

**Comparison among the best and widely compounds used to copper artefacts protect at atmospheric environment**

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**Abstract.**

The main objective of this subject was a comparative study of inhibition and protective properties among the best and common compounds used to Copper artefacts protect in atmospheric environment. Compounds were five of the best corrosion inhibitors: L-Methionine (Met.), L-Cystine (Cys.), Benzotriazole (BTA), 3-amino-1, 2, 4-triazole (ATA) and Sodium decanoate (NaC<sub>10</sub>) as well as two protective coatings were microcrystalline (Mic) and paraffin (Par) wax. Study carried out by electrochemical techniques including (Pt and EIS), microscopic Examination and accelerated aging in climate chamber.

Electrochemical techniques showed that BTA, NaC<sub>10</sub>, Met., ATA were the best compounds. The effectiveness of the selected compounds in potentiodynamic polarization were rated BTA > NaC<sub>10</sub> > Met. > ATA, while In (EIS) was rated Met. > BTA > NaC<sub>10</sub> > ATA. While Cys., Par. and Mic. were recorded less protection. Microscopic examination and climate chamber test were confirmed the results of electrochemical tests, the results from the different methods were in good agreement.