

Role of Transition Metals in Coordinating with Heteroatom-Containing Organic Ligands

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Abstract: *It is very insightful to synthesize and study copper subgroup metal complexes with organic ligands that include several heteroatoms in their structure. The resultant complex compounds will have a number of novel qualities that are useful in real-world applications because they have different physical and chemical features from the original organic components. 2-mercapto-4(3H)-quinazolinone and 2-mercaptopyridine-3-carboxylic acid were used in this investigation. Complex compounds of copper subgroup metals were extracted from aqueous and water-alcohol solutions throughout the study. The chemicals that are produced resemble colorful powders. Instrumental analytical techniques were used to determine the organic reagent's coordination with metal ions. The impact of the added reagent (ammonia, alkali) on the organic reagent's coordination was examined.*

Keywords: Transition metals, complexation, organic ligands, heteroatoms, coordination chemistry, metal-ligand interactions