SHELL GAS-TO-LIQUID (GTL) BASE OIL CONVERTING NATURAL GAS TO BASE OILS FOR LUBRICANTS

WHEN COMPARED TO TRADITIONAL GROUP II/III BASE OILS*

SHELL GTL BASE OIL

A high-quality base material used in Shell's premium finished lubricants

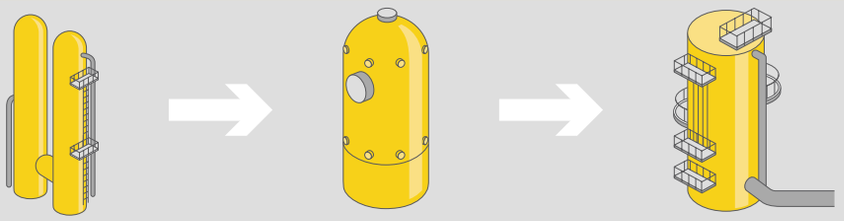
- Higher viscosity index
- Lower volatility
- Better additive response
- Better oxidation stability

WHY GTL?

Base oil produced from natural gas at a molecular level results in a significantly more stable product than conventional base oils.

HOW ARE SHELL GTL BASE OILS PRODUCED?

PRODUCING SHELL GTL BASE OILS



1. Gasification
Methane from natural gas reacts with pure oxygen to produce synthesis gas

2. Synthesis
Synthesis gas is fed through a reactor and converted to a liquid called syncrude

3. Hydrocracking
Syncrude is fed into a hydrocracker to break down molecules and form new ones

4. GTL Products
The new molecules are distilled into GTL base oils for use in finished lubricants

SHELL GAS-TO-LIQUIDS PROCESS

THE SHELL GTL PROCESS TRANSFORMS NATURAL GAS INTO LIQUID AND SOLID HYDROCARBONS WITH HIGH PURITY

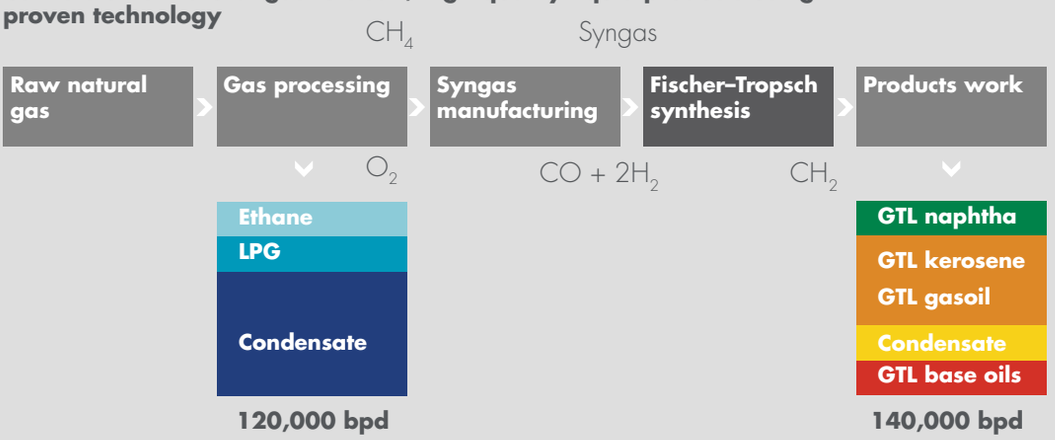
Catalyst

Methane + oxygen

Hydrogen | Carbon monoxide | Water

Fischer–Tropsch distillates

Conversion of natural gas to clean, high-quality liquid products using proven technology



BENEFITS OF USING LUBRICANTS WITH SHELL GTL BASE OIL**

Less equipment wear

Reduced fuel consumption

Better equipment cleanliness

Longer lubricant life

Discover more about the world's largest GTL plant:

*There are five technical grades of base oil based on composition saturates, sulphur and viscosity API: I, II, III, IV, V.
**When tested against market representative products

SHELL LUBRICANTS
TOGETHER ANYTHING IS POSSIBLE