

Accepted Manuscript

Novel Route to Silanetriols and Silanediols based on Acetoxysilylalkoxides

Miriam de J. Velásquez-Hernández, Aarón Torres-Huerta, Uvaldo Hernández-Balderas, Diego Martínez-Otero, Alejandra Núñez-Pineda, Vojtech Jancik

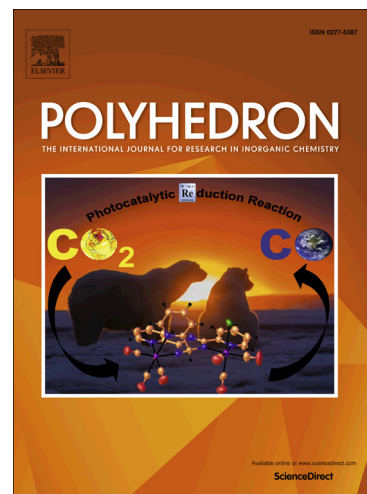
PII: S0277-5387(16)30548-4
DOI: <http://dx.doi.org/10.1016/j.poly.2016.10.051>
Reference: POLY 12304

To appear in: *Polyhedron*

Received Date: 30 August 2016
Revised Date: 30 October 2016
Accepted Date: 31 October 2016

Please cite this article as: M.d.J. Velásquez-Hernández, A. Torres-Huerta, U. Hernández-Balderas, D. Martínez-Otero, A. Núñez-Pineda, V. Jancik, Novel Route to Silanetriols and Silanediols based on Acetoxysilylalkoxides, *Polyhedron* (2016), doi: <http://dx.doi.org/10.1016/j.poly.2016.10.051>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Novel Route to Silanetriols and Silanediols based on Acetoxysilylalkoxides

Miriam de J. Velásquez-Hernández,^a Aarón Torres-Huerta,^a Uvaldo Hernández-Balderas,^a Diego Martínez-Otero,^a Alejandra Núñez-Pineda^a and Vojtech Jancik^{*a}

^aCentro Conjunto de Investigación en Química Sustentable UAEM-UNAM, Carr. Toluca-Atlacomulco km 14.5, 50200 Toluca, Estado de México, México.

* Corresponding Author. Tel.: +52 722 2766610; fax: +52 55 56162217.

E-mail address: vjancik@unam.mx (V. Jancik)

Silanols • Hydrolysis • Acetoxysilylalkoxides • Structural study • CO₂ Conversion.

Abstract

An easy and versatile method for the preparation of molecular alkoxysilanols as molecular organosilicates based on acetoxysilylalkoxides (ASA, (RO)(*t*BuO)_nSi(OAc)_{3-n} or (AcO)_{3-n}(*t*BuO)_nSi-O-R-O-Si(*Ot*Bu)_n(OAc)_{3-n}, R = organic group; n = 0 or 1) is presented. These ASA precursors are prepared from silicon tetraacetate and suitable alcohols and are cleanly hydrolyzed in water to the corresponding alkoxysilanols in the absence of a base or organic solvents. The compounds were characterized by common spectroscopic methods including X-Ray structural analysis. Alkoxysilanols were tested in the catalytic conversion of CO₂ to styrene carbonate and show quantitative conversion within 15 hours at 60 °C and 1 atm of CO₂.

Download English Version:

<https://daneshyari.com/en/article/5154580>

Download Persian Version:

<https://daneshyari.com/article/5154580>

[Daneshyari.com](https://daneshyari.com)