

## **TSCA Nomenclature May Be Barrier for Advanced Biofuels**

Any number of complications could trip up the commercial use of an advanced biofuel, but one that should attract attention is the requirement that all fuels be listed on [Toxic Substances Control Act \(TSCA\)](#) Inventory of Chemical Substances

This requirement has the potential to raise reporting requirements that could be a barrier to sales of oils made from algae feedstocks, as well as other non- traditional biomaterials, said [Richard Engler, Ph.D.](#), with [Bergeson & Campbell, PC](#).

"TSCA is based on identification of what you are making. So if you have a single, defined molecule, like ethanol, it's simple," he told OPIS in a follow- up to his presentation at last month's Advanced Bioeconomy Leadership Conference.

Ethanol is a Class 1 chemical on the TSCA list. Its identity does not depend on how it is made. And since one ethanol is chemically the same as another, Engler explained that a new producer of ethanol can use the existing TSCA Inventory registration.

But most hydrocarbon-based and bio-based fuels are Class 2 chemicals, which are identified differently, Engler said. Class 2 compounds are defined as having unknown or variable composition, complex reaction products, and biological materials.

In Class 2, the name of the substance typically includes either (or both) the source material and the process used to make it. That is, the compound is defined in part by the feedstock and/or manufacturing process.

This naming system has big implications for advanced biofuels producers, Engler explained. Since the source (feedstock) is in the definition, even if a new product is developed that has the same chemical composition as an existing product, it cannot be classified in that same substance if it comes from a different source.

In fuels, this would mean that a biodiesel made from waste would have to be listed separately from a biodiesel made from corn oil and a biodiesel made from soy oil -- even if the three fuels are chemically indistinguishable.

"People might think that they can make an algal oil, and if it's just like corn oil, then it's okay to use the corn oil nomenclature," said Engler. "But they can't."

The naming convention in TSCA will force producers of these innovative oils to notify EPA of each product and segregate it when it moves down the supply chain, said Engler. "This may throttle the market for non-food oils that are not already listed in the TSCA system," he said. "It's a hassle for your customers, who have to notify EPA each time they make a new product."

To address this problem, EPA has created a nomenclature system known as "Soap and Detergent Association," or SDA nomenclature. These are 35 plant, animal and marine sources for which the requirement of naming the source in the definition is waived.

SDA compounds include glycerides and fatty acids made from some biomaterials, but not all. A few that are common for biofuels, such as palm, rapeseed, sorghum and soy, are covered by SDA when oils with fatty acids are produced. They do not need to have the name of their source in their definition.

But for other triglycerides, such as those made from algae or jatropha, the SDA nomenclature is not available. That leaves both the producer and buyer and, possibly, others down the supply chain with requirement for pre-manufacturing notification with EPA. And that is a recordkeeping hassle that could scare off buyers, said Engler.

He suggested a few solutions. First, any company developing an innovative biofuel or biochemical should work with the [TSCA Inventory Expert Service](#) to obtain a Chemical Abstract Service (CAS) Name and CAS Registry Number.

That information will enable a search on the TSCA Inventory. If that search yields a match with an existing classification, the problem is solved. But if it's new, then the producer needs to undertake the steps for EPA pre-manufacture notification, and to make sure that parties down the line receive the appropriate information.

For a comprehensive solution, Engler said that now would be a good time for the advanced biofuels industry to petition EPA to expand its list of 35 organisms that qualify for SDA treatment. "The original privileged list of 35 is freezing out innovation," he said. "The industry should go to EPA to work out how to expand access to the nomenclature, but without raising health risks."

EPA could expand the list through rulemaking process. Or, Engler suggested, the change could be part of the current TSCA reform legislation that has been proposed in the Senate (S. 697). "A statutory fix would be the more efficient way to do it. But stakeholders must be engaged to make it happen," he said.

--Kevin Adler, [kadler@opisnet.com](mailto:kadler@opisnet.com)

Copyright 2015, Oil Price Information Service. Republished with permission from Oil Price Information Service, [www.opisnet.com](http://www.opisnet.com)