

## Synthesis and structure of the platinum complexes: [MeCH=CHCH<sub>2</sub>PPh<sub>3</sub>]<sub>2</sub>[PtCl<sub>6</sub>], [MeOCH<sub>2</sub>PPh<sub>3</sub>]<sub>2</sub>[PtCl<sub>6</sub>], [NH<sub>2</sub>(CH<sub>3</sub>)<sub>2</sub>]<sub>2</sub>[PtCl<sub>6</sub>]

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### Abstract

In this paper reacting chloroplatinic acid with chlorides tetraorganylphosphonium (-ammonium) were obtained and structurally characterized platinum complexes [MeCH=CHCH<sub>2</sub>PPh<sub>3</sub>]<sub>2</sub>[PtCl<sub>6</sub>] (**1**,  $M = 1042.52$ , monoclinic,  $P2_1/n$ ,  $a = 11.0421(4)$  Å,  $b = 16.0332(6)$  Å,  $c = 12.5274(4)$  Å,  $\beta = 97.705(3)^\circ$ ,  $V = 2197.82(13)$  Å<sup>3</sup>,  $Z = 2$ ,  $\rho = 1.575$  g/cm<sup>3</sup>,  $\mu = 3.66$  mm<sup>-1</sup>,  $F(000) = 1036$ ,  $GOOF = 1.042$ ,  $R_1 = 0.0396$ ,  $wR_2 = 0.0597$ ), [MeOCH<sub>2</sub>PPh<sub>3</sub>]<sub>2</sub>[PtCl<sub>6</sub>] (**2**,  $M = 1022.45$ , triclinic,  $P\bar{1}$ ,  $a = 10.2432(3)$  Å,  $b = 10.3595(3)$  Å,  $c = 10.7483(4)$  Å,  $\alpha = 79.652(3)^\circ$ ,  $\beta = 69.329(3)^\circ$ ,  $\gamma = 73.790(3)$ ,  $V = 1020.52(6)$  Å<sup>3</sup>,  $Z = 1$ ,  $\rho = 1.664$  g/cm<sup>3</sup>,  $\mu = 3.943$  mm<sup>-1</sup>,  $F(000) = 506$ ,  $GOOF = 1.034$ ,  $R_1 = 0.0287$ ,  $wR_2 = 0.0532$ ), [NH<sub>2</sub>(CH<sub>3</sub>)<sub>2</sub>]<sub>2</sub>[PtCl<sub>6</sub>] (**3**,  $M = 556.08$ , monoclinic,  $P2_1/n$ ,  $a = 9.0007(4)$  Å,  $b = 10.4767(3)$  Å,  $c = 9.7112(3)$  Å,  $\beta = 93.805(3)^\circ$ ,  $V = 913.72(13)$  Å<sup>3</sup>,  $Z = 2$ ,  $\rho = 2.021$  g/cm<sup>3</sup>,  $\mu = 8.54$  mm<sup>-1</sup>,  $F(000) = 532$ ,  $GOOF = 1.033$ ,  $R_1 = 0.0357$ ,  $wR_2 = 0.0725$ ), consisting of tetrahedral cations tetraorganylphosphonium (-ammonium) and octahedral anions hexachloroplatinate (Pt–Cl 2.3167(7)-2.3198(8), 2.3199(6)-2.3246(6), 2.3154(11)-2.3206(12) Å for **1**, **2** and **3** respectively).