

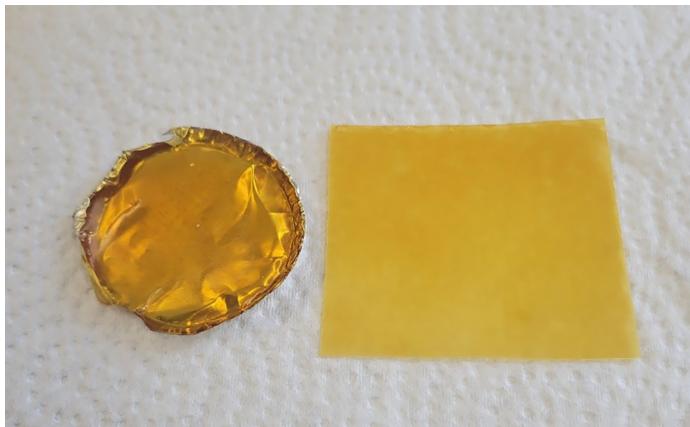


Carbonated Soy

Airable Research Lab has synthesized carbonated soy-based products. These materials transform carbon dioxide into useful bio-based cyclic carbonates that may be used in non-isocyanate polyurethanes. Our carbonated soy product has high (78%) bio renewable content and sequesters CO₂, providing an excellent option for those seeking a more sustainable feedstock for your material needs.

THE TECHNOLOGY

Airable has developed two soy carbonates, one from soybean oil and the other from soy methyl ester. The cyclic carbonates may be ring-opened to yield a non-isocyanate polyurethane, as demonstrated in the figure below.



Carbonated soybean oil cured with a diamine in an aluminum pan (left) and on a Teflon sheet (right).

The table below provides technical details of the Airable carbonates.

	Carbonated Soybean Oil	Carbonated Soy Methyl Ester
Appearance	Thin amber liquid	Thick amber liquid
Viscosity @ 21°C (cPs)	548	72,500
Density (g/mL)	1.053	1.079
Refractive Index	1.469	1.480
Oxirane Oxygen (%)	0.65	0.52
Carbonate Equiv. MW	324	309

STATUS AND AVAILABILITY

The formulation can be optimized and tailored to an individual company's needs. Contact Airable Research Lab to discuss partnership options.