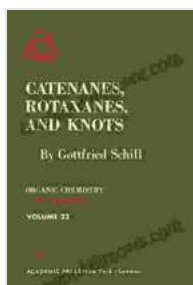


# Catenanes, Rotaxanes, and Knots

Catenanes, rotaxanes, and knots are molecular machines that have attracted considerable attention due to their potential applications in nanotechnology. This book provides a comprehensive overview of the field, covering the synthesis, properties, and applications of these molecules.



## Catenanes, Rotaxanes, and Knots by George Orwell

★★★★☆ 4.8 out of 5

Language : English

File size : 16514 KB

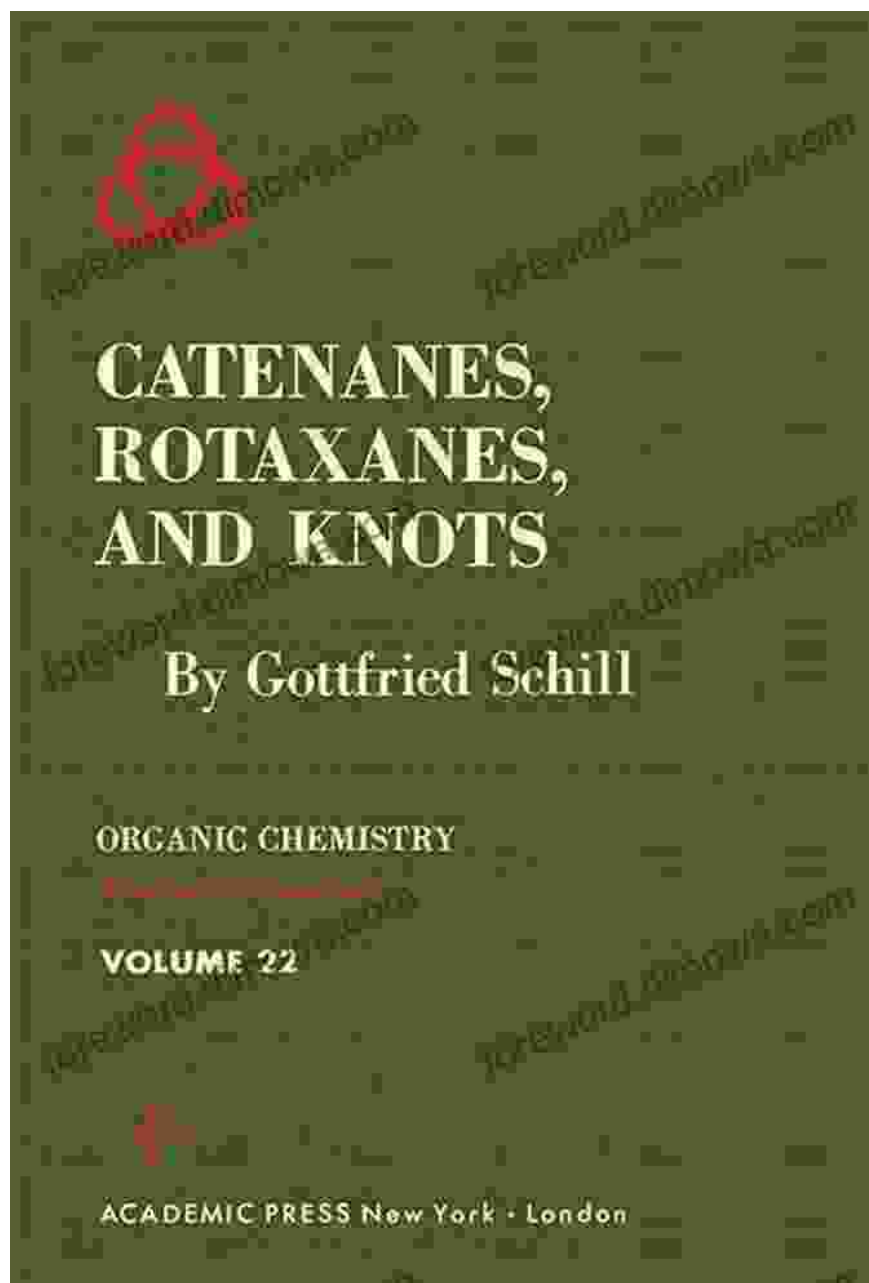
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Print length : 204 pages



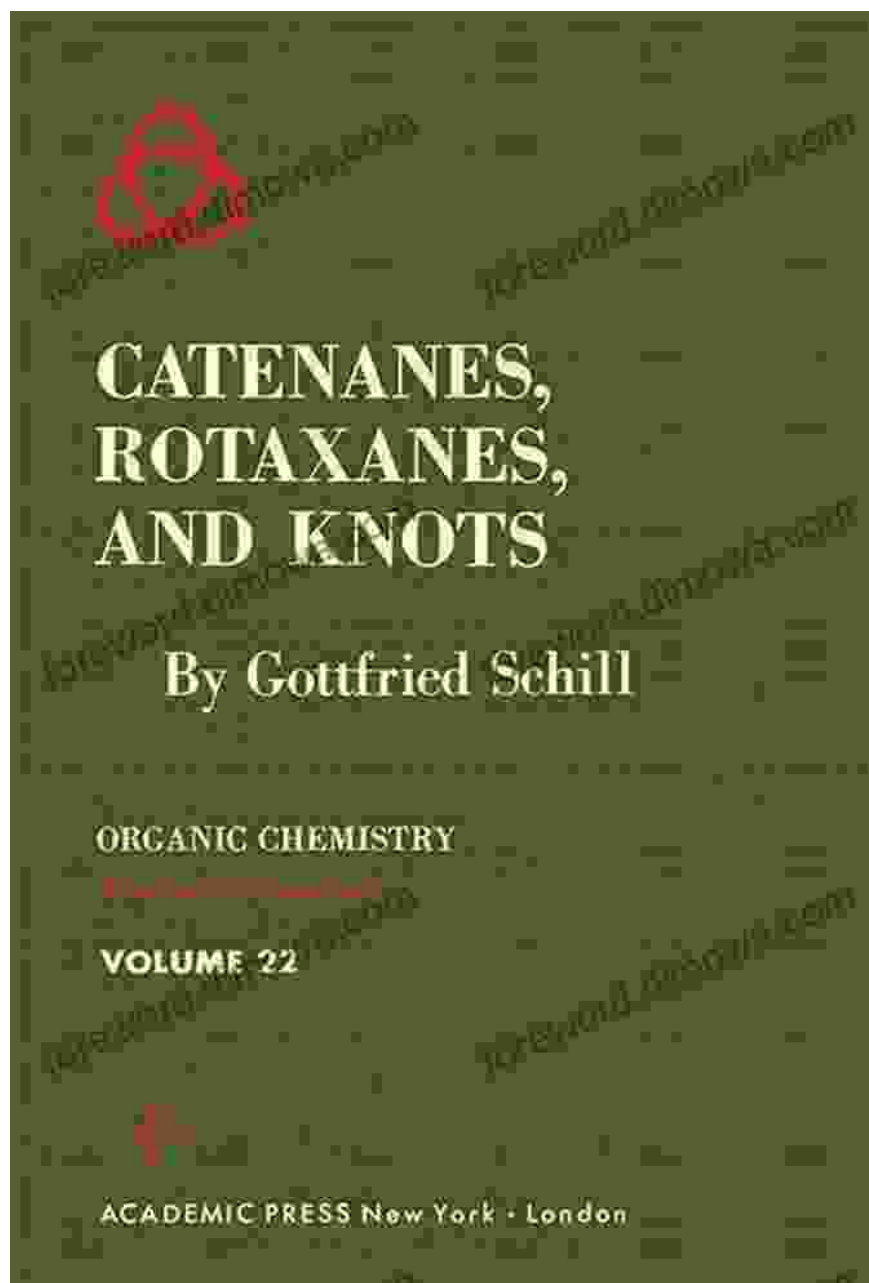
## Catenanes

Catenanes are molecules that consist of two or more rings that are interlocked. The rings can be of different sizes and shapes, and they can be connected by a variety of chemical bonds. Catenanes are often used as models for studying the behavior of molecular machines.



## Rotaxanes

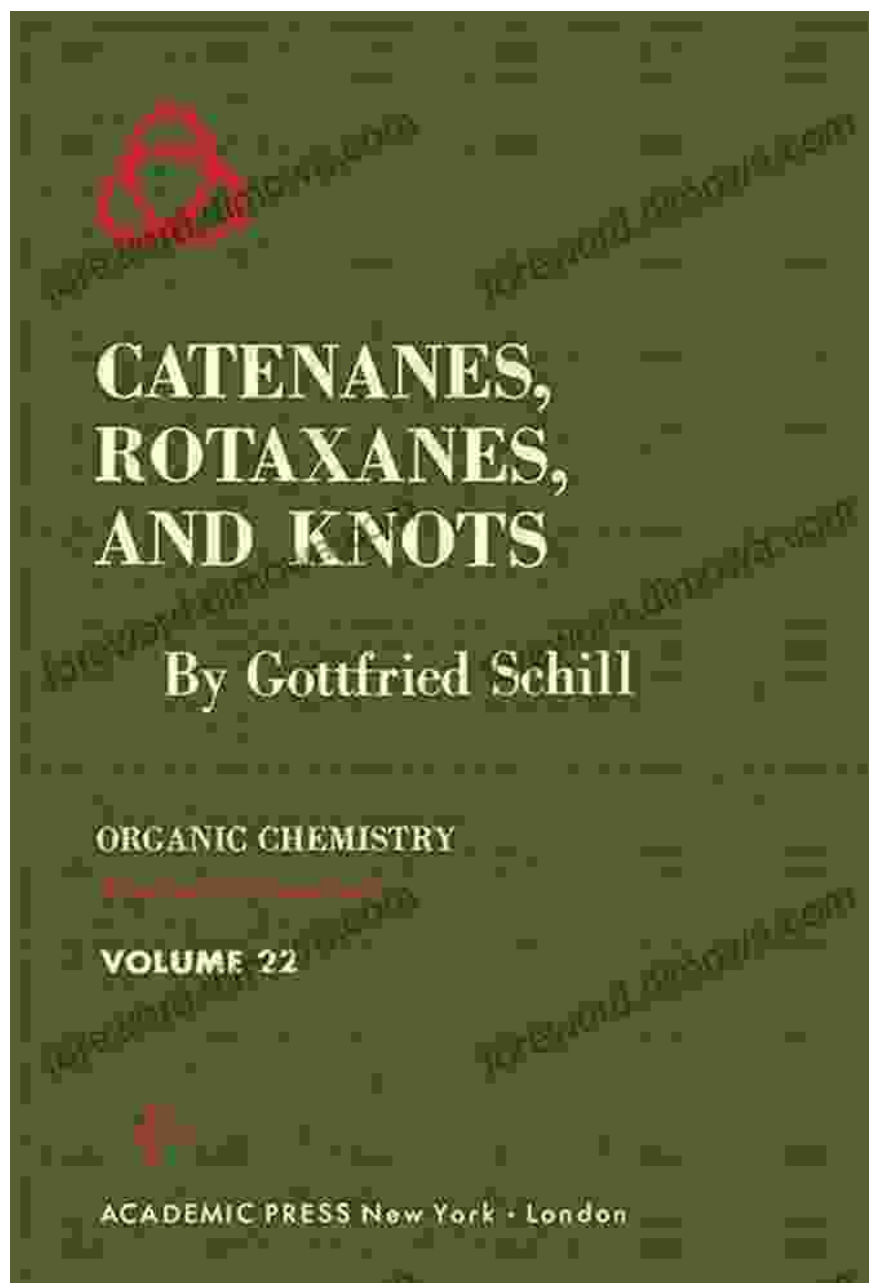
Rotaxanes are molecules that consist of a ring that is threaded onto a dumbbell-shaped molecule. The ring can move along the dumbbell, but it cannot be removed. Rotaxanes are often used as models for studying the transport of molecules across membranes.



A rotaxane molecule

## **Knots**

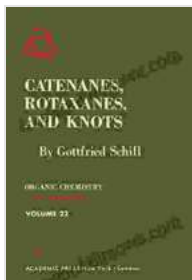
Knots are molecules that are formed by tying a string into a loop. Knots can be of different types, and they can be used for a variety of purposes. Knots are often used as models for studying the behavior of DNA.



## Applications

Catenanes, rotaxanes, and knots have a wide range of potential applications in nanotechnology. These molecules can be used to create new materials, devices, and machines. For example, catenanes can be used to create molecular switches, rotaxanes can be used to create molecular motors, and knots can be used to create molecular sensors.

Catenanes, rotaxanes, and knots are fascinating molecules with a wide range of potential applications. This book provides a comprehensive overview of the field, covering the synthesis, properties, and applications of these molecules.



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