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I. INTRODUCTION

Toluene is a commonly used organic solvent and important raw material for a variety of chemicals, mainly obtained by catalytic reforming of petroleum or extraction from pyrolysis gasoline. However, the toxicity and physicochemical properties of toluene have made its discharge processes a matter of concern.

Specifically, the toxicity level of toluene is classified as low. Exposure to toluene for a short time can irritate the eyes and upper respiratory tract, along with headache and dizziness. The long-term exposure can lead to a weakened nervous system, with an impact on organs such as the liver, kidney, and heart as well as circulatory and nervous

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Heavy metal contamination has been a problem to the environment, posing a great threat to the health of animals and humans [1]. In China, about 20% of arable land has been contaminated with heavy metals, among which, cadmium has even a higher level than others [2]. Cadmium contamination originates from two different sources. First, Cd can be found from a natural source, such as sedimentary rocks [3]. Second, various

Shandong Key Laboratory of Greenhouse Vegetable Biology, Shan-Lin Branch of National Initiative of the Center for Vegetables, Huang-Huai-Hai Region Research, Breeding and Experiment Station of Vegetables, Ministry of Agriculture and Rural Affairs, Institute of Vegetables and Potato, Shandong Academy of Agricultural Sciences, Jinan, Shandong, 250001, China

National Engineering Laboratory for Efficient Utilization of Soil and Fertilizer Resources, College of Resources and Environment, Shandong Agricultural University, Tai'an, Shandong 271018, China, corresponding author X. Li, email: xli@sdau.edu.cn