

Example Questions: Soybean Oil-Based Lubricant

Process Overview

Please draw a simple process diagram that outlines the inputs (raw materials, energy) and outputs (waste, product, emissions) from your production process.

Do you produce more than one product at this plant? Will you be able to provide inputs and outputs specific to this product? If not, could you provide a list of products produced in a year so that we can allocate the inputs to the desired product?

Raw Materials

What raw materials do you use other than soybean oil?

Do you produce your own soybean oil, or is it purchased?

If you produce your own oil, please provide a mass balance for the production process including – process yield (oil/meal), energy use, water emissions from process, waste generation, and air emissions. Please provide these all in terms of 100 gallons of soybean oil.

If you do not produce your own soybean oil, do you have a specific supplier or do you buy your oil on the open market? If you use a supplier, do you have a contact that we can talk to about their process?

For your other raw materials, what percentage of raw materials do you use? For the additives that you have provided, can you provide us with MSDS's? If not, can you give us generic names for the materials or provide us with supplier contacts so that we identify the compounds?

Energy Inputs

If you blend your oils using an electric motor, what is the HP of the motor and how long do you blend the product to produce a 100 gallon batch of oil?

Does the plant get its electricity from the grid or from onsite generators? If onsite generators, what is the fuel source?

Is there any pre-heating of the oil prior to blending? What is the source of the heat – steam or electrical? If steam, how do you generate the steam?

Air Emissions

Are there any VOC emissions from the blending process that are monitored? If so, are the emissions vented to the atmosphere or they captured and destroyed?

Does the plant have an environmental permit for air emissions? What emissions are covered under the permit? Has the plant ever exceeded the emission permit limits?

Water Emissions

Does the production process generate any specific wastewater emissions? Is the wastewater discharged to a public wastewater treatment plant or does the plant have its own wastewater treatment plant?

Waste Generation

What waste is generated from the production process?

How is the waste managed? Is it shipped off-site to a specific vendor or managed by the local municipality/county? Do you know how it is managed off-site – incinerated, landfilled, or recovered? If not, can you provide a vendor that we can contact to determine the waste's ultimate fate?

Transportation

How is the biobased lubricant shipped to the final customer?

What kind of packaging is used – reusable drums, tanker trucks, gallon containers...?

Use Phase

What is the density of the final product?

Is the product fully biodegradable?

What is the functional lifetime of the product?