

PHOTOLYTIC DECOMPOSITION OF BENTAZONE BY THE USE OF POLYOXOMETALLATES

E. GKIKA^{1,3}, **D. TSIPI**², **E. DASENAKIS**³, **E. PAPACONSTANTINO**¹,
A. HISKIA^{1*}

¹Institute of Physical Chemistry, NCSR Demokritos, 153-10, Athens, Greece

²General Chemical State Laboratory, 16, An. Tsoha, 115-21, Athens, Greece

³Department of Chemistry, National and Capodistrian University of Athens,
University Campus, 157-71, Greece

ABSTRACT

The herbicide bentazone (3-isopropyl-1 H-2,1,3-benzothiadiazin-4-3H-one 2,2 dioxide) undergoes mineralization upon photolysis with near visible and UV light in the presence of TiO₂ or polyoxometallates (H₃PW₁₂O₄₀ and K₄SiW₁₂O₄₀). The final products, for both methods have been CO₂, H₂O, NO₃⁻ and SO₄²⁻. Several intermediates (2-amino N-isopropyl benzamide, N-methyl bentazone, 6-OH bentazone, 8-OH bentazone, 4-(1,1,3,3-tetramethylbutyl) phenol and acetic acid) have been identified by HPLC and GC-MS when TiO₂ was used.

* Corresponding author