

A laboratory setup featuring several pieces of glassware. In the foreground, a graduated cylinder with a yellow liquid and a 100 ml scale is visible. Behind it, a round-bottom flask contains a blue liquid. To the right, a test tube is held in a clamp, containing a red liquid. In the background, a Bunsen burner is lit, with a bright orange and yellow flame. The entire scene is set against a dark background with wisps of white smoke or steam rising from the apparatus.

Пределные углеводороды

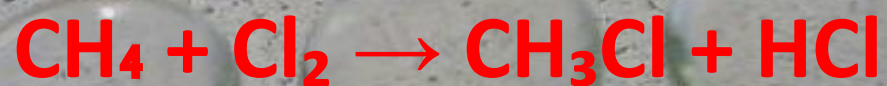
A photograph of laboratory glassware against a black background. In the center is a large round-bottom flask containing a dark brown liquid. To its left is a smaller flask tilted to the left. To its right are two beakers, one containing a yellow liquid and the other a purple liquid. Several test tubes are visible in the background.

Алканы $C_n H_{2n+2}$

A chemistry laboratory setting. In the foreground, there are several wooden racks filled with test tubes containing various colored liquids. A person wearing a white lab coat and a white cap is seen from the back, working with the test tubes. In the background, there are more laboratory equipment, including a balance scale and a water tap, and a person sitting at a desk. The room has large windows and a wooden door.

Химические свойства

1. Реакции замещения:



Реакции протекают по радикальному механизму.

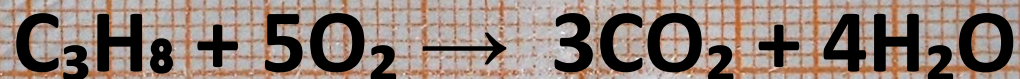


3. Реакции дегидрирования:

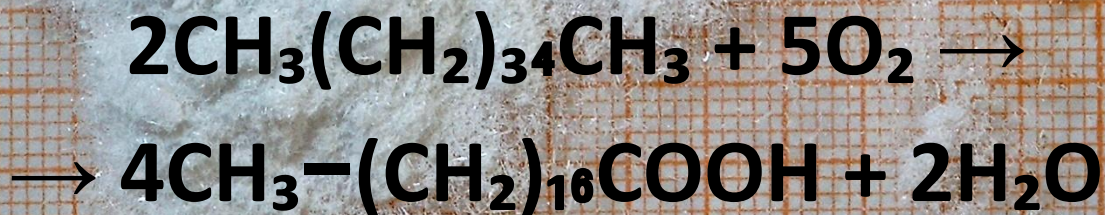
При $t = 1500^{\circ}\text{C}$ происходит межмолекулярное дегидрирование метана по схеме:



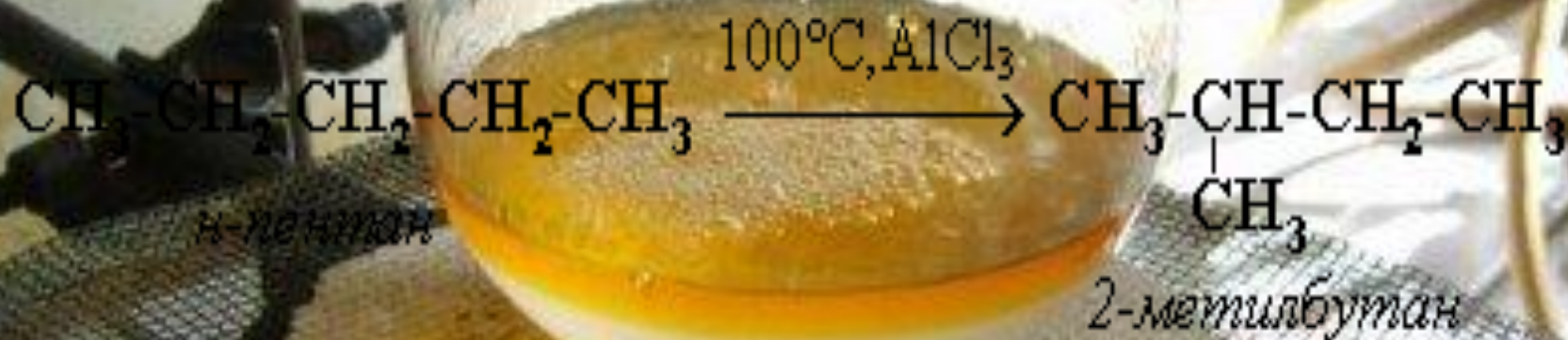
2. Реакции окисления. Предельные углеводороды горят (пламя не коптящее):



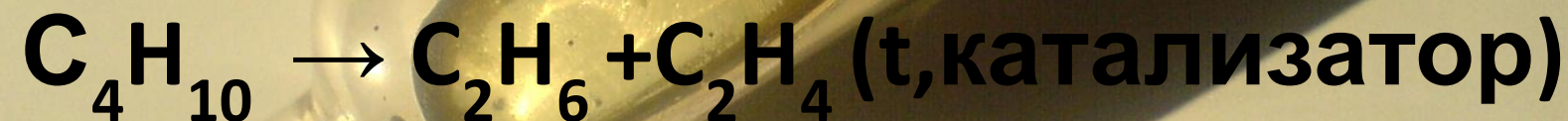
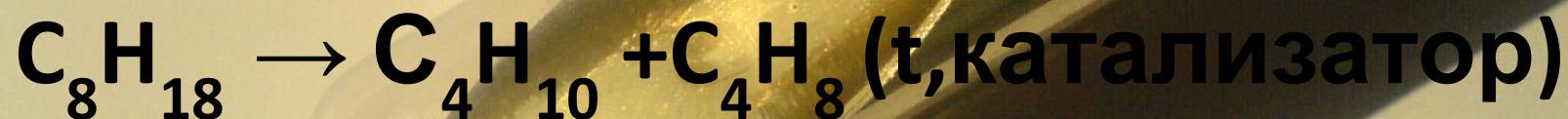
В присутствии катализатора окисляются:



4. Реакции изомеризации:



Крекинг нефти и нефтепродуктов:

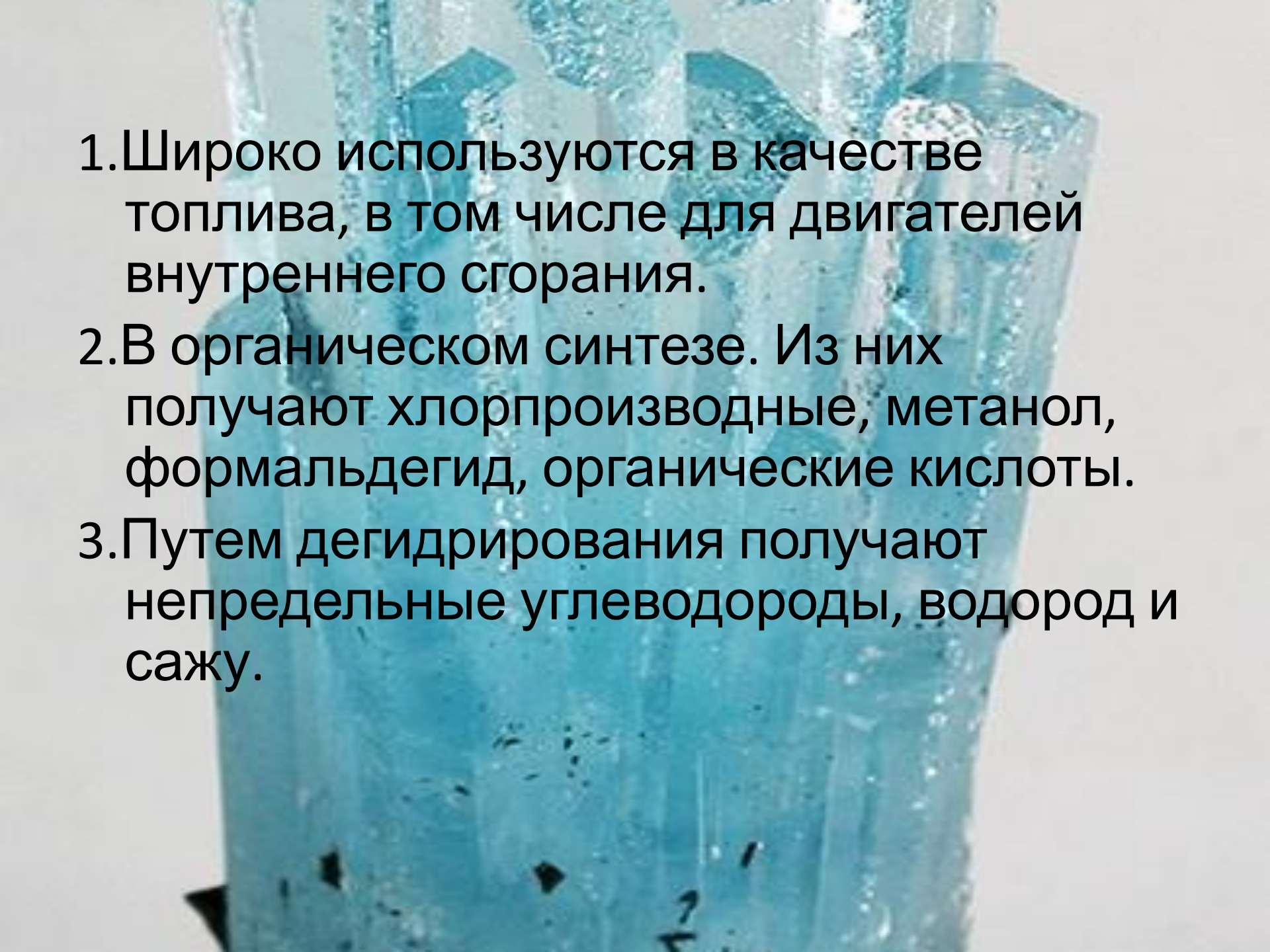


5. Реакции с водяным паром:



Применение



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1. Широко используются в качестве топлива, в том числе для двигателей внутреннего сгорания.
 2. В органическом синтезе. Из них получают хлорпроизводные, метанол, формальдегид, органические кислоты.
 3. Путем дегидрирования получают непредельные углеводороды, водород и сажу.

