GTC Technology is a global licensor of process technologies and mass transfer solutions. Refining and petrochemical companies around the world rely on our advanced technology to improve capacity and efficiency, as well as maximize production. We combine unparalleled industry expertise, powerful research capabilities and innovative thinking to solve some of the most complex processing problems. GTC has earned a reputation of excellence by designing and delivering high-quality, strategic solutions for clients worldwide. We’re engineered to innovate.
- **Engineered to innovate**
  
  GTC Technology is a global licensor of process technologies and mass transfer solutions offering innovative, custom solutions for the refining, chemical, petrochemical and gas processing industries. Refining, petrochemical and chemical companies around the world rely on our advanced technology to optimize production capacity and efficiency, reduce operating cost and minimize environmental impact.

  Our broad scope of continually evolving products and services has been proven to optimize industrial process performance. GTC’s innovations center around:

  - Technology licensing
  - Engineering services
  - Technical services
  - Process equipment technology (PET)
  - Energy saving services
  - Chemicals and catalysts
  - Research and development

  GTC has engineering services, manufacturing facilities, a knowledgeable sales force and technical service team located strategically throughout the globe readily available to respond quickly to the needs of the chemical processing industry. We specialize in creating comprehensive, flexible solutions that address the profitability goals of our clients.

  Our customers’ satisfaction stems from a company-wide commitment of going above and beyond our clients’ expectations. Our engineers are unmatched in talent and provide a solid foundation of experience for solving the most complex problems. Their expertise, backed by our research and development team, is the driving force behind our numerous patents for process technology and equipment design enhancements.

  For the latest in GTC offerings, call us at +1-281-597-4800, e-mail us at inquiry@gtctech.com, or visit our Web site at [http://www.gtctech.com](http://www.gtctech.com).
Technology licensing through innovation

For our worldwide clientele of refining, chemical, petrochemical and gas processing operators, we offer more than 25 licensed technologies to increase capacity, improve efficiency and maximize production and reduce environmental impact. Backed by our research and development team and accumulated expertise, we are able to introduce and commercialize new technologies that tackle some of the most complex processing problems.

GTC has established strong alliances with more than a dozen technology partners. Together with these key associates, we are well equipped to collaborate and accelerate the process of bringing first-of-its-kind applications and cutting edge innovation to market.

Our patented suite of technologies fall broadly into the Petrochemical, Refinery, Gas Processing & Sulfur Recovery, Bio Renewable and Polyester Intermediates market segments.

GTC’s petrochemical technologies available for license focus on value-added products from the steam cracker including BTX, styrene, naphthalene and various C₅’s. It is important for crackers using liquid feedstocks to upgrade all of the by-products in order to maintain competitiveness with the crackers using low-cost ethane feedstock.

Our refining technologies upgrade fuel streams or convert fuel to higher value petrochemicals. These include CCR naphtha reforming, light naphtha isomerization and direct recovery of BTX from FCC gasoline. GTC’s portfolio also includes a range of processes for meeting the clean fuels mandate for benzene reduction and low-sulfur products.

In the polyester value chain, GTC’s licensees can benefit from breakthrough technology to reduce bromine and burning losses in the PTA oxidation system and avoid the high-pressure hydrogenation system to purify the TA. We offer a hybrid adsorption/crystallization scheme for PX recovery, and conversion of all aromatics in the raw material in xylene, with the option for zero benzene co-production using our toluene alkylation process.

GTC designed the world’s largest extractive distillation unit for BTX recovery. At over 1.5MM tpa capacity, the unit exemplifies GTC’s superior alternative to liquid-liquid extraction technology.
GTC’s gas processing technologies include acid gas removal from process streams, sulfur removal and recovery as well as gas treatment. For sour gas streams, we offer a broad suite of innovative technologies across the entire spectrum of sulfur removal requirements.

GTC works with clients to find the right licensing mix and package best suited to achieve their project objectives. From grassroots applications to facility expansions or upgrades, GTC’s technologies have been tested and proven in plants across the world. Our diverse licensing portfolio, combined with a flexible approach, ensures the best operational performance so clients can start generating profits sooner.

**Expert engineering and technical support**

As an experienced technology licensor, GTC Technology has extensive project delivery capability centered on reliable, proven engineering solutions. From rigorous planning and quality management to technical implementation, we work with clients every step of the way to ensure completeness of documentation and timely delivery.

GTC’s engineering activities include feasibility studies, technical reports, basic engineering packages, process audits, detailed engineering and Front End Engineering Design (FEED) packages. During the proposal or feasibility study preparation, we capture data and conduct an analysis of the plant to clearly define a prospective project and evaluate our clients’ goals and business objectives. This information is used to reinforce the economic and technical merits of a project and provide support for more informed decision making.

GTC’s revamp solutions optimize idle or existing equipment to improve asset use and reduce unnecessary capital expenditures. Our goal is to integrate our designs seamlessly with existing facilities resulting in increased capacity, improved product quality, reduced energy consumption and faster start-ups, thus accelerating return on investment.

GTC’s Basic Engineering Package (BEP) includes a standard set of deliverables used by the detailed design contractor to complete the project. Our scope of work includes detailed engineering reviews, operating guidelines, analytical requirements, and Hazard and Operability (HAZOP) studies, as well as additional comprehensive documentation for FEED packages.
Training is key to successfully adopting and implementing new technology. Whether clients are looking to reduce general inefficiencies or solve persistent operational problems, GTC’s technical service team is readily available to help clients optimize plant performance and sustain a competitive advantage in the marketplace. Our technical service team is positioned around the world, offering a range of services from commissioning, inspections and operator training to start-up assistance, HAZOP studies and project management.

- **At the forefront with process equipment technology**
  GTC Technology has extensive experience in providing optimized process design and mass transfer solutions in all of the major refining, petrochemical and chemical processes. Beyond providing innovative process equipment, we offer practical solutions backed by process optimization and energy saving studies. Drawing on our many years of installing licensed technology, we have the technical expertise to advise and implement mass transfer and equipment solutions, including:
  - Process evaluation
  - Feasibility studies
  - Design packages
  - Equipment engineering, design, fabrication and delivery
  - Start-up assistance
  - On-site data acquisition and evaluation

We recognize that no two clients are alike. For this reason, we offer an extensive line of equipment that can be customized to provide full-service mass transfer solutions for the application and market.

GTC has developed a solution to greatly improve the economic profitability for operators by creating a petrochemical focused refinery design that produces value-added products with no yield of gasoline.
Energy saving services
With rising pressure to reduce energy costs, GTC’s online heater/boiler chemical cleaning technology is an effective way to improve heater efficiency without shutting down plant operations. With a commitment to safety, our technology is designed to quickly remove deposits such as slag and fouling that build up over time on tube surfaces. Clients with oil-fired boilers, refinery heaters, petrochemical furnaces or power plant boilers can use our technology to significantly improve equipment throughput, lower fuel costs and reduce greenhouse emissions, all without plant facility modifications. Through our extensive heater cleaning knowledge we can help plant managers extend time between heater/boiler maintenance and keep plants operating at their peak performance.

Delivering sustainable high performance
Refiners remain focused on lowering operating costs and improving margins, and are increasingly turning to new technology solutions to meet these goals. GTC’s proprietary chemicals and catalysts are an important part of the mix. Our products are used within all of GTC-licensed technologies and are also available for direct replacement or revamping of projects. We offer a range of Techm® series solvents that are used in our technologies. These high-performance solvents allow us to extend the range of operation and upgrade additional petrochemical components from wide boiling fractions. We also have a portfolio of catalysts, including a selective toluene disproportionation catalyst (STDP), transalkylation catalyst, xylene isomerization catalyst, pygas hydrotreating catalysts and aromatization catalysts.

- Selective toluene disproportionation catalyst (STDP)
- Toluene alkylation catalyst
- Transalkylation catalyst
- Xylene isomerization catalyst
- Pygas hydrotreating catalysts
- Aromatization catalysts
- Paraxylene adsorbent

Trays, packing and column internals
GTC Technology’s product lines cover a broad spectrum of conventional and proprietary mass transfer equipment design for trays, packing and other tower internals.

We focus on developing solutions to address and achieve optimum capacity and efficiency. GTC’s standard practice is to work with clients to understand business objectives and concerns. Our full line of high-performance trays and high-efficiency packing approaches the ultimate theoretical capacity and efficiency of a tower and permits the mass transfer equipment to function at a wide range of operating extremes.

We provide around-the-clock support for turnarounds, and our replacement sales team is on call in multiple locations, 24 hours a day, seven days a week.

Our high-performing solvents have versatile applications that transform low-value materials into premium-value petrochemicals.
Meeting the challenges of tomorrow

R&D is one of our most powerful assets that propels us toward cutting edge innovation. GTC’s state-of-the-art research center headquartered in Bozeman, Montana, is a collaborative network of relationships with universities and partners across the globe. Our clients and internal staff members enjoy direct access to advanced technical support and a diverse range of scientific experts.

When collaborating with clients, a high degree of security and control is essential. Our R&D team provides unparalleled security by following stringent standards to protect the confidentiality and integrity of data shared by our clients.

With extensive bench-scale and pilot-scale capabilities and advanced analytical capabilities, our clients rely on us to improve operations and technology while minimizing the impact on the environment. Our R&D team is committed to environmental leadership through the development and use of processes that are environmentally responsible.

Engineered to innovate

To learn more about GTC Technology’s leading-edge technology solutions and the many ways we can help improve your operations and profitability, call us today at +1-281-597-4800, e-mail us at inquiry@gtctech.com, or visit our Web site at http://www.gtctech.com.

GTC Technology is a performance-driven provider of process expertise, technology and equipment, and is backed by a reliable worldwide support and service force that is readily available to address client needs.

Most styrene contained in pyrolysis gasoline is considered to be low-value fuel. GTC has introduced a breakthrough process for styrene recovery from raw pyrolysis gasoline. The technology upgrades a low-value fuel stream to a high-value petrochemical product.
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