

The valuable raw material from Austria

Use of the raw material crude oil

Crude oil contains at least 500 different compounds, mainly comprising carbon and hydrogen. This is what makes it so versatile.

Crude oil is part of countless everyday products. Through various processing steps, crude oil is used to produce not only fuels but also basic materials for a wide range of applications. Around 90% of all chemical products are oil-based. Countless products and technologies that are indispensable in our everyday lives and will continue to do so in future are based on crude oil. Due to its uniqueness, crude oil as a raw material is partly non-substitutable.

When products made of crude oil – hydrocarbon compounds – such as gasoline, kerosene, liquefied petroleum gas, and naphtha are cracked under high pressure and heat, ethylene, propylene, butadiene, benzene, and bitumen, among others, are obtained. These basic materials, in turn, are the basis for numerous products and technologies in the chemical industry, such as plastics, medicines, synthetic fibers, paints, varnishes, lubricants, adhesives, but also clothing and shoes, car tires, asphalt, pipes, etc.



In Austrian industry, around 618,140 tons of crude oil (2021) are required annually as a raw material, i.e. for non-energy use. This corresponds to about 6.2% of total petroleum consumption (9.97 million tons in 2021) in Austria. Austria's annual production of crude oil (559,947 tons / RAG 53,620 tons in 2021) thus just about covers the raw material requirements of domestic industry and thus makes a significant contribution to security of supply and to safeguarding Austria as a business location.

Most of the crude oil used as a material (75%, 458,620 tons in 2021) is used for the production of bitumen, which is indispensable primarily in asphalt road construction but also as a sealing, insulation and packaging material. The remaining 25% (159,520 t) is used for liquefied petroleum gas, lubricants and feedstock products for the chemical industry.

Liquid gas, the lightest component of crude oil, serves as a raw material for the petrochemical industry. Lubricants such as greases and oils reduce wear and tear on engines and machines and are essential operating materials for all mechanical processes.

Further product examples: <https://www.rep-austria.at/en/valuable-crude-oil/crude-oil-in-everyday-life.html>

Crude oil production 2021

Total Austria 559,947 t / RAG 53,620 t

Domestic consumption 2021

9.97 million t

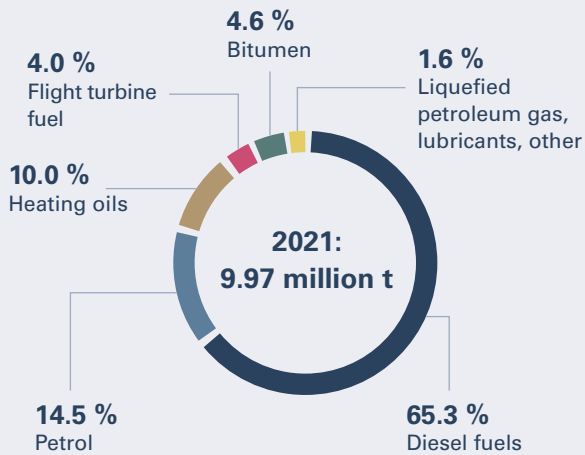
618,140 t (6.2%) are consumed as raw material.

RAG's production covers about 1/10 of the raw material demand.

Due to its special properties (viscosity) Austrian crude oil is particularly suitable for material use and high-quality further processing.

Austria's annual production of crude oil just about covers the raw material demand of domestic industry.

Mineral oil products Domestic consumption



Background information

Bitumen

Bitumen is the oldest mineral oil product. It is a viscous to solid residue that does not evaporate in the distillation process even at very high temperatures. It is used primarily in road construction, but also as a sealing, insulation and packaging material.

In Austria, 85% of bitumen is used in asphalt road construction. The remainder of the bitumen produced is used for industrial purposes, with the production of roofing and waterproofing membranes predominating in terms of volume. Industrial bitumen is also used for coatings for insulation purposes or as jointing compounds.

Liquefied petroleum gas

Liquefied petroleum gas (LPG) comprises the lightest components of crude oil, essentially propane and butane, which exist as a gas at room temperature. This gas is collected in the refinery, liquefied under slight over-pressure and stored in tanks. Today, liquefied gas is used primarily for heating and cooking purposes and as a raw material for the petrochemical industry.

Lubricants

Lubricants reduce wear and tear on engines and machines and are essential operating materials for all mechanical processes. These special oils must be extremely stable, withstand extreme cold and heat as well as high loads. The feedstocks are special base oils from the refining process, which are further chemically treated and mixed with additives.

Feedstocks for chemical industry

Less than ten percent of the products extracted from crude oil end up as feedstocks in the chemical industry. These products form the cornerstone of the petrochemical industry, which uses them to manufacture a huge range of different compounds. Kerosenes and waxes are used to impregnate surfaces, to make candles, and in the chemical and pharmaceutical industries. White oils with the highest degree of purity serve as basic materials in the pharmaceutical industry. Olefins are used to produce synthetic fibers and plastics, while aromatics are used as solvents and for a variety of processes in the chemical industry.

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