

Characterization and application of essential oil of *Artemisia herba-alba* as Green Corrosion Inhibitor for Aluminium in Hydrochloric Acid Solution.

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Several methods are available to prevent or retard corrosion of metallic materials, the use of inhibitors is one of the best technique to ensure their protection in contact with aggressive media such as hydrochloric acid medium. Essential oil and plant extracts have become a source of inhibitors, ecological guarantee high efficiency at a cheaper price. These types of inhibitors do not contain heavy metals or toxic compounds and they are biodegradable

The essential oil of the aerial parts of *Artemisia herba alba* growing wild in high table-lands of Algeria: Boussâada (BOU, 245Km south-eastern of Algiers), has been conducted by hydrodistillation. The chemical composition was investigated by capillary GC and GC/MS in combination with retention indices. The main components of *Artemisia herba alba* were chrysanthenone (24.08%) followed by camphor (16.16%) and α -thujone (12.82%). *Artemisia herba alba* essential oil was tested as corrosion inhibitor of pur aluminium in HCl (1mol/l) medium by electrochemical measurements (temporal variation of abandonment potential, Potentiodynamic polarization, electrochemical impedance spectroscopy) and Gravimetric measurements. The obtained results showed that inhibition efficiency increases with increasing inhibitor concentration to attain 95 % for an optimum concentration of 0.8 g/L. So the *Artemisia herba alba* oil acts as cathodic-type inhibitor

References:

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