

120,000 TPY High Density Polyethylene (HDPE)

“Gas Phase Polymerization Technology”



17A MARLEN DRIVE † HAMILTON, NJ 08691 † USA
TEL: (609) 586-8004 † FAX: (609) 586-0002

WWW.IPPE.COM

INTRODUCTION

- **Start Up:** 1986
- **Technology:** Gas Phase Polymerization Technology
- **Documentation:** Complete / Available



DETAILED REPORT

Overview



The plant was originally designed and built in 1986 for a capacity of 100,000 MTPY of High Density Polyethylene, “HDPE”. The reactor has a potential for much larger capacity.

During former production period capacity has been increased to 120,000 TPY by optimizing the process conditions without changing main equipment or upsizing the reactor.

Prior to shut down plant was operated and running at an average capacity of 110,000 TPY in accordance with the market demand in that area.

DETAILED REPORT

Process Description



The polymerization takes place in very mild conditions in the reactor and by use of convention catalyst.

The polymerization is a gas phase reaction – the dry powder catalyst is supplied continuously

The polyolefin resin is discharged from the bottom of the reactor as solid powder. The process technology of gas phase reactor is very clean and easy to control. The product flows down from the reactor into the purge-bin, then to the storage bins where after adding additives and optionally adding color, product flows to the extruder and ultimately to the bagging and packaging system.

DETAILED REPORT

Operation Performance & Unit Consumption *approx.*

Feedstock is ethylene and monomer ➤ 1.015 ton/ton product

Electricity ➤ 385 KWH/ton product

Cooling Water (Circulation) ➤ 145 cubic meters/ton product

Steam / 4 bar pressure ➤ 0.050 ton/ton product

Catalyst Consumption / based on value of 2003 ➤ Euro. 10-20/ton

Product Specification

- Homo & Co polymeric HDPE and LDPE possible grades

Product Application

- Blow and injection moldings, film and pipe, natural and black color

PRODUCTION UNIT

Major Operating Areas

- **Feed Gas Purification Section**
- **Compression and Reaction / Reactor**
- **Purge Bins and Vent Recovery**
- **Extruder and Packaging System**
(The packaging section will not be available with the plant).
The Extruder is Part of the Plant



MAJOR COMPONENTS

Major Equipment

- Purification of Ethylene Feed
- Feed Gas Booster Compressor
- Reactor / Spherical Top
- Purge-Bin and Dryer
- Recycling Compressor
- Recycle Gas Cooler
- Additive Bins and Misc. Bins
- Extruder
- Control System is Fully Computerized with DCS System Provided by Huntsman & Brown

CONTACT INFORMATION

MICHAEL JOACHIM

DIRECTOR, PLANTS DEPT.

Tele: 609-838-5930 (direct)

Mobile: 609-516-9107

MichaelJ@ippe.com

SANJEEV REGE

VP GLOBAL PLANT SALES

Tele: 609-838-5938 (direct)

Mobile: 609-510-2616

SanjeevR@ippe.com

