

"Further Studies of the Thermal and Photochemical Diels-Alder Reactions of *N*-Methyl-1,2,4-triazoline-3,5-dione (MeTAD) with Naphthalene and Some Substituted Naphthalenes." Breton, G. W.; Newton, K. A. *Journal of Organic Chemistry*, 2000, 65, 2863-2869.

Abstract: MeTAD thermally reacted with naphthalene (**2**) and methylated naphthalenes to give equilibrium mixtures of starting materials and [4 + 2] cycloadducts. Methyl substitution on the naphthalene ring generally increased both the amount of cycloadduct formed and the rate of cycloaddition relative to **2**. The isolated cycloadducts were all thermally labile and quantitatively reverted to the parent naphthalene in the presence of 2,3-dimethyl-2-butene as a trap for liberated MeTAD. The rates of the cycloreversion reactions were affected by substitution patterns but not appreciably by solvent. A mechanism for the cycloaddition reaction is presented that proposes the involvement of a charge-transfer complex. Photochemically, MeTAD demonstrated lower regioselectivity in its reactions with substituted naphthalenes relative to the corresponding thermal reactions.