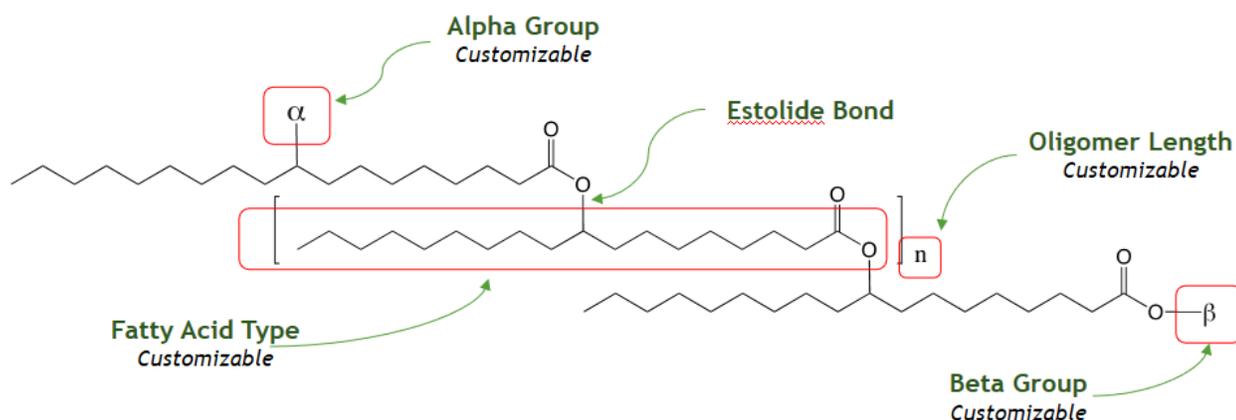


What are Estolides?

Annie Hynes, Biosynthetic Technologies

Estolides are a class of unique bio-based oils with a variety of uses.

Their oligomeric structure contains fatty acid repeat units, with secondary ester linkages on the alkyl backbone. In the general structure shown above, functional groups denoted as α and β , oligomer length n , and the fatty acid feedstock can all be manipulated in order to achieve desirable performance properties. Relevant technical performance properties include increasing or decreasing viscosity and polarity, as well as improving cold temperature properties and oxidative stability.



The base oils offered by Biosynthetic Technologies exhibit excellent performance benefits.

These benefits include lubricity and load-carrying characteristics, strong oxidative stability, and good demulsibility. In addition, they show high flash point, with closed-cup values ranging from 200°C to 245 °C (ASTM D93) and open-cup values ranging from 240°C to >260 °C (ASTM D92). BT base oils display good cold temperature performance as well, with pour points ranging from -18 °C to -21 °C (ASTM D97).

On top of their impressive technical performance, Estolides offer excellent environmental performance.

These oils contain high bio-content, are biodegradable and non-toxic, and do not bioaccumulate. At BT, our base oil products are 70-90% biodegradable (OECD 301) with 65-95% bio-content (ASTM D6866). Additionally, they displayed no bioaccumulation (OECD 107) and were non-toxic at 1000 mg/mL (OECD 201, OECD 202, OECD 203, OECD 209).

With a highly customizable structure, Estolides' physical properties can be manipulated for specific applications.

In addition, their environmental compatibility allows them to be used in widespread industries ranging from lubricants to personal care. Overall, Estolides serve as naturally plant-derived oils that improve the quality of formulated products.