1 hornerErrorBound

According to [1], p.95, the error bound for evaluating a polynomial using Horner's Algorithm is:

$$|p(x) - \hat{r}_0(x)| \le \gamma_{2n} \sum_{i=0}^{n} |a_i| \, |x^i| \equiv \gamma_{2n}\tilde{p}(|x|)$$

where $p(x)$ is the exact evaluation at x and $\hat{r}_0(x)$ is the result using Horner's Algorithm.

A running error bound, which is tighter, can be calculated via a slight modification:

[1] - N. J. Higham. Accuracy and Stability of Numerical Algorithms. SIAM, second edition, 2002.