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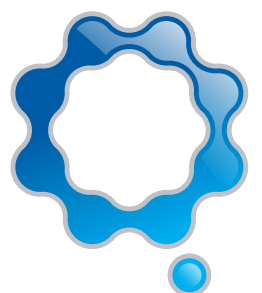
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Qenos

QENOS TECHNICAL
CENTRE

Qenos | Ingenious Transformations





QENOS TECHNICAL CENTRE

The Qenos Technical Centre is Australia's premier polyolefins laboratory organisation.

Holding NATA accreditation for a range of specialised polyethylene tests, the Technical Centre has an extensive suite of state of the art analytical and physical testing instrumentation complemented by commercial and semi-commercial polymer processing equipment. Located in Altona and staffed by a highly experienced team of materials specialists, the Technical Centre brings value to Qenos' range of polyethylene products by focussing on the specific needs of Qenos customers:

- **Technical Support** Qenos has an extensive range of processing equipment to allow the process simulation of all key segments in the Australian PE market. This local support, in conjunction with Qenos' highly experienced technical service specialists, is utilised to directly assist application development and troubleshooting for customers.
- **Product Development** The Technical Centre performs a number of critical functions in support of new product development and design. These services range from verification of polymer architecture and performance to manufacture and evaluation in the fabrication hall to ensure that the product will meet customer needs.
- **Product Integrity** The Technical Centre is pivotal to establishing and maintaining the performance, fitness for purpose and integrity of all Qenos products. This function includes all aspects of product regulatory compliance including food contact, raw material quality management as well as accountability for product QA/QC and the maintenance of the ISO9001 quality management system.
- **Manufacturing Support** The Technical Centre has the depth of laboratory skills and experience required to support Qenos' manufacturing operations in solving critical plant problems and maintaining product integrity.



QUALITY AT THE QENOS TECHNICAL CENTRE

Quality and good laboratory practice systems, conforming to the requirements of ISO17025, have been developed specifically for Technical Centre operations to ensure a high standard of reliable and accurate laboratory services.

The Technical Centre maintains the following independent accreditations and licenses for its testing services, Qenos products and quality management systems:

- NATA accreditation for specific Chemical & Mechanical Tests
- SAI Global Type Test Licence for Black Pipe Grades to AS/NZS 4131
- SAI Global Type Test License for Roto Moulding Grades to AS/NZS 4766
- ISO 9001 Quality Management Systems – Requirements
- ISO 17025 General requirements for the competence of testing and calibration laboratories



FACILITIES AND CAPABILITY

The Technical Centre is comprised of three separate and purpose designed testing laboratories housed under the one roof. These laboratories, in conjunction with direct support from world renowned polyethylene research and development partners, are used to perform Technical Service, Product Development, Plant Manufacture and Quality Assurance evaluations. New methods are continually being developed in accord with ASTM, ISO and AS/NZS methodologies to improve Qenos' ability to provide accurate information to its customers as well as produce quality products that are fit for purpose.

Using the processing equipment available, the Qenos Technical Centre can perform detailed evaluation of products under conditions similar to those found at Qenos customers.



QENOS OPERATES THE LARGEST POLYETHYLENE TESTING FACILITY IN THE SOUTHERN HEMISPHERE



TECHNICAL CENTRE FACILITIES LISTING

PROCESS LABORATORY

Equipped with 14 plastics processing lines, most of which are of commercial or semi-commercial scale and cover a wide variety of converting processes. These lines include:

- injection moulding machine
- blow moulding machine
- rotational moulding machine
- twin screw & single screw compounding extruders
- tape extrusion and monofilament line
- pipe extrusion line
- blown film extrusion lines (one equipped with digital film scanning device)
- compression moulding press
- hydrostatic pipe pressure testing baths
- Xenon arc accelerated weatherometer

There are also a range of blenders, feeders and a Brabender plasticorder.

PHYSICAL TESTING LABORATORY

The Physical Testing laboratory has extensive capabilities for various mechanical tests of polymer samples. The main tests performed include:

- Flow properties by Melt Index or Capillary and Rotational Rheometer
- Density by gradient column method
- Mechanical properties – Tensile, Yield, Elongation, Modulus, Crush, Flexural and Secant Modulus
- Environmental stress crack resistance
- Long term creep
- Impact testing – Izod, Charpy, Instrumented, ARM, Drop Dart
- Abrasion resistance – DIN, Taber
- Optical properties – haze and gloss
- Environmental Resistance & Weathering
- Pressure Resistance
- Surface Properties
- Pellet geometry (by digitised instrumental analysis)

The Physical Testing laboratory also has a temperature and humidity controlled facility for conditioning samples and testing to standards requiring these conditions.

ANALYTICAL TESTING LABORATORY

The Analytical Testing laboratory performs a wide range of analytical procedures. These include:

- Polymer Identification – DSC, FTIR, NIR, FTIR microscope
- Microscopy & Product Defect Analysis
- Quantification of Polymer Additives – GC, HPLC, TGA & UV
- Thermal Properties



Photography

1. Individual pellet photos are used for shape and size assessment.
2. A sample of Qenos Alkatane® dairy product being extruded into film and examined for defects and contamination by high speed digital imaging prior to market release.
3. Tensile testing being performed on Qenos' Alkadyne® PE100 HDF145B pipe grade.
4. Qenos Technical Centre, Analytical Laboratory.
5. 8000+ hour tensile test specimens being placed inside a Weatherometer. Accelerated exposure testing verifies that specific Qenos Alkatuff® and Alkatane® grades meet outdoor exposure requirements.
6. The Anton Paar rheometer is the latest technology in dynamic rotational rheology, enabling a broad spectrum of rheological measurements which give fine insight into the resin's macromolecular structure.
7. Puncture testing of Qenos latest Alkamax® mLLPDE films via Spencer Impact rig.
8. Polyethylene pellets being photographed by high resolution digital camera for assessment of defects and geometry analysis.
9. A parison being extruder in the extrusion blow moulder. The parison will subsequently be "blown" into a bottle and then used for odour and taint testing and verify suitability for food contact.
10. The Process Laboratory is the home to one of the largest hydrostatic pipe testing facilities in Australia consisting of 14 baths with up to 27 stations per bath. Pipe extruder is also shown.
11. The "work-horse" of rheology, melt index is a fundamental characteristic in matching a PE resin to a particular application and is a critical quality control measure. Qenos has a large number of the latest range of melt index instruments and uses the full suite of its rheology capability for QA, customer support and product development purposes.

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