

**DETERMINATION OF CRITICAL MICELLE CONCENTRATION
(CMC) OF NEWLY N-BASED SURFACTANT FOR FROTH
FLOTATION**

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ABSTRACT

DETERMINATION OF CRITICAL MICELLE CONCENTRATION (CMC) OF NEWLY N-BASED SURFACTANT USING FLOTATION

This study investigates the critical micelle concentration (CMC) and mineral separation flotation performance of a newly developed N-based surfactant. The structure of the new N-based surfactant was characterized by Fourier Transform Infrared (FTIR). The peak for C=N peak was present at 1629.92 cm^{-1} , N-H peak was present at 3293.82 cm^{-1} and benzene ring was present at 143.98 cm^{-1} in the FTIR spectrum. A variety of surfactant concentrations is used to determine the CMC. The N-based surfactant's CMC value is 0.25mM, which provides light on its surface-active characteristics and makes it easier to optimize for certain uses. Using synthetic mineral mixtures, the flotation performance is evaluated to determine the impact of various parameters on selectivity and recovery. Herein, a newly N-based surfactant is synthesized for separation of lawrencite, chalcantite and calcite. N-based surfactant molecules could only interact with Ca^{2+} and Cu^{2+} .