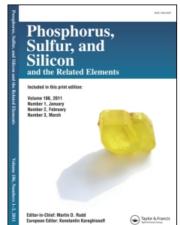
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## Phosphorus, Sulfur, and Silicon and the Related Elements

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## Radical Addition of Bis(Trimethylsilyl)Phosphonate to Vinyltrimethylsilane: Crystal Structure of (2-Trimethylsilylethyl)Phosphonic Acid

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## Radical Addition of Bis(Trimethylsilyl)Phosphonate to Vinyltrimethylsilane: Crystal Structure of (2-Trimethylsilylethyl)Phosphonic Acid

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The formation of phosphorus-carbon bond by free radical addition of phosphorus compounds containing P-H bond to olefins has been known since more than three decades ago. Alkyl or aryl phosphins, phosphinates, phosphonates and phosphorus or hypophosphorus acid have been used in these reactions, but a little attention have been paid to silyl phosphonates. As a part of ongoing study on the structure and reactivity of organosilicon-phosphonate compounds, we synthesized bis(trimethylsilyl) (2-trimethylsilylethyl)phosphonate (I) by the reaction of bis(trimethylsilyl) phosphonate with vinyltrimethylsilane in the presence of a peroxide. The product was characterized by its <sup>1</sup>H and <sup>31</sup>P NMR and IR spectra. Hydrolysis of (I) led to the formation of corresponding phosphonic acid (II). The crystal structure of (II) has been determined by X-ray diffraction analysis.