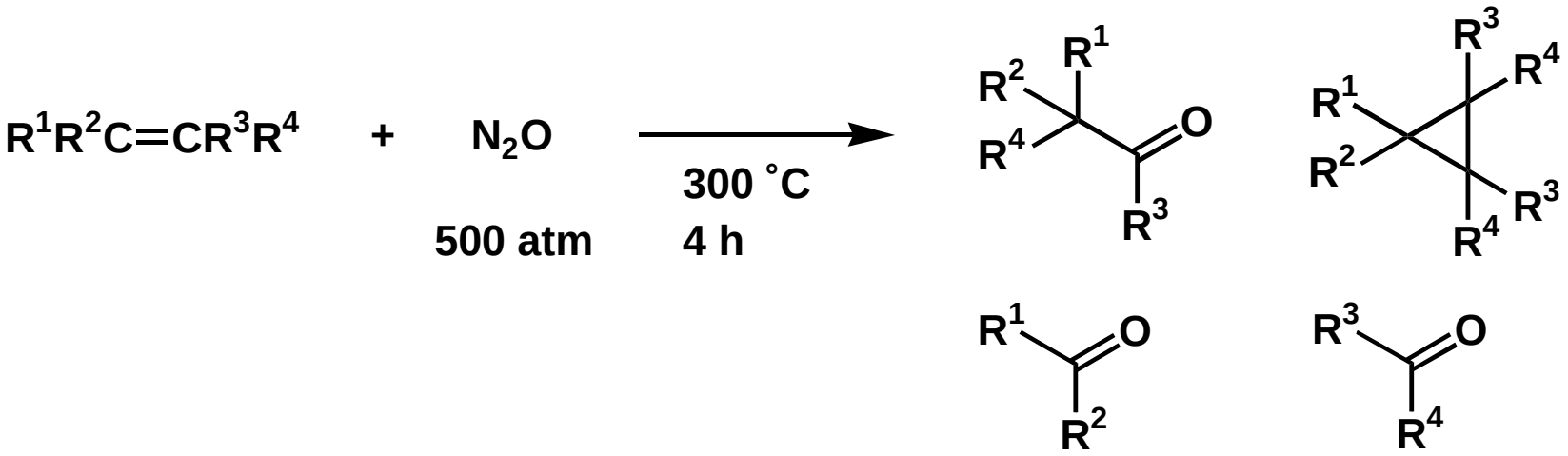
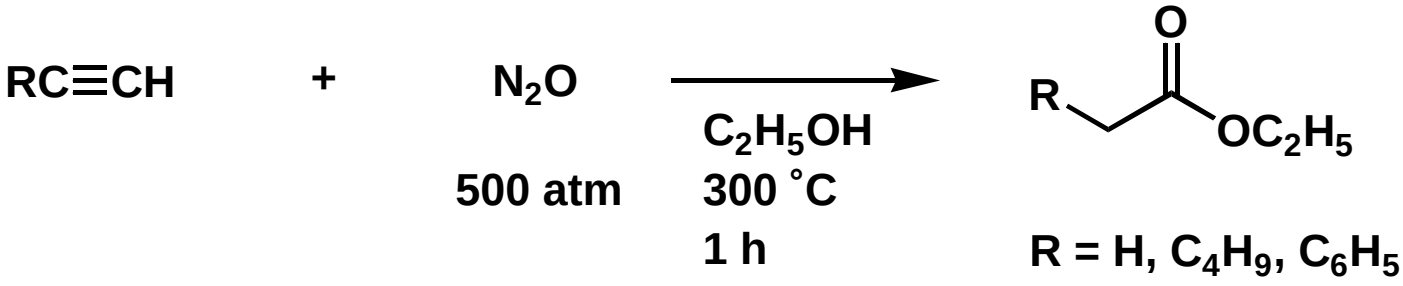
REACTION OF N_2O WITH ALKENE AND ALKYNE



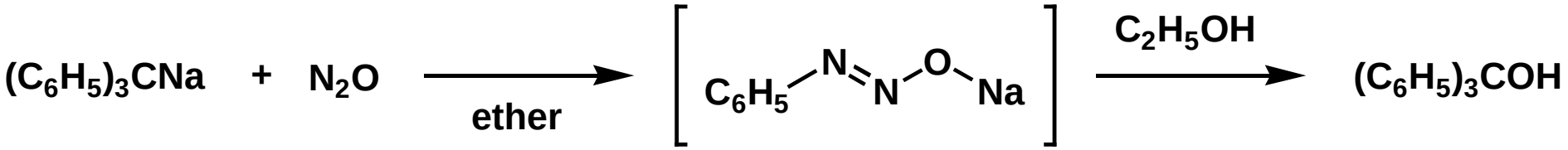
F. S. Bridson-Jones et al., *J. Chem. Soc.* **1951**, 2999.



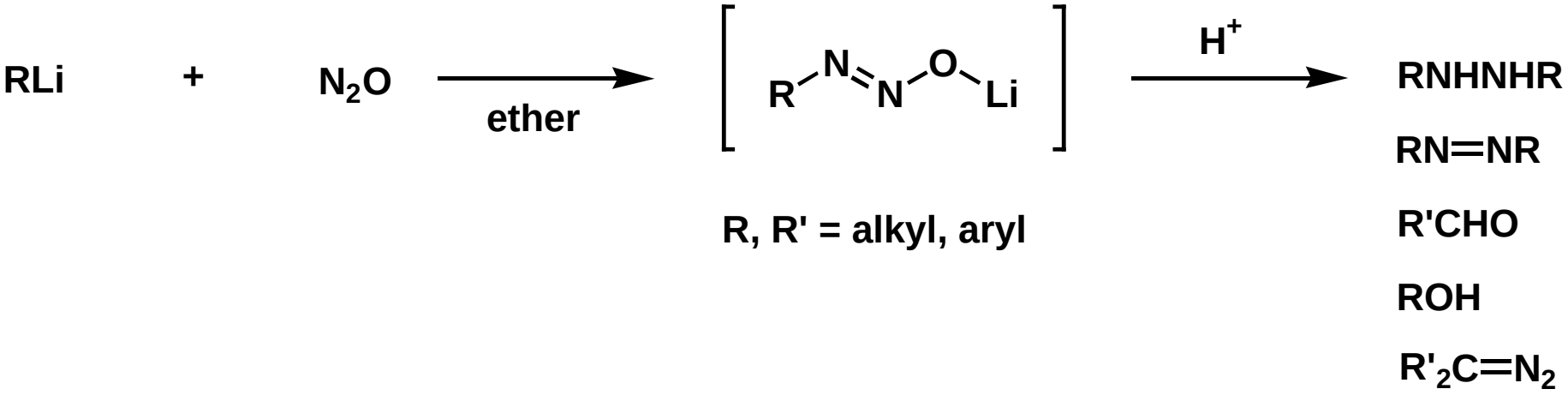
R = H, C_4H_9, C_6H_5

G. D. Buckley et al., *J. Chem. Soc.* **1951**, 3016.

REACTION OF N_2O WITH ORGANOMETALLIC COMPOUNDS

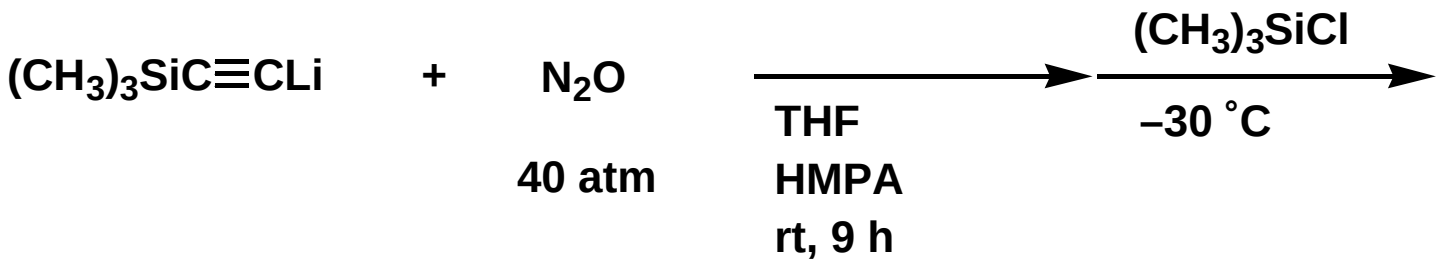


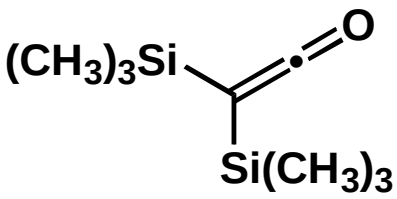
W. Schlenk et al., *Ann.* **1928**, *464,* 1.



F. M. Beringer et al., *J. Am. Chem. Soc.* **1953**, *75,* 3984.

REACTION OF LITHIUM ACETYLIDE WITH N_2O





1

+

$(CH_3)_3SiC{\equiv}CSi(CH_3)_3$

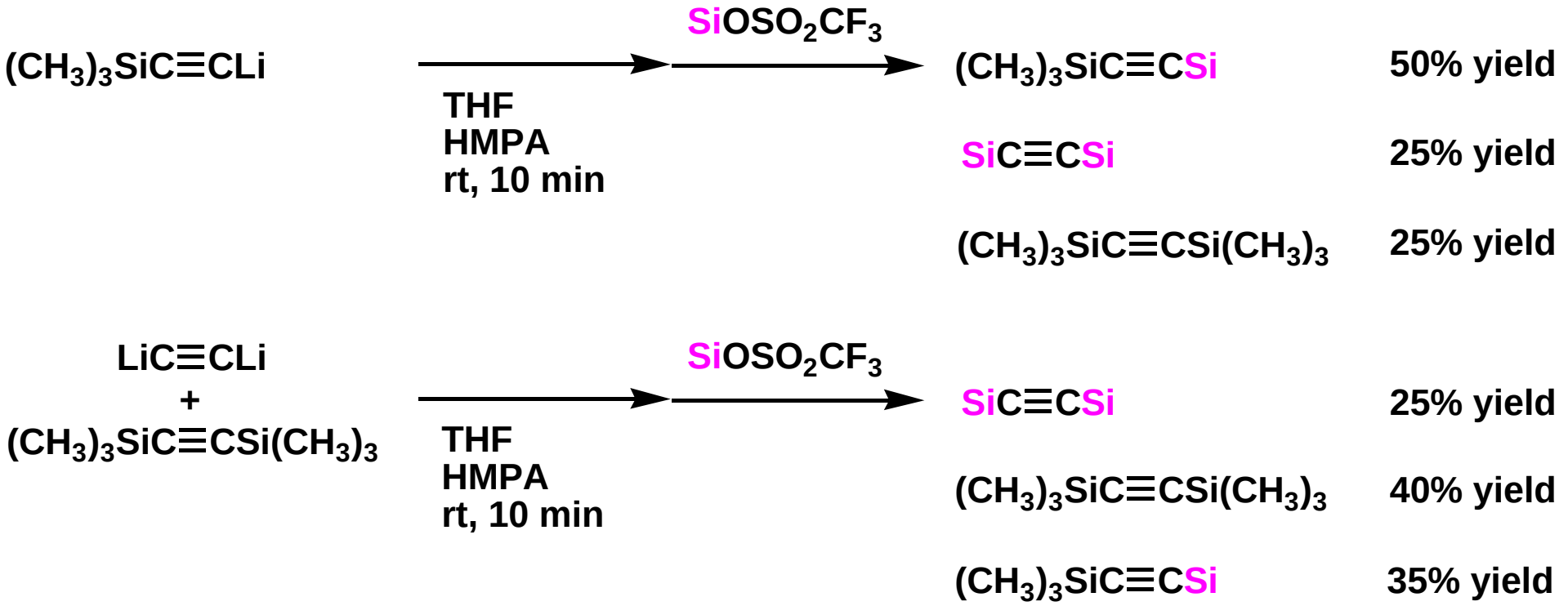
2

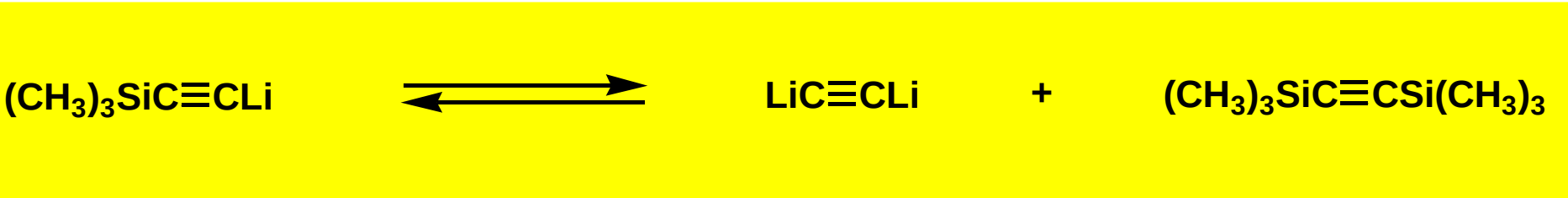
HMPA, equiv	yield, %[a] 1	2
none	5	50
1	21	42
2	30	42
3	47	35
4	45	45

HMPA = hexamethylphosphoramide

[a] Determined by ^1H NMR.

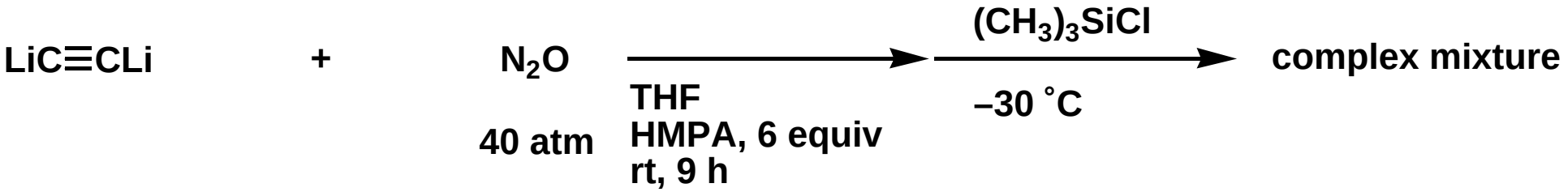
DISPROPORTIONATION OF MONOLITHIUM ACETYLIDE

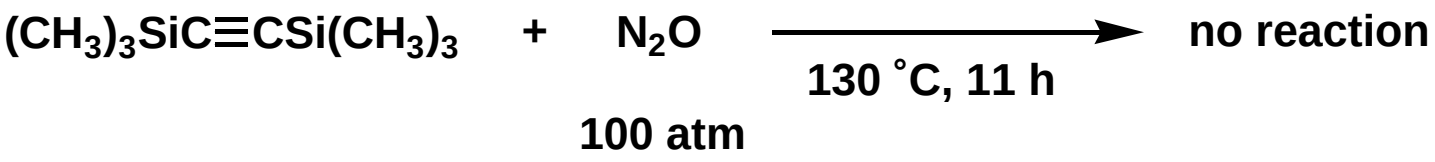


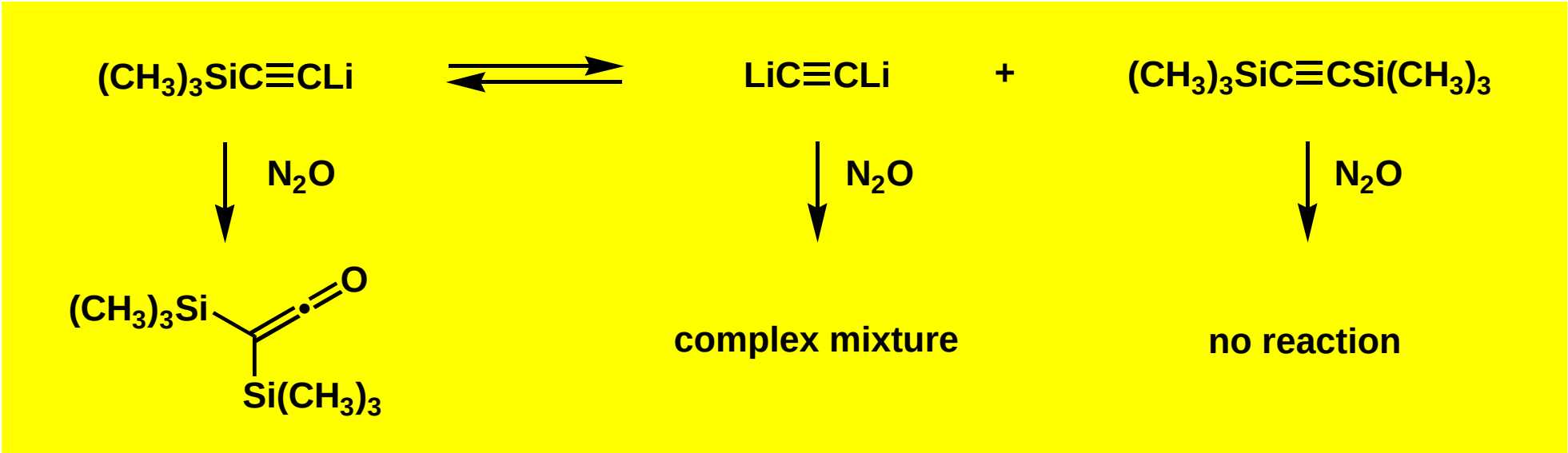


Si = (*t*-C_4H_9)$(CH_3)_2$Si. Yields are based on [Li].

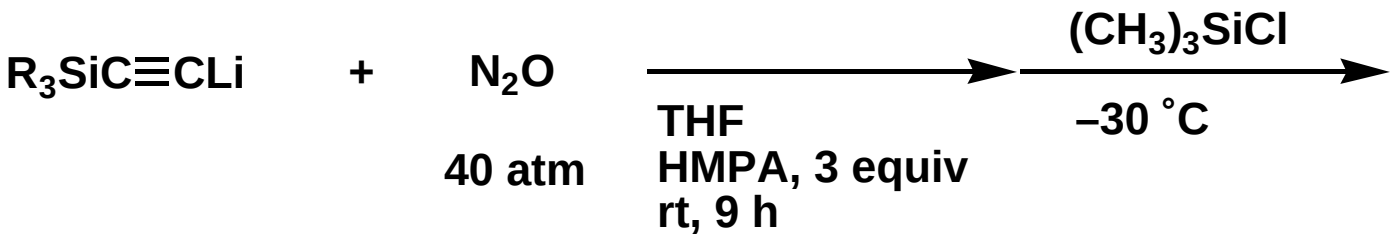
REACTIONS OF ACETYLENIC COMPOUNDS WITH N_2O

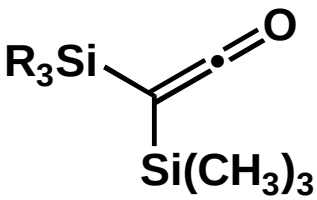






REACTION OF VARIOUS 1–LITHIO–2–SILYLACETYLENES





1

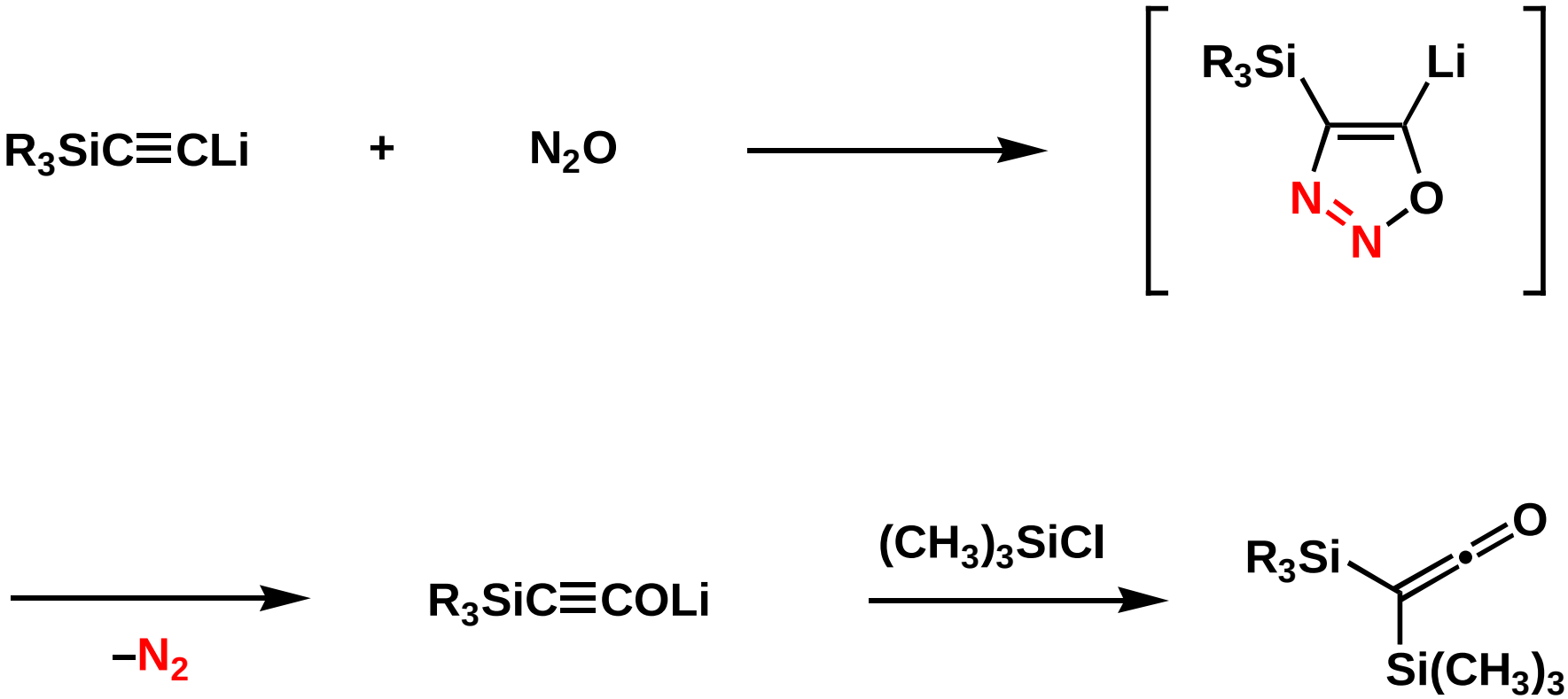
+ $R_3SiC{\equiv}CSiR_3$

2

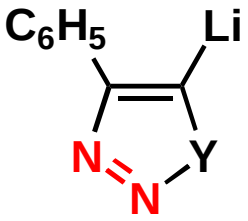
R_3Si	yield, %[a] 1	2
$(CH_3)_3Si$	47	35
$(t\text{-}C_4H_9)(CH_3)_2Si$	45	10
$(i\text{-}C_3H_7)_3Si$	47	23

[a] Determined by ^1H NMR.

A POSSIBLE MECHANISM



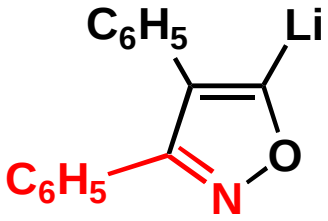
DECOMPOSITION OF LITHIATED 5–MEMBERED HETEROCYCLIC COMPOUNDS



$C_6H_5C{\equiv}CYLi$ + N_2

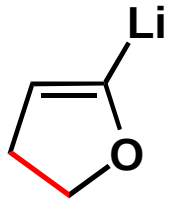
Y = NC_6H_5, S

M. R. Grimmett and B. Iddon, *J. Chem. Soc.* **1951**, 3016.



$C_6H_5C{\equiv}COLi$ + C_6H_5CN

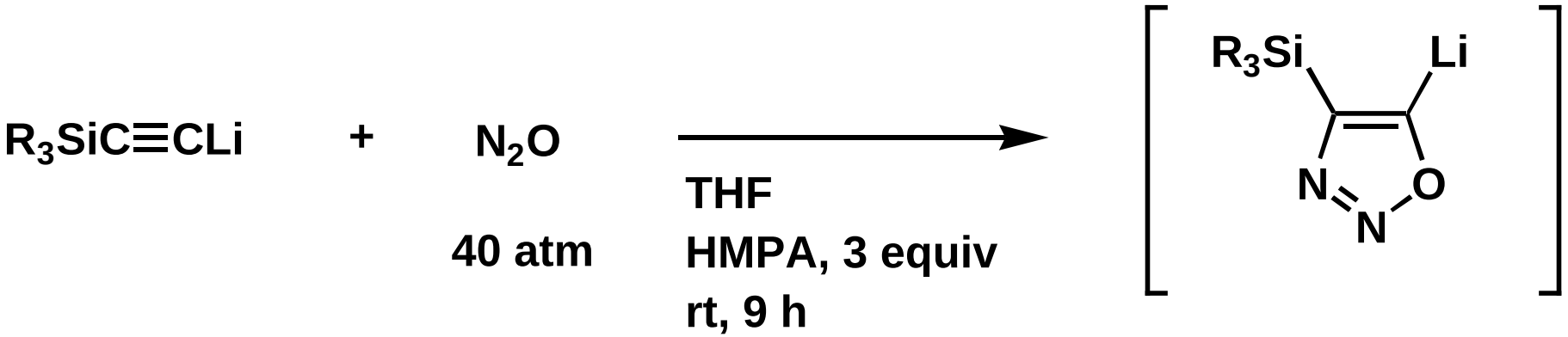
Hoppe. I, Schollkopf. U, *Justs Liebigs Ann. Chem.* **1979**, 219.

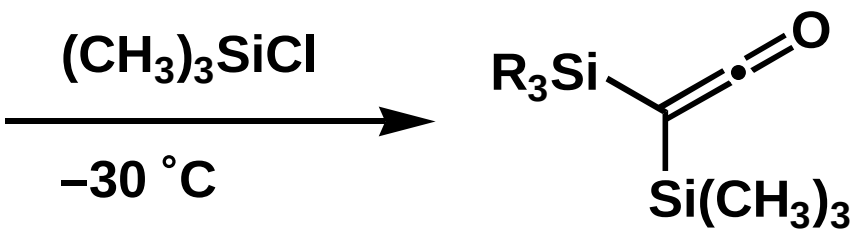


$HC{\equiv}COLi$ + C_2H_4

T. J. Barton et al., *J. Am. Chem. Soc.* **1987**, *109*, 7568.

SUMMARY





45–47% yield