



Epoxy Platform

Airable's biobased epoxy platform delivers a sustainable alternative to petroleum-based resins such as bisphenol A (BPA). Derived from renewable soybean oil, our epoxies provide tunable properties, from flexible to rigid, and grant reactivity equivalent to traditional aliphatic epoxies. Our solutions may be formulated into adhesives, sealants, coatings, and composites for industrial and consumer applications.

THE TECHNOLOGY

Airable's soy-based epoxies introduce tunability through modification of the soy molecular structure. As such, our materials range in form from wax to thin liquid and, when formulated, can vary in hardness and flexibility. To demonstrate basic performance and compatibility, the soy-based materials were formulated with bisphenol A diglycidyl ether (BADGE) and Hexatran 100. The formulated resins were then cured in an oven at 140°C for three hours. The data collected suggests a wide range of stiffness depending on the epoxy resin used, making the formulation suitable for a range of applications.

Epoxy Resin	Epoxide Equivalent Weight (g/eq)	Gardner Color	Form	Young's Modulus (MPa)*	Shore A/D*	Bio-Content (%)
Air-Rez 561	437	12	Liquid	0.53	0.5/NA	100
Air-Rez 587	291	2	Solid	6.67	97/58	69
Air-Rez 542	800	6	Liquid	1.92	55/NA	100
Air-Rez 155	235	5	Liquid	2.37	64/NA	83
Air-Rez 130	241	15	Liquid	2.93	73/NA	80
Air-Rez 156	244	5	Liquid	6.36	95/56	79

*cured 1:0.5:0.5 amine(Hexatran 100): Airable epoxy: BADGE (Mn~377)

APPLICATIONS

- Coatings
- Sealants
- Adhesives
- Composites

BENEFITS

- High bio-based content
- Drop-in compatibility with traditional petroleum-based epoxies
- Tailorable mechanical and thermal properties
- Suitable for wide range of applications
- Reduced reliance on BPA-type systems

Airable's epoxy platform provides a renewable foundation for next-generation sustainable materials. We invite partners for collaborative product development.