

Mechanism of Meerwein Arylation of Furan Derivatives

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Abstract—Catalytic arylation of furan-2-carbaldehyde with arenediazonium salts was studied. The yields of 5-arylfuran-2-carbaldehydes were found to depend on the solvent, catalyst, and anion in the arenediazonium salt. Redox catalysis and generation of aryl radicals are not sufficient conditions for the reaction to occur. The reaction is successful only under conditions ensuring formation of complex intermediates. A mechanism involving two $\text{Cu}^{2+} \leftrightarrow \text{Cu}^+$ catalytic series and generation of furan-2-carbaldehyde was proposed.

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