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Unprecedented Formation of Ruthenium 2-Mercaptobenzothiazole Complex

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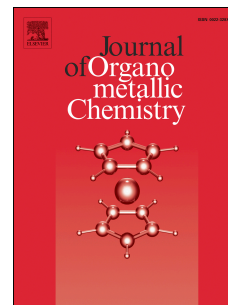
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**Unprecedented Formation of Ruthenium 2-Mercaptobenzothiazole Complex****Wen-Lin Huang, Guan-Jie Hung and Yih-Hsing Lo\***

The CS<sub>2</sub> insertion of ruthenium chloride complex Tp(Ph<sub>2</sub>C=NH)(PPh<sub>3</sub>)Ru-Cl (**1**) in the presence of CH<sub>3</sub>OH resulted in the *O*-methylthiocarbonate complex Tp(PPh<sub>3</sub>)Ru( $\kappa^2$ -S<sub>2</sub>COCH<sub>3</sub>) (**3**). Attractively, the analogous reaction with CS<sub>2</sub> in the presence of PhN<sub>3</sub> in toluene at reflux led to unprecedented formation of the ruthenium 2-mercaptobenzothiazole complex Tp(PPh<sub>3</sub>)Ru( $\kappa^2$ -*S,N*-N=CS<sub>2</sub>C<sub>6</sub>H<sub>4</sub>) (**4**), possibly *via* the C–H activation of an imido intermediate. Theoretical calculations support the proposed mechanism.

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