

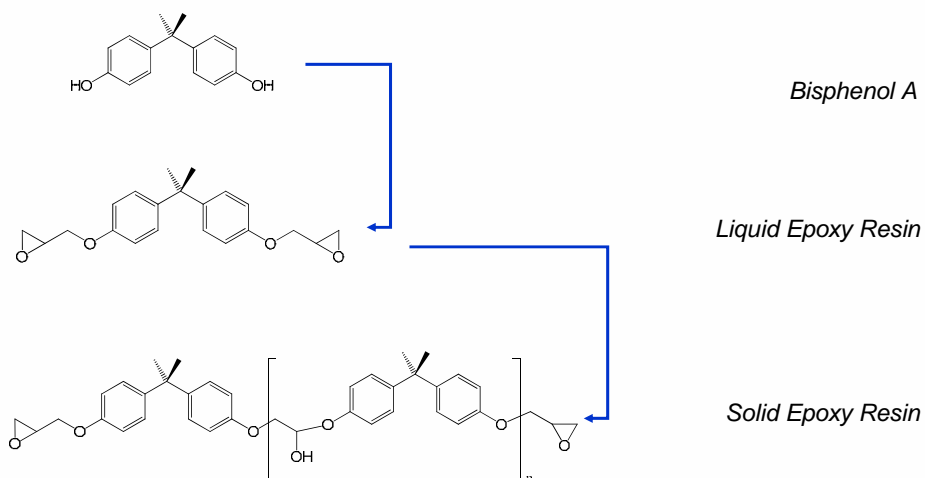
Module 38 – Brominated epoxy resins chemistry

Objectives

- Understand the chemistry of the brominated product range
- Understand how it compares with the chemistry of the bisphenol A resins
- Understand why brominated resins are interesting
- Understand how the brominated epoxy resins are characterized

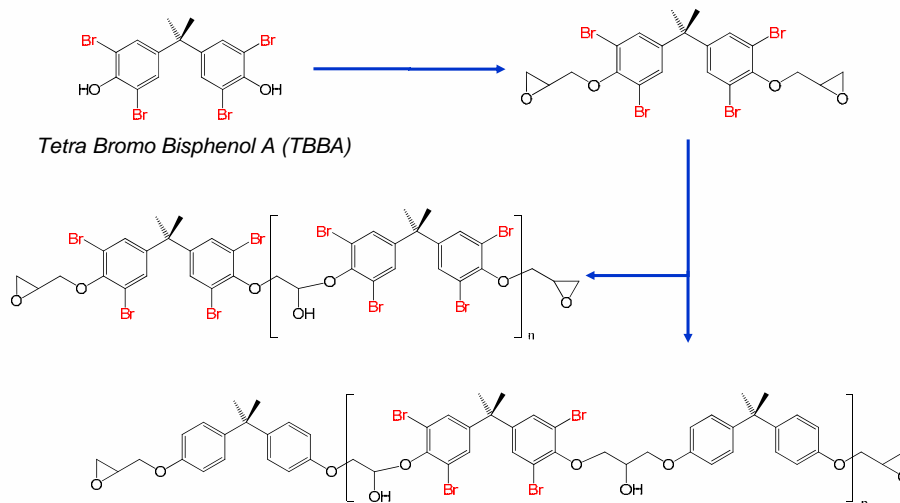


Reminder: bisphenol A epoxy resins chemistry





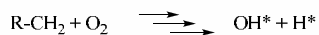
Brominated epoxy resins chemistry



Why add bromine?

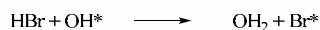
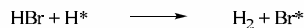
- Fire propagates thanks to reactive

- Hydrogen radicals (H^*)
- Hydroxyl radicals (OH^*)



- Brominated compounds

- Release HBr
 - Produce less reactive Br^*
- \Rightarrow Fire stops propagating





Characterization

- **Epoxy Equivalent Weight (gr/eq.)**

How much resin do I need to take in order to have one epoxy group?

- **Viscosity**

How easily will the resin flow?

- **Volatiles**

How much resin does the solution contain?

- **Bromine content**

How much flame retardant atoms are in there?



Summary

- Understand the chemistry of the brominated product range
- Understand how it compares with the chemistry of the bisphenol A resins
 - » Similar to bisphenol A epoxy resins chemistry
- Understand why brominated resins are interesting
 - » Flame retardant properties
- Understand how the brominated epoxy resins are characterized
 - » Similar to bisphenol A epoxy resins
 - Solid content
 - Viscosity
 - EEW
 - Bromine content