



## Application of extraction and adsorption to the alkyprazine removal from wastewater

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Received 19 August 2013; Accepted 18 December 2013

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### ABSTRACT

Application of extraction and adsorption process to the alkyprazine removal from wastewater was investigated. The detailed extraction process was studied. It was found that the alkyprazine content in the water phase after extraction was decreased to 0.3% or less from about 3.0% (wt.). Extractant was recovered by concentrating the water phase and then the wastewater generated from concentration process was disposed by adsorption treatment in order to further lower the level of alkyprazine in wastewater. Adsorption of simulated wastewater containing 2,3-dimethylpyrazine on the different resins was also investigated. Among the resins of various grades used, the XDA-200 had the best properties in decontamination of aqueous 2,3-dimethylpyrazine solutions. The chemical oxygen demand (COD) of authentic wastewater generated from extraction process after adsorption treatment with XDA-200 was less than 1,000 mg/L and its removal percentage was above 90%. It was shown that regeneration of the adsorbent bed could be effectively performed with ethanol. Based on the extraction and adsorption experimental results, more than 98% of COD in the wastewater was removed.

*Keywords:* Alkyprazine; Wastewater treatment; Extraction; Adsorption

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