they need it is both an operational and critical financial goal.

Achieve competitive advantages with continuous operational improvements

Focusing on continuous operational improvements is a relentless pursuit, while innovation is also a constant quest to uncover and create the next great product. Meanwhile, market competition creates pressure to limit production downtime. Inherently, downtime increases the likelihood that competitors will gain market share.

All the while, chemical company leaders must:

- Reduce risks and accelerate new product development
- Adhere to environmental, health and safety regulations
- Maximize efficiency and quality of production
A solution that support decisions

**Knovel** is an engineering-decision support solution that helps chemicals companies optimize materials input, mitigate design and equipment risks, and leverage best practices for better decision-making.

Simply put, Knovel helps chemicals companies achieve their R&D and manufacturing goals.

Knovel is a critical solution to help with:

**Reducing Time to Market**

$250K

Knovel helped a chemicals company accelerate a new product initiative for its polymer platform, helping eliminate 80% of candidate materials to save $250k in analytical lab costs.

**Managing EHS Risks**

$1.5M

Knovel helped a chemical engineer perform a layer of protection analysis at a facility, and determined that a $1.5 million sensor safety upgrade was unnecessary.

**Manufacturing & Production Excellence**

32%

Knovel helped a chemicals company turn an unprofitable product with high manufacturing costs into a profitable one by reducing cycle time by 32%.

Engineers use Knovel to:

- Research substance and material properties and suitability for applications and process improvements
- Perform calculations to solve process and application challenges
- Troubleshoot issues and failures
- Develop design guidelines and criteria for equipment, maintenance and processes
- Assess safety and risks with potential and existing processes and systems
- Get up to speed on unfamiliar topics
**Expedite time to market**

“[We use Knovel for] proper selection of piping and equipment materials for construction, so we do not need to reinvent the wheel.”  
—Process Engineer

**Reduce design & development costs**

“[Knovel helps] reduce man-hours (and hence, cost) for searching information from elsewhere. The reliable sources from Knovel also help to reduce the need to crosscheck with external consultants for our engineering design.”

—Custom Project Engineer

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**Knovel supports Chemical R&D with essential, data-rich answers**

Knovel helps chemical R&D companies accelerate the new product development work cycle while avoiding risks and re-work. With Knovel, engineers make better decisions, resulting in gains such as:

- **80%**
- Of chemical R&D users say **Knovel** saves at least one day of project time.

**Source:** 2017 Knovel User Survey

- Informed material selection
- Efficient feasibility & analytical testing
- Reduced raw materials input
Meet EHS & regulatory demands
“[Knovel helped select] the more appropriate choice of system design [which] had a strong impact on reliability of facilities operations.”
—Sr. Process Safety Engineer

Achieve operational excellence
“[Knovel helped] save money by finding out that a proposed idea had already been attempted at a different facility, and the results were not as high as expected. This caused us to utilize a different idea that has been working well.”
—Mechanical Engineer

Knovel empowers Chemical Manufacturing with operational insights
Knovel helps chemical manufacturers explore alternative ways of meeting safety requirements at reduced costs while diagnosing and solving operational challenges. With Knovel, engineers make better decisions, resulting in gains such as:

- Problem-solving based on industry data & insights
- Assessment & management of EHS issues
- Continuous process improvement

...Of chemical manufacturing users say Knovel helps them reduce risk.
Source: 2017 Knovel User Survey
How Knovel delivers

Essential answers: relevant, tailored content throughout the search journey

- Technical reference resources from 150+ publishers including AIChE/CCPS, NACE and more
- Interactive content including equations, graphs and tables
- 65M+ data points including material and chemical property data

Accelerated discoveries: powerful search and processing capabilities

- Text-based search eliminates the need to know complex taxonomies to find relevant results
- Property data search easily narrows down properties for specific conditions
- “Refine by” tool extracts engineering concepts to declutter results and discover connected content

Figure 1: User-defined searches or viewed content, as well as tools like interactive graphs and a unit converter, are just a click away.

Figure 2: The powerful but intuitive query builder of Knovel’s Property Search.

Figure 3: The unique “Refine by” tool highlights engineering concepts to quickly get relevant answers.
How Knovel delivers

Continuous access: using Knovel content when and where answers are needed

Knovel is designed for using information. Thus, plug-ins enable content interoperability with essential engineering tools and software like Autodesk Inventor and Excel. Furthermore, Knovel ToGo grants mobile access to results, extending the reach of insights beyond the office and eliminating project delays.

• Access to answers & insights on the go with the Knovel ToGo app
• Integrations with third party software like Autodesk Inventor and Microsoft Excel

Users agree: Knovel advances their engineering work, providing answers and insights with high business impact

Knovel

- Is a trusted resource for chemical companies: 80%
- Eases adherence to EHS and regulatory demands: 72%
- Reduces engineering risks, including roadblocks in scaleup: 76%
- Helps plan and implement updates to facility designs: 65%
- Enables bringing products to market faster: 59%

Source: 2017 Knovel User Survey
Knovel
Knovel is an engineering decision-support solution enabling engineers to solve problems faster. With powerful search and interactive analytical tools, engineers can confidently find answers to technical questions through best practice insights, validated equations and materials and substances data from more than 150+ providers. For more than 15 years, Knovel has helped thousands of engineers and researchers from leading companies and institutions around the world enhance research and productivity, achieve operational excellence, reduce costs and time to market and build expertise.

For more information about Knovel, visit [www.elsevier.com/knovel](http://www.elsevier.com/knovel)

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