

# Estolide Lubricants

## What is this technology?

Estolides are new functional fluids made from renewable vegetable and animal based oils. Estolides have: excellent lubricity, cold temperature, oxidative stability and biodegradability properties which make them very useful as lubricants.



## What problem does it address?

There is an increasing demand for biobased materials, however, there are two major performance problems presented by the industrial use of biobased fluids:

- Low resistance to thermal oxidative stability
- Poor low temperature performance

**Estolides overcome these shortcomings without the addition of expensive additives.**

## Who could use this technology?

Estolides have shown great promise for use in a wide variety of products with varying physical properties, such as:

- Edible applications
- Cooling fluids
- Cosmetics
- Hydraulic fluids
- Inks
- Crankcase lubricants
- Coatings

## How is this technology unique?

This is a biodegradable material, yet suitable to cold weather applications and thermally harsh conditions. Under these conditions, performance of estolides:

- Exceed those of other bio-based fluids
- Is double the oxidative stability performance of most petroleum based oils found on the shelves

With the use of estolides as a crankcase fluid, automobile researchers have seen an increase in gas mileage over traditional oils.

## Licensing Opportunity

This technology needs partners for application and process development and scale-up.

## Stage of Development

Series of estolides are currently on-hand to meet a variety of applications. On-site capacity exists to conduct pilot plant production runs with a collaborator.

NCAUR estolides are currently in commercial use in a cosmetic application. Scale-up batches are being produced for an industrial application; the material has also been favorably evaluated by several other companies for specific uses, including heavy equipment lubrication.

## IP Status

Awarded U.S. Patents 6,316,649 and 6,018,063

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