



— University of Mosul —
College of Petroleum & Mining Engineering



Title of the lecture

Lecture Two

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Products Composition

To understand the diversity contained in crude oil, and to understand why refining crude oil is important in our society, look through the following list of products that come from crude oil:

Products Composition

☐ **Liquefied Petroleum Gas (LPG)**

- ☐ used for heating, cooking, making plastics
- ☐ small alkanes (1 to 4 carbon atoms)
- ☐ commonly known by the names methane, ethane, propane, butane
- ☐ boiling range < 90 degrees Fahrenheit / < 27 degrees Celsius
- ☐ often liquified under pressure to create LPG (liquefied petroleum gas)

☐ **Gasoline**

- ☐ motor fuel
- ☐ liquid
- ☐ mix of alkanes and cycloalkanes (5 to 7 carbon atoms)
- ☐ boiling range = 90-220 degrees Fahrenheit / 27-93 degrees Celsius

Products Composition

☐ **Kerosene**

- ☐ fuel for jet engines and tractors; starting material for making other products
- ☐ liquid
- ☐ mix of alkanes (10 to 15 carbons) and aromatics
- ☐ boiling range = 315-450 degrees Fahrenheit / 177-293 degrees Celsius

☐ **Diesel Fuel**

- ☐ used for diesel fuel and heating oil, starting material for making other products
- ☐ liquid
- ☐ alkanes containing 13-18 carbon atoms
- ☐ boiling range = 450-650 degrees Fahrenheit / 293-315 degrees Celsius

Products Composition

☐ **Lubricating oil**

- ☐ used for motor oil, grease, other lubricants
- ☐ liquid
- ☐ long chain (20 to 50 carbon atoms) alkanes, cycloalkanes, aromatics
- ☐ boiling range = 572 to 700 degrees Fahrenheit / 300 to 370 degrees Celsius

☐ **Fuel oil**

- ☐ used for industrial fuel; starting material for making other products
- ☐ liquid
- ☐ long chain (16 to 40 carbon atoms) alkanes, cycloalkanes, aromatics
- ☐ boiling range = 650-800 degrees Fahrenheit / 315-565 degrees Celsius

☐ **Residual oil**

- ☐ coke, asphalt, tar, waxes; starting material for making other products
- ☐ solid
- ☐ multiple-ringed compounds with 40 or more carbon atoms
- ☐ boiling range = greater than 800 degrees Fahrenheit / 565 degrees Celsius