ISSN 1070-3632, Russian Journal of General Chemistry, 2009, Vol. 79, No. 11, p. 2458. © Pleiades Publishing, Ltd., 2009.
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## LETTERS TO THE EDITOR

# A New Method of Preparation of O-Silylurethanes

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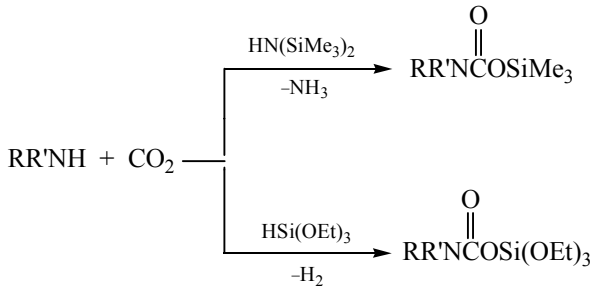
Received February 24, 2009

**DOI:** 10.1134/S1070363209110322

It was shown earlier [1, 2] that *O*-silylure-thanes can be obtained via N-siloxycarbonylation of nitrogen-containing compounds.

Carbon dioxide/hexamethyldisilasane [3] or carbon dioxide/silane hydride [4] systems were used as an *N*-siloxycarbonylating reagent.




R = H, Alk, Ar, $Me_2N$.

We established that a novel system carbon dioxide/*N,N'*-bis(trimethylsilyl)carbodiimide can be used as *N*-siloxycarbonylating reagent.

$$RNH_2 + Me_3SiN{=}C{=}NSiMe_3 + CO_2 \rightarrow RNHC(O)OSiMe_3,$$

R = Me, Et, Ph, All, $Me_3SiOCH_2CH_2$.

This reaction proceeds easily and produces *O*-silylurethanes in a high yield (95–98%).

**Trimethylsilyl diethylcarbamate.** Carbon dioxide was bubbled through a solution of 14.8 g (0.08 mol) of *N,N'*-bis-(trimethylsilyl)carbodiimide and 11.6 g (0.16 mol) of diethylamine at 55°C for 2 h. Then the liquid was filtered and subjected to fractional distillation. Yield 29.31 g (95%), bp 53°C (2 mm Hg), $n_D^{20}$ 1.4183 (published data [1]: bp 53°C (2 mm Hg), $n_D^{20}$ 1.4189).

## REFERENCES

1. Kirilina, N.I., Sheludyakov, V.D., Kirilin, A.D., and Mironov, V.F., *Dvuokis' ugleroda v khimii kremniiorganicheskikh soedinenii* (Carbon Dioxide in Organosilicon Compounds Chemistry), Moscow: NIITEKhim, 1980, p. 43.
2. Kirilin, A.D., Dokuchaev, A.A., Sokova, N.B., Patskevich, A.V., and Chernyshev, E.A., *Zh. Obshch. Khim*., 2000, vol. 70, no. 1, p. 51.
3. Sheludyakov, V.D., Kirilin, A.D., and Mironov, V.F., *Zh. Obshch. Khim*., 1975, vol. 45, no. 2, p. 479.
4. Kirilin, A.D., Dokuchaev, A.A., Menchaikina, I.N., Semenova, E.V., Sokova, N.B., and Chernyshev, E.A., *Izv. Akad. Nauk Ser. Khim*., 1999, no. 9, p. 2192.