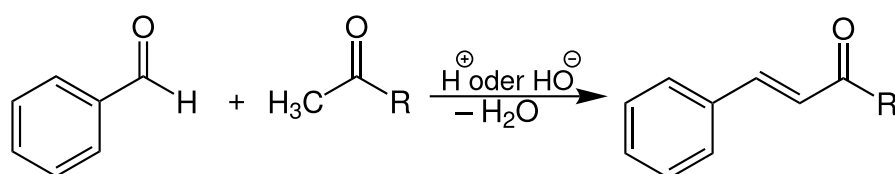


Claisen-Schmidt Condensation of Aldehydes and Ketones in NaOH



Keywords

Claisen-Schmidt Condensation, Synthesis, Aldol Condensation

Summary

Claisen-Schmidt reaction at 25 ° C isothermal under magnetic stirring (700 rpm) in aqueous solution for 24 and 48 hours.



Equipment

ITEM	DESCRIPTION
8053 000 100	Xelsius basic unit
8053 000 201	Reflux condenser module
8053 000 202	Reaction vials starter kit - 30 ml
8053 000 031	Magnetic stirrer bars

Reagents

REAGENTS	
2 mmol	Aldehyde, e.g. Benzaldehyde – 98%, CAS: 100-52-7
2,5 mmol	Ketone, e.g. Acetophenone – 99%, CAS: 98-86-2
20 ml	NaOH - 2N, CAS: 1310-73-2

Procedure

Claisen-Schmidt reaction at 25 ° C under magnetic stirring (700 rpm) in solution in aqueous solution for 24 and 48 hours.

Add 2.5 mmol of Ketones provides as liquid and 2.0 mml of Aldehydes in reaction vessel.

Add 10 ml of NaOH (2N). Extraction of the product were performed via liquid extraction with CH₂Cl₂.

Notes

Best results (quantitative conversion) achieved in 24h.

References:

L. Claisen und A. Claparède: Condensationen von Ketonen mit Aldehyden In: Ber. Dtsch. Chem. Ges. 14, 1881, S. 2460–2468, doi:10.1002/cber.188101402192.

J. Gustav Schmidt: Ueber die Einwirkung von Aceton auf Furfurol und auf Bittermandelöl bei Gegenwart von Alkalilauge In: Ber. Dtsch. Chem. Ges. 14, 1881, S. 1459–1461, doi:10.1002/cber.188101401306.

Reaction quotation page1: Source: https://commons.wikimedia.org/wiki/File:Claisen-Schmidt_Kondensation_%C3%9Cbersichtsreaktion.svg; Author: GUS88, License: <https://creativecommons.org/licenses/by-sa/4.0/deed.en>

Data provided by: nevoLAB GmbH in cooperation with LabTech Srl, IT www.labtechsrl.com

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With knowledgeable scientists and experienced engineers, our R&D team has developed and released a series of new lab equipment and instruments dedicated to modern chemical labs laboratories.

The Xelsius System

A compact and fast reactor with 10 completely individually tempered and stirred reactor cells in the temperature range from -20°C to $+150^{\circ}\text{C}$.

The space-saving device for parallel synthesis, reaction and process optimization, as well as for DoE (Design of Experiment) studies. Replacement for ten heating cells, magnetic stirrers, ice baths, reactor cells and reflux condensers in only one device.

Save valuable space in the fume cupboard with clever and flexible solutions for operating and setting up the reactor.

Reaction Notes

Organic laboratories perform many different procedures during studies and research. Thanks to its flexibility, Xelsius system can cover all the daily needs of an organic laboratory in an efficient and multitasking way, boosting results by 10 times.

To guide you and help you during the lab implementation of Xelsius system, we created "Reaction Notes" as a simple and user-friendly collection of data and steps for the most common procedures in organic chemistry. Enjoy!

