

Alkadyne® PE100



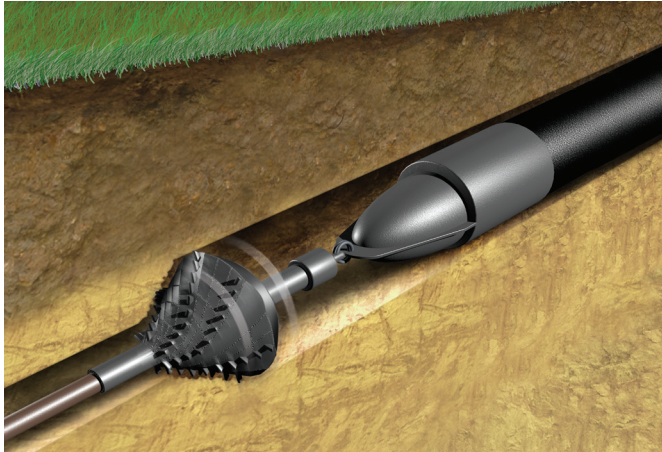
ENGINEERED TO OUTPERFORM

ALKADYNE® PE100

HCR193B

PE100 WITH EXCEPTIONAL STRESS CRACK RESISTANCE

Alkadyne® HCR193B is a PE100 resin with high stress crack resistance (HSCR) and is a new class of PE100 material. HCR193B has many times greater stress crack resistance than standard PE100 resin. HCR193B enables you to work with your designer to achieve more efficient pipelines, longer lasting pipe networks or reduced installation costs.



LOWER INSTALLATION COST

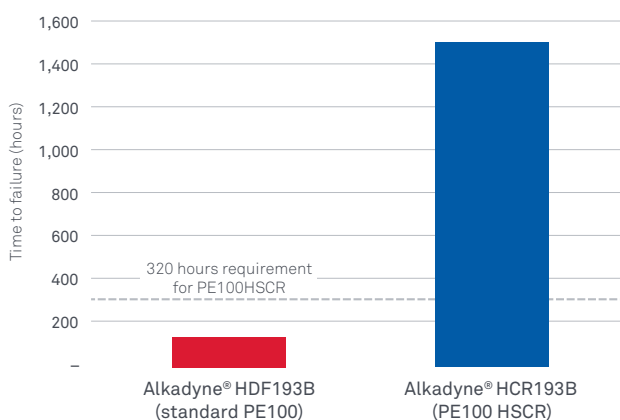
- HCR193B has increased resistance to slow crack growth initiation which can be caused by scratches and notches during installation.
- HCR193B can withstand deeper notches reducing the risk of impacting upon pipe service life when compared to standard PE100 grades.
- HCR193B can enable installation using lower cost backfill. The high stress crack resistance of HCR193B reduces the risk of crack initiation due to point loads associated with these installation methods.



REDUCED WALL THICKNESS

- Slow crack growth initiation can lead to brittle failure. HCR193B has increased resistance to slow crack growth initiation.
- The potential to downgauge pipe (reduce wall thickness) can be made possible with the appropriate use of design factors and “fit-for-purpose” design methodology.
- Downgauging decreases costs while increasing efficiency. Reduced material usage lowers pipe costs, while improved flow decreases pumping costs.

Stress Crack Resistance Performance
Hessel Accelerated Creep Test



INCREASED SERVICE LIFE

- The exceptional resistance to slow crack growth of HCR193B can lead to increased pipe service life, lower maintenance costs and reduced replacement rates.
- There is the potential for stress concentration to initiate slow crack growth wherever “squeeze-off” is used to manage pipeline flows for planned or emergency maintenance. HCR193B increases resistance to the initiation of slow crack growth wherever these stress concentrators are present.



HDF193B

WORLD-CLASS PE100 GRADE FOR PRESSURE PIPE

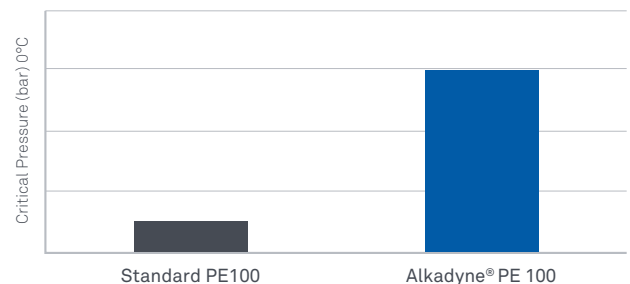
Alkadyne® HDF193B is designed to meet or exceed the key performance requirements for hydrostatic strength (MRS10), slow crack growth resistance (SCGR) and resistance to rapid crack propagation (RCP). Over many years, the mining, water and gas industries have taken advantage of the proven world class performance of HDF193B, using it in pressure pipe in large volumes.



HIGH RESISTANCE TO RAPID CRACK PROPAGATION (RCP)

Alkadyne® PE100 has passed Rapid Crack Propagation (RCP) tests at critical pressures well above the requirements of the standard. RCP performance data for sub-zero application temperature is also available. RCP performance enables pipe designers to specify:

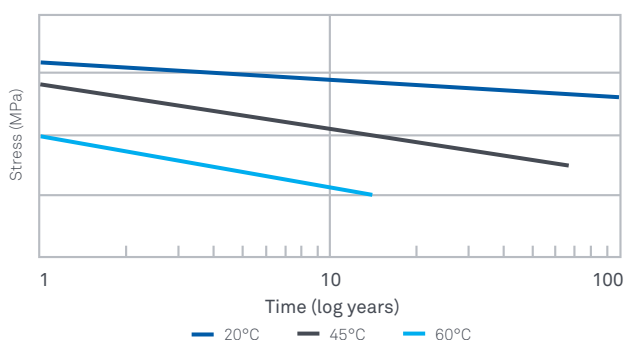
- Lower in-use temperatures
- Higher safety margins for fluid containment



BEYOND MINIMUM REQUIRED STRENGTH (MRS)

For Alkadyne® pipe grades, Qenos maintains Pipe Pressure data beyond the minimum requirements of the PE100 standard. Working with Qenos Technical Service, your pipe design can be optimised to achieve;

- Maximum lifetime design
- Elevated usage temperature



ALKADYNE® PE100

The Alkadyne® range of PE100 grades from Qenos are at the leading edge of polyethylene molecular design. Each grade performs beyond the required standards and sets a high bar for the competition.

Alkadyne® PE100 grades were developed by Qenos in partnership with Australian pipe manufacturers. Close involvement in the local pipe industry has ensured that local product and processing requirements are fully understood and incorporated into each product design. Qenos is proud that it is the only Australian manufacturer of high density polyethylene (HDPE) resin for PE100 pipe and employs over 700 Australians.

Alkadyne® PE100 – Made from Australian gas to keep Australia moving.

HDF145B

LOW SAG PE100 FOR LARGE BORE, THICK WALL PIPE

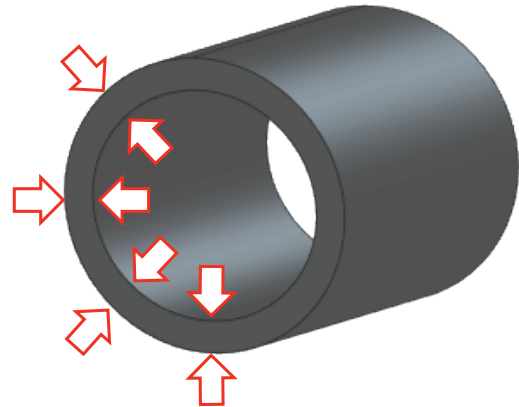
Alkadyne® HDF145B is outstanding for the production of large diameter, thick walled pipes (>100mm wall thickness). Exceptional melt strength results in ultra low sag extrusion performance making even the most challenging pipe dimensions possible using existing vacuum sizing extrusion technology. Alkadyne® HDF145B expands the range of applications for PE pipes into new frontiers and brings a proven track record in large scale projects.



EXCELLENT PIPE DIMENSIONAL STABILITY

High melt strength results in excellent pipe dimensional stability. Alkadyne® HDF145B minimises wall thickness variation and reduces rework resulting in:

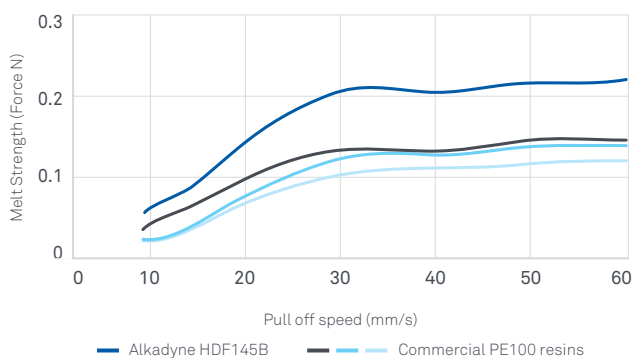
- Raw material saving
- Optimal pipe installation efficiency



ULTRA LOW SAG PERFORMANCE

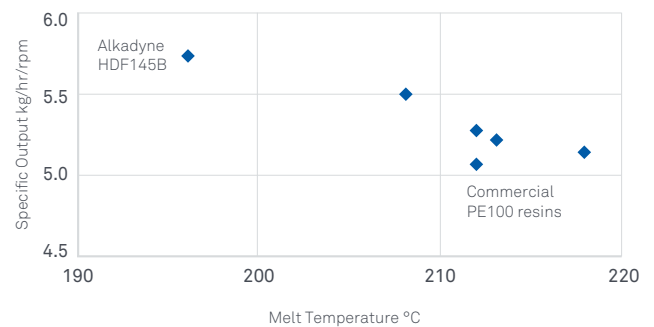
The exceptional melt strength performance means Alkadyne® HDF145B is capable of producing pipe of wall thickness greater than 80mm. This opens up new applications to PE100 pipe and allows manufacturers to access new markets.

Designers are able to consider using PE100 in applications usually reserved for steel and concrete.



HIGHER SPECIFIC OUTPUT AND COOLER MELT TEMPERATURES

The market leading extrusion performance of Alkadyne® HDF145B allows pipe extruders to increase outputs and efficiency. Production capacity can be expanded through the higher extrusion rates enabled by the properties of HDF145B. Cooling limited sites can substantially increase line speed.





RANGE

Well suited ✓ Preferred choice ✓✓

Installation	Application	HDF193B	HDF145B	HCR193B
Trench	Water Distribution	✓✓	✓	✓
	Gas Distribution	✓✓	✓	✓
	Mining slurry	✓✓	✓	✓
	Large bore, thick wall	✓	✓✓	✓
Trenchless	HDD Large bore	✓	✓✓	✓
	HDD	✓	✓	✓✓
	Pipe cracking/bursting	✓	✓	✓✓
	Slip lining, tight-lining	✓	✓	✓✓
	Plough-in	✓	✓	✓✓

*Categories are based on the typical performance requirements of the application listed and serve as a guide only.



SERVICE

A superior supply chain and logistics base allows us to serve the Australian market with high efficiency and respond quickly to variations in demand, lowering the risk of project delays. Vendor Managed Inventory systems and next day delivery give customers maximum efficiency and hassle free bulk delivery.



QUALITY

Qenos quality is driven by world class systems that are independently verified:

- Alkadyne® PE100 Black grades comply with AS/NZS 4131 for PE100 type compounds and are intended to be used in pipes conforming to AS/NZS 4130
- Alkadyne® PE100 Black grades are type test certified to AS4131 by SAI Global (Lic. 20138)
- Qenos laboratories conduct all quality assurance on Alkadyne® PE100
- Product development and technical support for customers are performed in the Qenos Technical Centre which is NATA accredited for key PE100 resin quality and performance tests
- Qenos third party registrations provide independent confirmation of compliance to recognised standards including ISO 9001



SUPPORT

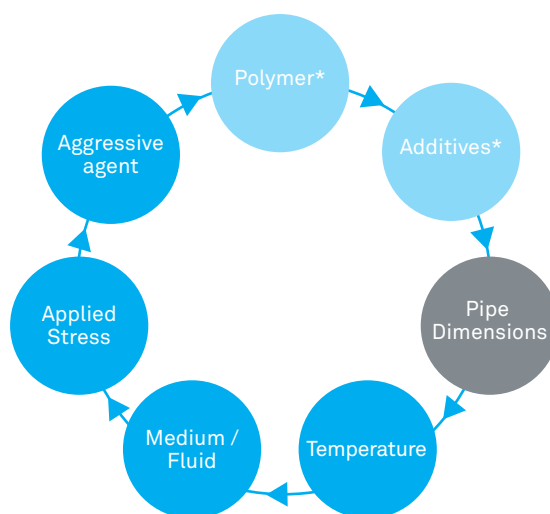
Qenos Technical Service Staff are widely recognized for their analytical capabilities and expertise and are supported by extensive Technical Centre facilities. This support not only ensures Qenos can provide advice and support for the set-up and optimisation of Alkadyne® PE 100 grades at any manufacturing facility in Australia but also provides an extensive range of processing equipment to support application development and troubleshooting for customers. This capability has been critical in the design, installation and commissioning of numerous major projects.



TESTED TO GO THE DISTANCE

Polyethylene pipe is an engineered product, required to withstand internal pressure and external influences for up to 100 years. Qenos has invested in the largest pipe pressure testing facility in the southern hemisphere where pipe is extruded for testing, and then subjected to high pressures and heat for up to three years.

Qenos also has the capability to perform Condition Assessment of PE pipelines. Service life depends on a number of factors as seen in the diagram below. These factors relate to pipe material, pipe quality and network design which need to be considered when performing a condition assessment. The pipe material testing required to make an assessment of the pipe condition requires in-depth polymer expertise. Qenos has extensive experience in testing and analysing PE pipes from the field to provide support in pipeline Condition Assessment.



● PE Material ● Pipe Design ● Service Conditions

*Pipe extrusion can impact these factors

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