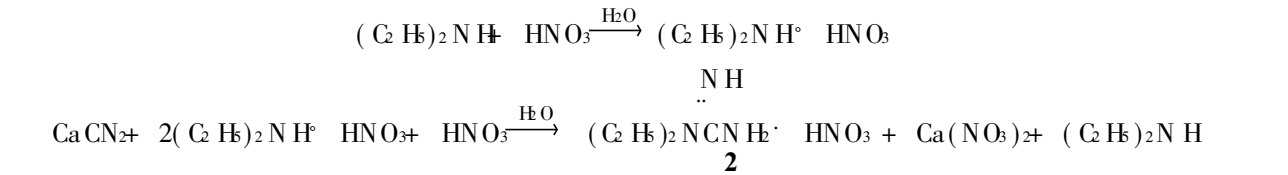


利用率的角度出发,取优水平为 $m(\text{EtNH}):m(\text{HNO}_3):m(\text{CaCN}_2)=2:3:1$,反应温度为回

流温度,反应时间为 8 h,在此条件下,产率可稳定在 90% 以上.



事实上,化合物 **2**的制备分两步进行,是由先生成的二乙胺硝酸盐与 CaCN_2 反应而成,反应过程中生成的二乙胺起维持回流温度,调节 pH 值和溶剂的作用,最后可回收;而且从反应式可知 $m(\text{EtNH}):m(\text{HNO}_3):m(\text{CaCN}_2)=2:3:1$,原料的利用率最高.

BTEA对钠盐在有机溶剂中作用是一个极好的相转移催化剂,由表 1可知,使用 BTEA后的产率比未使用时高;相对而言,THF比 EtOH更适合于此反应.所以,最佳的合成条件为,反应时间 4 h,反应温度为回流温度,溶剂为 THF,添加

BTEA,这样产率可稳定在 90% 以上.但由于 EtOH比 THF易得,为降低成本,在收率相差不大的情况下,溶剂选择 EtOH更适合于工业生产.

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表 1 反应条件对收率的影响

Tab. 1 Effect of reaction condition on the yield of product

<i>t</i> / $^{\circ}\text{C}$	Time /h	Solv ent	BTEA	Yield %
20~ 30	6	EtO H	—	70. 8
reflux	4	EtO H	—	80. 9
20~ 30	6	EtO H	+	84. 2
reflux	4	EtO H	+	93. 9
20~ 30	6	THF	—	76. 5
reflux	4	THF	—	81. 2
20~ 30	6	THF	+	88. 3
reflux	4	THF	+	94. 6

+ : with addition of BTEA; — : without BTEA.

Synthesis of 2-Diethylamino-4-hydroxy-6-methylpyrimidine

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Abstract The title compound **3** was synthesized from diethylguanidine nitrate (**2**) obtained from diethylamine, CaCN_2 and HNO_3 . The mixture consisted of 0. 5 mol **2**, 0. 55 mol acetonyl propionate, 3 g benzyltriethylammonium chloride, and 44 g NaOH was refluxed for 4 hours to give 85 g **3**, in yield 94. 6% .

Keywords diethyl amino-4-hydroxy-6-methylpyrimidine, diethylguanidine nitrate, BTEA, synthesis