

Abstract

Disclosed is an unsupported bimetallic hydrogenation catalyst, its preparation and application thereof, the catalyst is composed of a complex formed by bonding a metal central atom or central ion with an organic ligand through a coordination bond, and has a schematic composition represented by formula (I): $M^1M^2O_a[R(COO)_x]_b$ (I), wherein M^1 and M^2 represent metals, $R(COO)_x$ represents an organic ligand, R represents the hydrocarbyl group of the organic ligand, COO represents the coordinating group of the organic ligand, x represents the number of coordinating groups in the organic ligand, a represents the molar ratio of oxygen atom linked to the metal via a non-coordination bond to the total amount of the metal, and b represents the molar ratio of the organic ligand to the total amount of the metal. When used for hydrogenation of hydrocarbons, the catalyst and composition thereof show high dispersibility in oil phase, high hydrogenation activity and high selectivity to target product.

Fig. 1