AMINO ACIDS AS CORROSION INHIBITOR OF CARBON STEEL

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ABSTRACT

Corrosion to the metals as a result interacting with its corrosive environmental, like high humidity induced by O_2 or CO_2 gas. Corrosion prevented by means methods, instant of inhibitor added. In this time, Inhibitor materials is developed is organic materials that contained nitrogen or sulfur atoms. Ability of corrosion inhibition of organic materials connected to properties of nitrogen atom as electron donor (Lewis base), and it inhibition efficiencies connected to its molecular structure. The amino acids have amino group, it be capable as inhibitor corrosion at carbon steel. In addition, amino acids differ from one another in the nature of R group; probable can increase ability as corrosion inhibitor or vice versa. Make use of electrochemical polarization method, especially Tafel plot, ability of corrosion inhibition of amino acids can measured quickly and accurately. The results showed that cysteine have been ability to high from one another (glycine, alanine, phenylalanine, threonine, proline, and tryptophan) in NaCl 1% medium induced by either atmosphere or CO_2 gas. It inhibition efficiency at 100 ppm composition are 49% on atmosphere induced and 74% on CO_2 induced.

Keywords: amino acids, corrosion inhibitor, carbon steel, Tafel plot, electrochemical polarization.