

**TCI**, a global technology and business consulting firm, provides industry with analysis-driven consulting. Our expertise is in technology assessments, in- and out-licensing, business intelligence, market research, mergers & acquisitions, and other technology and business needs.

Founded in 1979, TCI serves the pharmaceutical, drug delivery, OTC, nutrition, personal care, packaging, chemical, and advanced materials industries. We have global offices located in the US, Germany, the Czech Republic, Argentina, China, Korea, Japan, and India.

Several distinct consulting services are offered to assist clients with their opportunity assessment including:

- Precise technology assessment
- Strategic planning for global businesses
- Technology sourcing
- Business intelligence

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# Delivery of Poorly Soluble or Poorly Permeable Drugs Seventh Edition

*Technology & Business Review*



## Report Summary

**Technology Catalysts International** (TCI) has developed a report that analyzes current technical and market information pertaining to the delivery of poorly water soluble or poorly permeable pharmaceutical compounds.

Bioavailability problems are common in the pharmaceutical industry and often cause delays in drug development. Poor bioavailability is a major reason for failure of drugs in preclinical development. Fortunately, several novel drug delivery technologies have been developed that are able to accommodate poorly soluble drugs. Additionally, the increased use of solid dispersion techniques has enhanced the solubility of many molecules. Permeability through the gastrointestinal tract is the rate limiting step for delivering macromolecules and very polar compounds. Examples of technologies specifically designed to solve these problems include using natural transporter systems, enzyme inhibition, and bioadhesion. The use of gamma scintigraphy in combination with smart pills has enabled a better understanding of the permeation of drugs in the GI tract.

In the seventh edition of this report, TCI has focused on oral solid dose products that have been launched in the US since the sixth edition. Opportunities exist for improving pharmaceutical products by increasing the bioavailability, expanding a product line via an oral or parenteral switch, or reducing the cost of goods through a less expensive manufacturing process. TCI has identified 30 poorly soluble drugs with low bioavailability launched in the US. TCI believes that these drug candidates represent an excellent business opportunity for both specialty pharmaceutical and drug delivery companies. Detailed information such as the solubility in water, bioavailability, and 2012-2013 annual sales are provided. This report also provides detailed descriptions of novel technologies in development that are specifically designed to deliver poorly soluble or poorly permeable drugs. For each drug delivery technology discussed,

the following information is provided: technology description, applications of the technology, technology offer (business opportunity), stage of development, patents/publications, competitive advantage(s), company summary, and complete contact information.

### New to the Seventh Edition:

- Updated market analysis
- New information on solid dispersion technologies

## Key Information and Analysis Presented in the Report:

### Introduction to Bioavailability

- Updated market analysis
- New information on solid dispersion technology

### Market Analysis

- Newly launched products
- Launched products using drug delivery technologies
- Drug delivery pipeline

### Delivery Methods for Poorly Soluble Drugs

- Micelles
- Complexation
- Particle size reduction
- Liposomes
- Solid dispersion
- Co-Crystals

### Delivery Methods for Poorly Permeable Drugs

- Techniques for assessing permeability
- Strategies for improving absorption

### Technology Profiles (*Licensing Opportunities*)

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