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National Center for Agricultural Utilization Research

Biodegradable Grease

What is this technology?

A biodegradable grease suitable for industrial purposes, that is made from the renewable resource vegetable oil. The grease is a gel-like structure formed when oil is trapped in the fiber network of specially made soap, during a process involving heating and cooling cycles.

What problem does it address?

Biodegradable grease provides an alternative to the costly disposal of petroleum products that are environmentally toxic.

Biodegradable grease effectively operates under a wide temperature range and provides superior lubricity and adherence to surfaces. It also delivers performance properties comparable to petroleum products in areas of:

- Oxidation stability
- High flash point
- Wear and surface protection

Who could use this technology?

This technology is useful in, but not limited to applications such as:

- Irrigators and other agricultural equipment
- 5th wheel grease lubrication
- Chain saws
- Mechanical moving parts
- Tractor tracks
- Pin joints
- Reducing rail side and wheel flange wear in railroad tracks

These applications would be used in agricultural, trucking, manufacturing, mining and railway industries, among others.

How is this technology unique?

Our biodegradable grease uses less expensive starting materials and therefore costs less than currently available biobased lubricants on the market. The process can be designed to obtain grease hardness ranging from NLGI type 0, 1 and 2 and specific end use application.

CRADA Opportunity

There are multiple potential applications of this technology, covering a wide range of industries; commercial partners are needed for application and end-use product development.

Stage of Development

The process for producing biobased grease using economically friendly renewable resources has already been developed and optimized. Product testing against existing market products has been positive.

IP Status

Patent pending for biobased grease formulation

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