

Editorial Comments:

In the first few cycles of review, the reviewers concerned about similar publication in *Revue Roumaine de Chimie* by the authors.

The authors have declared that the polymer prepared (PASAC1, 11, 13 vs PASAC 10, 12) is different, however, not much details are given (due to patent issue?). This gives difficulty for the reviewers (and perhaps, in future, for the readers) to really understand the subject.

The authors make the following revision:

[1]. Give more information about PASAC1, 11 and 13 (that might not affecting the patent issue).

[2]. In Abstract, the abbreviation of PASAC1, PASAC 11 and PASAC13 should be briefly mentioned. For example, three types of organic inhibitors obtained by radicalic polymerization, i.e., PASAC1 (maleic anhydride and urea...), PASAC 11 (polyaspartic acid and H_3PO_4 ...), PASAC13 (polyaspartic acid 0.07M and H_3PO_4 ...) was selected.

[3]. The following sentence should be rephrased.

[a]. In page 1, "Because they usually affect the whole metal surface, when they are presenting sufficient concentration, they can not be called anodic or cathodic inhibitors".

[b]. In page 1-2, "Therefore, a systematic study of adsorption processes of organic inhibitors, effective in protection enhancement, contributes to a better understanding and ultimately control of corrosion".

[c]. In page 3, "Therefore, the corrosion mechanism and corrosion prevention of brass in different corrosive media has been attracted many investigators".

[d]. In page 3, "The studied material was the brass".

[e]. In page 3, "...which were obtained by radicalic polymerization in presence of microwave field from...". Incomplete sentence?

[f]. In page 4, "The working electrode was brass in the form cylindrical with an exposed area of 0.5 cm^2 . This shape is preferred, because it assures a greater surface and a reduce number of edges".

[g]. In page 4, "...degreased in benzene at boiling temperature in order to remove all traced of fat". Fat? Clarify.

[h]. In page 4, "as, it is well known; less active metals are less accessible and more expensive in comparison with ordinary metals, which are too much exposed to corrosion process to be used".

[i]. In page 10, "Moreover, we shall try to show what kind type of adsorption process takes place on the electrode surface".

[j]. In page 11, "Mechanism of inhibition - From the results obtained, it was concluded that all the organic inhibitors (PASAC 1, 11 and 13) inhibit the corrosion of brass in cooling water systems by adsorption at brass/cooling water interface".

[k]. In page 11, "by EIS was investigated the corrosion behavior of brass in cooling water system..."

[4]. In page 3, see sentence "Many techniques are used to improve the corrosion resistance of the brass used as mechanical parts in industry". What are the techniques? Please mention briefly.

[5]. In page 3, see sentence "The EIS experiments were performed at open circuit potential disturbed with amplitude of 10mV ac sine wave and over a frequency range of 100 kHz to 40 mHz". Details of electrochemical impedance spectroscopy (EIS) should be given, i.e., brand name, country etc.

[6]. In Table 1, check terminology "calciu Hardness".

[7]. In page 4, see sentence "Surface analysis on the brass electrode of the formed adsorbed film was analyzed by both FT-IR (FT-IR spectrometer Bruker optik) and metallographic micrographies (Hund H660)". Details of FTIR and metallurgical microscope should be given, i.e., brand name, country etc.

[8]. In page 5, see sentence "The addition of PASAC 13, PASAC 11 and PASAC 1 decreases the i_{corr} values significantly...". The full name of i_{corr} should be given.

[9]. In page 7, see sentence "the Tafel relationship are followed...". What is Tafel relationship? Please briefly discuss and add relevant reference citation.

[10]. In page 10, Figure 5, label Figure 5a, 5b, 5c accordingly. Revise the figure caption. Suggestion: Figure 5 Langmuir plot for (a) PASAC 11, (b) PASAC 13 and (c) PASAC 1 on brass in S1 at different inhibitor concentrations.

[11]. In page 10, see sentence "In this paper, the Langmuir isotherm is plotted against c...". What is C? Full name of C should be given.

[12]. In page 14, see sentence "The Cdl values decreases once with the increasing of the inhibitor concentration...". What is Cdl? Full name of Cdl should be given.

[13]. In page 15, see sentence "The presence of C-N and C-O is indicated by their starching modes at 1100 and 900 cm^{-1} ". What is starching mode?

[14]. In page 18, Figure 14, the labeling should be revised. Use g, h, i and j to replace c', d', e' and f'. Also, scale bar should be added on the micrograph, not just mention that 200x and 400x.

[15]. In Conclusions, see sentence "The inhibition efficiency follows the order: PASAC13>PASAC11>PASAC1". Why the corrosion inhibition efficiency follows this order? Scientific explanation should be given. This is a very important point to be discussed of this paper.

Author's Feedback:

Dear Editor,

I believe that all changes required have been made and all the spelling mistakes have been corrected (see the paper).

In previous papers from *Revue Roumaine de Chimie*, other types of PASAC polymers have been published. They were studied on different materials and in different cooling water systems.

PASAC1, 11, 13 vs PASAC 10, 12:

- The reaction conditions are different;

- The properties of these polymers are different;

PASAC-10: (polyaspartic acid and H_3PO_4 molar ratio 1:0.025 in propylene carbonate with sodium citrate at $t=200^\circ\text{C}$), microwave power 100W, reaction time of 120 minutes.

Some properties of this polymer are: active substance 31%, $\text{pH}=8.5$, reduced viscosity of 0.15 dLg^{-1} and antiscaling properties for 5pp =41% and for 10ppm=63%;

PASAC-12: (polyaspartic acid 0.07M and H_3PO_4 , in ethylene carbonate/propylene carbonate, gravimetric ratio 1/1 at $t=150^\circ\text{C}$, microwave power 180W, reaction time of 240 minutes,

Some properties of this polymer are: active substance 43%, $\text{pH}=8.7$, reduced viscosity of 0.17 dLg^{-1} and antiscaling properties for 5pp =47% and for 10ppm=67%;

PASAC-1 (maleic anhydride and urea molar ratio 1.5:1 at temperature of 140°C), microwave power 400W, reaction time of 120minutes. Some properties of this polymer are: active substance 43%, $\text{pH}=8.5$, reduced viscosity of 0.17 dLg^{-1} and antiscaling properties for 5pp =48% and for 10ppm=65%;

PASAC-11 (polyaspartic acid and H_3PO_4 molar ratio 1:0.05 in propylene carbonate with sodium tartrate at temperature of 170°C), microwave power 600W, reaction time of 180 minutes. Some properties of this polymer are: active substance 37%, $\text{pH}=9.4$, reduced viscosity of 0.21 dLg^{-1} and antiscaling properties at 5pp =68% and for 10ppm=88%;

PASAC-13 (polyaspartic acid 0.07M and H_3PO_4 , in ethylene carbonate/propylene carbonate, gravimetric ratio 1/1.5 with trisodium citrate at temperature of 200°C), microwave power 600W, reaction time of 90 minutes. Some properties of this polymer are: active substance 45%, $\text{pH}=9.6$, reduced viscosity of 0.19 dLg^{-1} and antiscaling properties at 5pp =79% and for 10ppm=95%;

All the required changes have been made.