

Synthesis and Heat Resistance of Arylenedioxy-organosilanylene Polymers with Adamantane Units

Takayuki Maehara^{a,b}, Hiroshi Hashimoto^a, and Joji Ohshita^a

^a Department of Applied Chemistry, Graduate School of Engineering, Higashi-Hiroshima 739-8527, Japan

^b Tsukuba Research Lab., Tokuyama Corporation, Tsukuba 300-4247, Japan

Reprint requests to Prof. J. Ohshita. Fax: +81-82-424-7743. E-mail: jo@hiroshima-u.ac.jp

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Dedicated to Professor Hubert Schmidbaur on the occasion of his 75th birthday

Arylenedioxy-organosilanylene polymers with adamantane units in the backbone were prepared by Rh-catalyzed dehydrocoupling of bis(4-hydroxyphenyl)adamantanes with organohydrosilanes, and their heat resistance was evaluated by thermogravimetric analysis in nitrogen. Among these polymers, the highest T_{d10} (10% weight loss temperature) of 547 °C was achieved for polymer **2a** prepared from 1,3-bis(4-hydroxyphenyl)adamantane and phenylsilane. Polymer **2a** exhibited good heat resistance even in air with $T_{d10} = 387$ °C, and standing of the polymer at 150 °C for 8 h resulted in no evident weight loss.

Key words: Adamantane, Organosilicon Polymer, Heat Resistance