Unusual reactivity of DMAD (Dimethyl Acetylenedicarboxylate) with N-alkyl-9-anthracenemethanamine

Tomson Devassia , Sreedharan Prathapan ,
Perupparampil A. Unnikrishnan

PII: S2405-8300(18)30107-1
DOI: 10.1016/j.cdc.2018.07.004
Reference: CDC 125

To appear in: *Chemical Data Collections*

Received date: 22 May 2018
Revised date: 5 July 2018
Accepted date: 13 July 2018

Please cite this article as: Tomson Devassia , Sreedharan Prathapan , Perupparampil A. Unnikrishnan , Unusual reactivity of DMAD (Dimethyl Acetylenedicarboxylate) with N-alkyl-9-anthracenemethanamine, *Chemical Data Collections* (2018), doi: 10.1016/j.cdc.2018.07.004

Title: Unusual reactivity of DMAD (Dimethyl Acetylenedicarboxylate) with *N*-alkyl-9-anthracenemethanamine

Authors: ***Tomson Devassia, Sreedharan Prathapan, Perupparampil A. Unnikrishnan***[*]

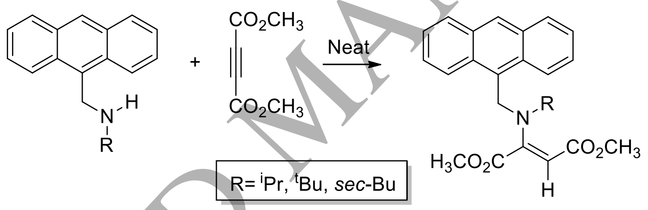
Affiliations: Department of Applied Chemistry, Cochin University of Science and Technology, Kochi-682 022, Kerala, India.

Contact email: paunni@gmail.com

Abstract

This communication deals with the synthesis and characterization of a few N-alkyl-9-anthracenemethanamines and their reaction with dimethyl acetylenedicarboxylate (DMAD). Irrespective of reaction conditions, the corresponding dimethyl 2-((anthracen-9-ylmethyl)-amino)fumarates arising through a Michael-type addition reaction were exclusively formed in the reaction between these secondary amines and DMAD.

Graphical abstract



Keywords: Anthracenemethanamine, Diels-Alder reaction, DMAD, Michael addition.

Specifications Table

Subject area	*Organic Chemistry, Spectroscopy.*
Compounds	*Anthracene-9-yl-methanamines*
Data category	*Spectral, synthesized.*
Data acquisition format	*^{1}H NMR, ^{13}C NMR, IR, Mass spectra, m.p.*
Data type	*Process and analysis.*
Procedure	*Attempted Diels-Alder reaction of anthracenemethanamines with DMAD, resulted in 1,4 Michael adducts.*
Data accessibility	*Data is provided with this article*

1. Rationale

Dimethyl acetylenedicarboxylate abbreviated as DMAD (**1**) is well known for its high reactivity towards cycloadditions, Michael type addition and single electron transfer reactions [1-12]. Anthracenemethanamines such as **2**, on the other hand, are potential dienes, Michael donors and single electron donors. Reaction between such complementary pair of substrates is of considerable interest (Chart 1).