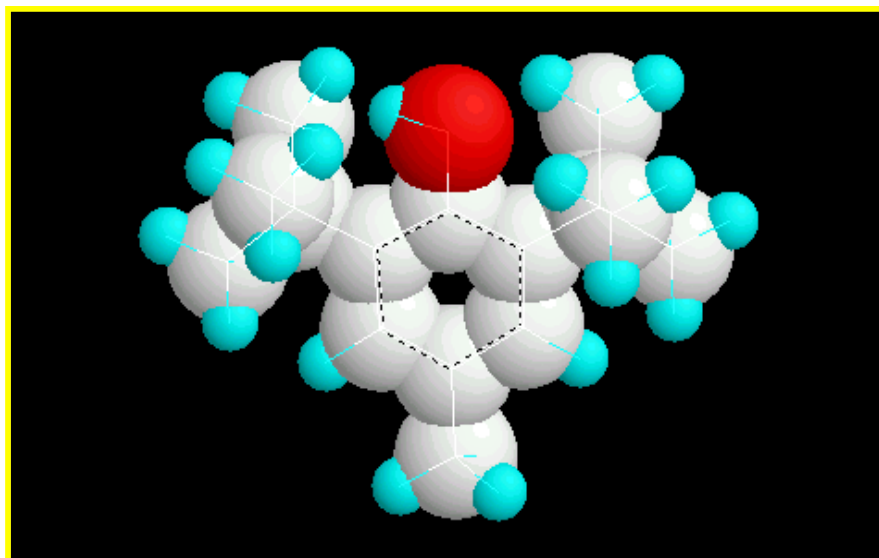
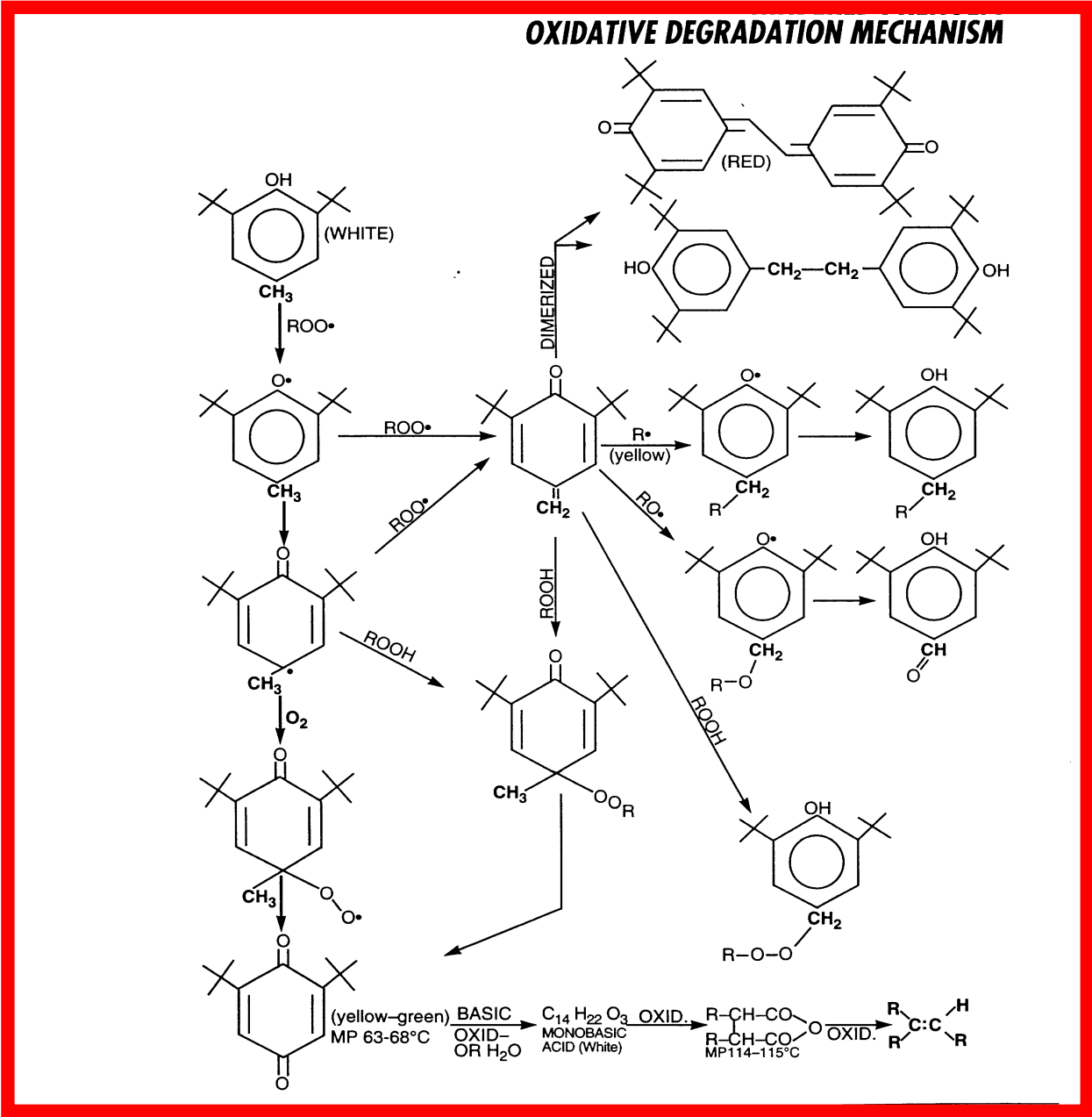


New Primary Phenolic Antioxidant – Blue Phenoxy Radical Stabilizer

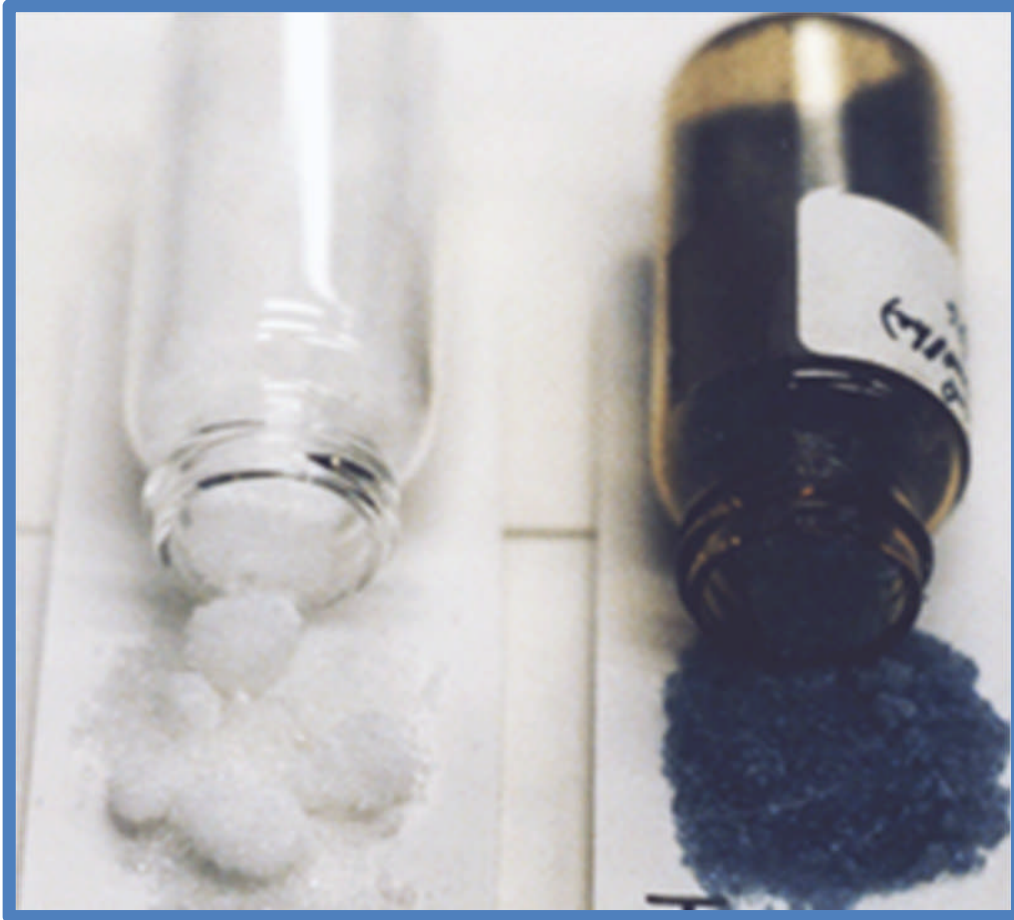
Classical mechanisms of free radical chemistry of a primary phenolic antioxidant hydroxyl group and free alkyl radical is well established chemistry. BHT or 2,6 di-tertiary butyl phenol is but one example.





In order to change the nature of this mechanism a review of post additive manufacturing of phenolic antioxidants'

existing chemistries with simple and inexpensive radio-chromic modifications we were able to achieve new more effective less discoloring phenolic antioxidants with superior free radical performance compared with the starting material. The resulting blue phenoxy radical stabilizer was confirmed by ESR and EPR analytics.



Blue Phenoxy Stabilizers:

- **Twice the stabilizer performance as the original with little in-situ polymer discoloration initially and over time due to the new mechanistic route of the free radical chemistry.**

- **Faster termination of free radical chemistry than classical mechanisms due to rapid R^* to R^* termination and the elimination of hydrogen abstraction route.**

This approach appears to work for many of the existing commercial phenolic chemistries on the market with exceptions to the rule. Formation of the blue color in the neat phenolic can be altered by radio-chromic variables. This technology applies to both inorganics and organic chemistries.

