



PTT Chemicals

Standards ensuring stable and reliable operations

PTT Chemical Public Company Limited (PTTCH) is a leading petrochemical company in Thailand. It operates broadly across the chemical sector and its main products are olefins and derivatives, polymers and ethylene oxide-based performance products.

PTTCH manufactures polyethylene for the Thai process industry, which produces equipment and plastic resins used in daily life. PTTCH has therefore contributed to reducing the imports of plastic resins, supporting the development of the national economy.

Company name: PTT Chemical Public Company (PTTCH)

Country: Thailand

Industry: Chemical industry

No. of employees: 1360

Revenues/profits:

THB 103.2 billion/THB 10.7 billion
(USD 3.1 billion/USD 321 million)
(for total PTTCH) (in 2010)*

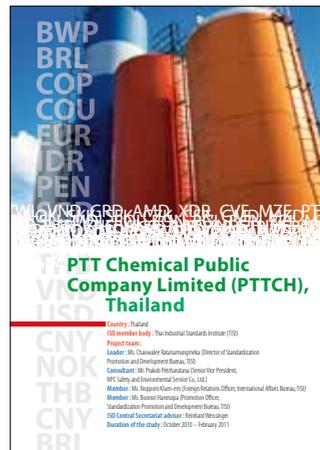
Main products/services:

Various chemical products (olefins, polymer products, EO-based products, oleochemical products, ethylene, propylene, etc.).

The assessment focused on high-density polyethylene (HDPE) and, in particular, on the activity of one of PTTCH's most important factories (named HDPE I-1), which uses process technology licensed from Mitsui Chemical Inc., Japan.

Main use of standards:

- Production/operations
- Engineering



Most important standards used:

- ISO 9001:2000, *Quality management systems*
- ISO 14001:2004, *Environmental management systems*
- OHSAS/TIS 18001:1999, *Occupational health and safety management systems*
- ISO/IEC 17025:2005, *Requirements for the competence of testing and calibrating laboratories*
- Various technical standards related to testing and product characteristics (JIS, ASTM and others)

Economic benefits generated by standards: USD 9.4 million annually, which amounts to approximately 3% of the annual sales revenue attributable to the HDPE I-1 plant.

Key qualitative benefits: The combined effect of management system standards and product/testing standards brought a steady increase to the plant's output. The specific impact of ISO/IEC 17025 certification for the PTTCH testing service centre could not be quantified. However, it contributed significantly to ensuring the effectiveness and consistency of laboratory tests for raw materials and the finished products.

What were the major benefits for PTTCH of using standards?

Using standards allowed PTTCH to operate the plant in a stable and consistent way, enabling it to reach its maximum level of output.

How did standards lead to these benefits?

The ISO 9001 quality management system played a key role in defining fundamental guidelines for good manufacturing practice, supporting the introduction of measures with a quantifiable impact on the four key indicators used by PTTCH to assess the performance of its production processes: plant reliability (deviation from optimal production capacity), off specification (percentage of product not conforming to specification), ethylene consumption (percentage of final product) and energy index (usage of energy per ton of product).

Other standards (e.g. for testing and product characteristics) were integrated into the overall management system, and the benefits derived from using standards were assessed on the basis of their impact on the four key indicators.