

"Surface-Mediated Reactions. 3. Hydrohalogenation of Alkenes." Kropp, P. J.; Daus, K. A.; Tubergen, M. W.; Kepler, K. D.; Wilson, V. P.; Craig, S. L.; Baillargeon, M. M.; Breton, G. W. *Journal of the American Chemical Society* 1993, 115, 3071. (Read Abstract)

Abstract: Appropriately prepared silica gel and alumina have been found to mediate the addition of HCl, HBr, and HI to alkenes. The technique has been rendered even more convenient by the use of various organic and inorganic halides that undergo hydrolysis in the presence of silica gel or alumina to generate hydrogen halides in situ. Under these conditions alkenes such as cycloheptene (**1**), 1-octene (**7**), and 3,3-dimethyl-1-butene (**15**), which react with HCl only very slowly in solution, underwent rapid addition. 1-Octene (**7**) underwent ionic addition of HBr without competing radical addition. 1,2-Dimethylcyclohexane (**24**) afforded the syn addition product **25c**, which underwent equilibration with the thermodynamically more stable isomer **25t**. A mechanism for surface-mediated addition / elimination is proposed involving a stepwise transfer of H⁺ and X from or to the surface in syn fashion, as shown in Scheme II.