

THE FRIEDEL-CRAFTS REACTION OF 1-METHYL-2(1H)-PYRIDONE AND ITS DERIVATIVES

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The Friedel-Crafts reaction of 1-methyl-2(1H)-pyridone (I), 1-methyl-2(1H)-quinolone (II), and 2-methyl-1(2H)-isoquinolone (III) was carried out, and the main results are shown in the following table. The structures of the products were confirmed by spectral or chemical method.

Compound No.	Reagent	Catalyst	Temp. (°C)	Period (days)	Product (Yield %)
I ¹⁾	(MeCO) ₂ O	H ₂ SO ₄	140	4	IV(34.3)
I ¹⁾	(EtCO) ₂ O	H ₂ SO ₄	180	2	IV(66.4), V(2.5)
I ¹⁾	(C ₃ H ₇ CO) ₂ O	H ₂ SO ₄	180	2	IV(75.9), V(7.4)
I ²⁾	(C ₆ H ₅ CO) ₂ O	H ₂ SO ₄	180	5	IV(38.2), V(36.7), VI(2.7)
I ³⁾	C ₆ H ₅ COC1	AlCl ₃	180	2	IV(30.9), V(3.8), VI(12.4)
II ⁴⁾	MeCOC1	AlCl ₃	50	14	VII(37.5)
II ⁴⁾	EtCOC1	AlCl ₃	80	14	VII(6.5), VIII(25.8)
II ²⁾	(EtCO) ₂ O	H ₂ SO ₄	180	3	VII(16.1)
II ³⁾	C ₆ H ₅ COC1	AlCl ₃	120	2	VII(28.3), VIII(2.3)
III ²⁾	(MeCO) ₂ O	H ₂ SO ₄	140	1/24	IX(75.6), (72) ⁶⁾
III ⁵⁾	MeCOC1	AlCl ₃	50	2	IX(40.4), X(6.9)
III ²⁾	(EtCO) ₂ O	AlCl ₃	180	3	IX(58)
III ²⁾	(C ₆ H ₅ CO) ₂ O	H ₂ SO ₄	120	5	IX(96.4)
III ³⁾	C ₆ H ₅ COC1	AlCl ₃	120	7	IX(21.6), XI(19.5)

IV: 5-acylated I, V: 3,5-diacylated I, VI: 3-acylated I, VII: 6-acylated II, VIII: 3-acylated II, IX: 4-acylated III, X: 7-acylated III, XI: 5-acylated III

References

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