Correction to: A simplified equation of state for polymer melts from perturbed Yukawa hard-sphere chain

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After a careful reconsideration of Ref. [1] article, several typos appeared in writing the general formalism of PYC EoS, Eqs. 2 and 4 of Ref. [1]. Since those typos were appearing in the key equations of this paper, they would cause the significant errors in the calculation of properties of studied molten polymers using “Yukawa hard-sphere chain equation of state”. Regarding this, the present Erratum aims to fix this issue.

The correct formalism of perturbed Yukawa hard-sphere chain in terms of the compressibility factor is as follows:

$$Z_{SAFT}^{HCS} = \frac{P}{\rho k_B T} = m \frac{1 + \eta + \eta^2 - \eta^3}{(1 - \eta)^3} - (m - 1) \frac{1 + \eta - \eta^2/2}{(1 - \eta)(1 - \eta/2)} \quad (1E)$$

Also, some typos were appearing in writing the relevant equation to the packing fraction of Yukawa hard-spheres, i.e., Eq. 4 of Ref. [1]. Regarding this, the correct equation is:

$$\eta = \frac{m\pi\rho\sigma^3}{6} \quad (2E)$$

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Reference

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