Enhanced Gas Assist Injection Molding (EGAIM).

**EGAIM technologies**

Enhanced gas assist injection molding (EGAIM) stands for a package of innovative technologies developed by Linde which allow customers to upgrade their state-of-the-art gas assist injection molding (GAIM) processes. The benefit of this solution is a significant increase in productivity and quality of parts produced.

Gas assist injection molding with nitrogen is a well-established process. In some cases, however, water has been introduced instead of nitrogen in order to reduce cooling times and to satisfy the demand for molding of higher complexity. With EGAIM, Linde now offers a viable, efficient alternative to the use of water as well as a significant improvement of conventional GAIM with nitrogen.

**Benefits**

Enhanced gas assist injection molding was developed to provide two major benefits:

1. Innovative use of carbon dioxide (CO₂) for the GAIM process
2. Enhanced inner cooling (flushing) by using nitrogen

Both benefits – together with Linde’s technology for inerting the mold cavity and the hopper – lower downtime by avoiding oxidation and minimize clogging of gas injectors.

**Supply and equipment**

Linde’s enhanced gas assist injection molding technologies are based on profound process knowledge and were verified and confirmed by various industrial injection molding customers.

Linde offers the full supply of gas and equipment up to the injector at the mold. Linde’s high-pressure gas supply units for nitrogen PRESUS™ N10 and carbon dioxide (PRESUS™ C) create additional value and complete the EGAIM portfolio.
Enhanced Gas Assist Injection Molding (EGAIM).

**Operation benefits**
- Reduction of cycle times of up to 50% with gas technology
- Down-time reduction from 15% to practically zero is possible through the use of inert gas
- Completely dry process when using CO₂ compared to water-injection molding
- Low energy consumption, up to 90% less than state-of-the-art gas compression units
- Oil-free operation as compared to gas compressors

**Installation benefits of the PRESUS series**
- Simple and inexpensive installation
- No additional pressurizing devices required
- Very reliable equipment as proven by Linde’s numerous customer installations

IR pictures show how CO₂ can achieve a cycle time reduction

State-of-the-art process

Temperature distribution using CO₂ (same cycle time)

Temperature distribution using CO₂ (cycle time reduced by 30%)

PRESUS™ N10 Liquid Pump

Linde North America, Inc.
575 Mountain Ave., Murray Hill, NJ 07974 USA

Linde North America Inc. is a member of The Linde Group. Linde is a trading name used by companies within the Linde Group. The Linde logo is a trademark of The Linde Group. © The Linde Group 2012.