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Author: Mandeep Kumar Gupta Atul K. Mittal



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# ACCEPTED MANUSCRIPT

### Elsevier Editorial System for Journal of Hazardous Materials Manuscript Draft

Title: Integrated biological and advanced oxidation based treatment of Hexamine bearing wastewater: effect of cow-dung as a co-substrate

<sup>a</sup>Department of Civil Engineering, Indian Institute of Technology Delhi, New Delhi, India

#### Article Type: Research Paper

**Corresponding Author:** Dr. Atul K. Mittal, Ph.D. Phone: +91-11-26581239, Fax: +91-11-26581117, email: akmittal@civil.iitd.ac.in

Corresponding Author's Institution: Indian Institute of Technology Delhi

First Author: Mandeep Kumar Gupta

Order of Authors: Mandeep Kumar Gupta; Atul K Mittal, Ph.D.

#### Highlights

- Treatment by biological process and Fenton's reagent
- Cow dung as co-substrate
- Hydrolysis of wastewater improved treatment

**ABSTRACT**: This work examines the treatment of hexamethylenetetramine (HMT) bearing effluent from N, N-Dinitroso Pentamethylene Tetra-mine producing industrial plants in India. Chemical treatment using Fenton's reagent and aerobic treatment using batch reactors with co-substrate were investigated. Aerobic batch reactors integrated with advanced oxidation process of Fenton's reagent provides effective treatment of HMT effluents. Influence of Fenton's reagent dose reaction/ contact and effect of varying co-substrate with effluent initial concentration was observed. Higher dose 100mL of Fenton's reagent with higher reaction time 20h resulted better degradation (34.88%) of wastewater. HMT hydrolyzes in acidic environment to ammonia and formaldehyde. Formaldehyde under normal conditions is toxic

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