

Phthalamic Acid

Alkylammonium salts of phthalamic acid, the monoamide of phthalic acid, are used as corrosion inhibitors in metal finishing baths. The concentration of the inhibitor in the bath is crucial for the success of the process. Owing to the complexity of the chemical composition of metal finishing fluids, monitoring the phthalamic acid level by most analytical procedures is an arduous task.

HPLC analysis, on the other hand, is quite straightforward. In Figure 1, the reversed phase separation of a phthalamic acid standard is shown. Elution was effected under isocratic conditions with the UV detection at 230 nm, using a 5 cm analytical column enabling rapid analysis. Phthalamic acid levels in freshly constituted and inhibitor depleted bath samples were determined from the chromatograms displayed in Figures 2 and 3, respectively.

Keywords:

Corrosion inhibitors, metal finishing, phthalamic acid

Conditions

Column: Spherisorb S5 ODS2, 50 mm x 4.6 mm ID
Mobile Phase: 0.1% Aqueous phosphoric acid:methanol (80:20)
Flow Rate: 1 ml/min
Detection: UV at 230 nm

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1 = Phthalamic Acid

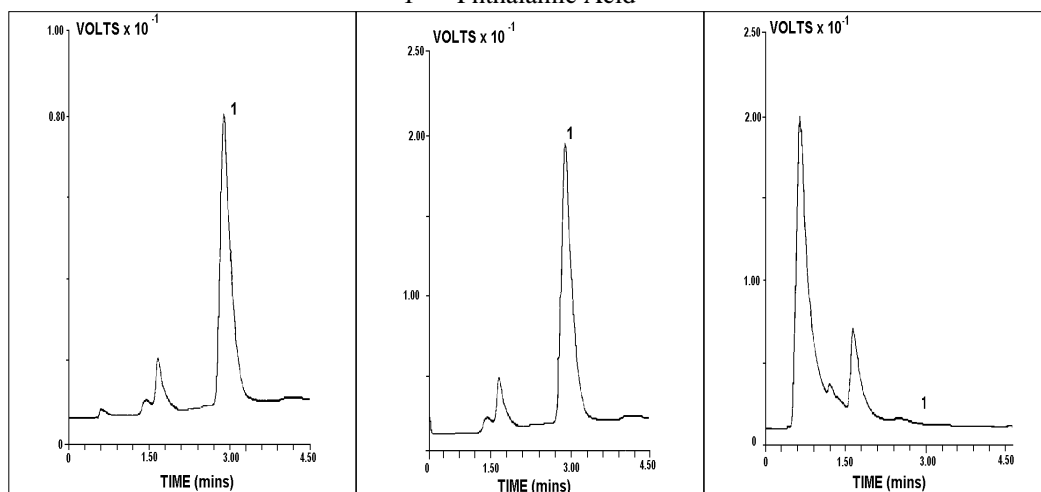


Figure 1 Phthalamic Acid Standard

Figure 2 Fresh bath

Figure 3 Depleted bath



GBC HPLC Instrumentation

LC1110 Dual Piston HPLC Pump

LC1650 Advanced Autosampler

LC1200 Variable Wavelength UV/Vis

Detector

WinChrom Chromatography Data

Management System

LC1445 System Organiser

