

Área: ORG

Oxazolone synthesis using different solid catalysts and conventional heating

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Highlights

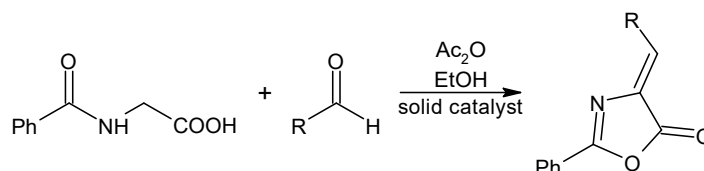
Heterocyclic chemistry

Plöchl-Erlenmeyer like synthesis

Heterogeneous catalysis

Resumo/Abstract

Oxazolones are heterocyclic compounds synthesized via the Plöchl–Erlenmeyer methodology, which involves heating a mixture of hippuric acid, an aromatic aldehyde (predominantly), acetic anhydride serving as the dehydrating agent, and anhydrous sodium acetate as a mild base. The objective of this study is to explore alternative solid compounds, such as salts or oxides, that may function as catalysts for these reactions (Figure 1).



We selected a model reaction to evaluate all catalysts under identical conditions of time and temperature. The aldehyde employed in these experiments was 4-methoxybenzaldehyde. Table 1 summarizes the yields obtained with different catalysts. As observed, MgO afforded the highest yield (73%), whereas K₂CO₃ resulted in no product formation (0%).

Table 1 – Results obtained in the oxazolone synthesis depending on the catalyst

Catalyst	Yield (%)	Catalyst	Yield (%)
ZnO	65	K ₂ CO ₃	0
TiO ₂	15	MgO	73
ZnO-Bi	25	Bi ₂ O ₃	43

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