

Molecular Descriptors and Topological Analysis of Cyclooctane Derivatives

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December 15, 2021

Abstract

Cyclooctane is mainly used in the synthesis of cyclooctanone, cyclooctanol, caprolactam and octanoic acid. At the same time, it can also be used as an intermediate in organic synthesis and a chemical reagent. By discussing the resistance distance between any two points of cyclooctane derivative $Tn(C8)$, some invariants about resistance distance are obtained, such as Kirchhoff index, multiplicative degree-Kirchhoff index, and additive degree-Kirchhoff index. Topological index can help scholars better understand some physical and chemical properties of compounds, and we obtain the closed expressions of valency-based topological indices for $Tn(C8)$, such as ABC index, GA index, etc.

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