

BIODIESEL

Quick STUDY

Hydra-Cell[®]
Seal-less Pumps

www.Hydra-Cell.com

Location:	Austria
Application:	Biodiesel production
Media:	• Rapeseed oil • Potassium hydroxide (KOH) • Methanol
Model No.:	D10 & D35
Flow Rate:	Up to 2640 gpm (10 m ³ /hr)
Pressure:	870 - 1000 psi (60-69 bar)
Hydra-Cell Advantages:	• Ability to pump non-lubricating, chemically aggressive liquids reliably



Biodiesel Production in Continuous Process

Higher outputs and lower costs are associated with high-pressure/low-flow continuous inline production of biodiesel, as compared with batch processing, which uses lower pressures and higher flows.

Using the inline process, an Austrian producer is pumping a mix of vegetable oils and additives to a special mixing system at pressures of 870 to 1000 psi (60 to 69 bar) and temperatures of 122°F to 140°F (50°C to 60°C). The mix includes rapeseed oil, KOH (potassium hydroxide) and methanol, a combination which is non-lubricating, chemically aggressive and very difficult to pump. In tests, various pump types such as screw pumps, piston pumps and gear pumps, had lifetimes ranging from two to eight weeks. Repair costs of more than \$13,000 USD were incurred.

Hydra-Cell pumps, with PTFE diaphragms, had a lifetime of 5,500 hours (32 weeks), were easy to maintain and repair costs were judged to be acceptable.



Characteristics of Fluid Pumped:

☐ Contains Abrasives ☒ Corrosive ☐ Solids in Suspension ☐ High-temp. (>158°F/70°C) ☒ Non-lubricating ☐ High-viscosity (>500 cPs)