



CASE STUDY

Bespoke gasket solution for plastic to kerosene application

Ensuring a gas-tight seal in pioneering conditions, leading to the clean energy future

● INDUSTRY CHALLENGES

Recycling plastic into hydrocarbons requires extreme pressures and temperatures, challenging the performance of traditional gaskets. Before contacting Pipeotech, the university had been utilizing Kammprofile gaskets which consistently failed at around 80 BarG pressure during trial operations. Ensuring a reliable seal was essential to confirm proof of concept, and this was made possible with Pipeotech's engineering expertise and the DeltaV-Seal™ flange gasket.

● BACKGROUND

As the industry works to recycle waste into clean fuels, Pipeotech assisted an English University with its project to turn waste plastic and organic matter into a source of high-quality kerosene. The Pipeotech engineering team conducted extensive software analysis for the proposed concept of the DeltaV-Seal™ to perform in extreme temperature and pressure conditions where the traditional Kammprofile gaskets had previously failed.

PIPEOTECH

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Material

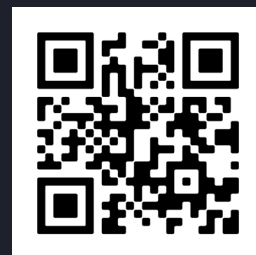
316L, Stainless Steel

Industry

Green Fuel from Waste

Customer

UK University



● BENEFITS

A bespoke, durable, and engineered DeltaV-Seal™ enabled the university to engineer and build a pilot test rig to confirm proof of concept. The project continues with the assistance of the DeltaV-Seal™ to scale up to a point where plastic and organic waste converts into high-quality kerosene.



ENDURING QUALITY



HIGH TEMPERATURE



HIGH PRESSURE

OPERATIONAL CONDITIONS

PRESSURE: 120 - 250 BarG

ATMOSPHERIC CONDITIONS: Indoor Test Rig

TEMPERATURE: 550 °C

MEDIA (PRODUCT): Plastic & Organic Matter

SIZE: Bespoke

MEDIA (CLEANING): N/A

● SOLUTIONS

Working in partnership, the university and Pipeotech developed a pressure vessel with a bespoke DeltaV-Seal™ gasket. Pipeotech's 316L stainless steel seal is suitable to contain both the extreme pressure and temperature experienced within the pressure vessel. The seal has allowed the client to show proof of concept and advance towards fully commercialising the technology.



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