synthesis technology

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The oil-from-coal process is utilised by SASOL in its existing operation facilities in South Africa. Since the start-up of Sasol Synthetic Fuels in the early 1980s, production has increased to a current 150 000 bbl/day of synthetic fuels.

The SASOL process starts in the gasification plant where coal under pressure and at high temperature, in the presence of steam and oxygen is converted to crude gas. After cooling, the gasification condensates yield co-products such as tars, oils and pitches. Other co-products such as nitrogenous compounds, sulphur and phenolics are recovered as ammonia, sulphur, cresols and phenol respectively, with the pitch being converted to coke in the anode coke plant. The purified synthesis feed gas is then available for
conversion by means of either Advanced Synthol or Slurry Phase Reactor propriety technology.

At the Sasol Wax factory in Sasolburg, the synthesis gas from gasification is converted using either fixed bed or the in-house developed SASOL Slurry Phase Reactor. In this low temperature FISCHER-TROPSCH conversion process, the synthesis feed gas is reacted at a lower temperature to produce hydrocarbons mainly in the distillate and waxes range.

Hard wax, candle wax and speciality Fischer-Tropsch waxes, are produced in the process.