



**BIOBASED AND
RENEWABLE PRODUCTS
ADVOCACY GROUP**

Advanced Bioeconomy Leadership Conference 2018

Advocating for Commercialization of Biobased Products

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Biobased and Renewable Products Advocacy Group (BRAG[®])

- Platform for organizations engaged in biobased chemistries to:
 - Identify and address regulatory barriers to commercialization for their unique products
 - Advocate for reasonable and scientifically sound decision-making with respect to biobased chemistries and technologies
 - Communicate the benefits of biobased products to regulators, legislators, and consumers

Current Bioeconomy

- **Approximately 40,000 biobased products currently on the market**
- **Found in a broad range of product categories**
 - **Personal care products**
 - **Surfactants**
 - **Fuels and fuel additives**
 - **Polymers**
 - **Coatings and paints**
 - **Adhesives**
 - **Lubricants**
- **Capable of impacting every sector of the chemicals industry**
 - **Untapped market with room for innovation**

Expanding beyond Traditional Feedstocks

- **Focus on the establishment of new biobased and renewable feedstocks**
 - **Consider whether novel feedstock will impact regulatory status of the chemical substance**

Regulation of Chemical Substances

- **Toxic Substances Control Act (TSCA)**
 - **“Catch all” chemical statute**
 - Covers uses not regulated by other federal statutes
 - Same substance may be regulated by multiple statutes depending on the use
 - **Requires all chemicals in commerce to be listed on the TSCA Inventory or eligible for an exemption**
 - List of chemical substances that may be manufactured or imported into the U.S. for TSCA purposes

Regulation of Chemical Substances

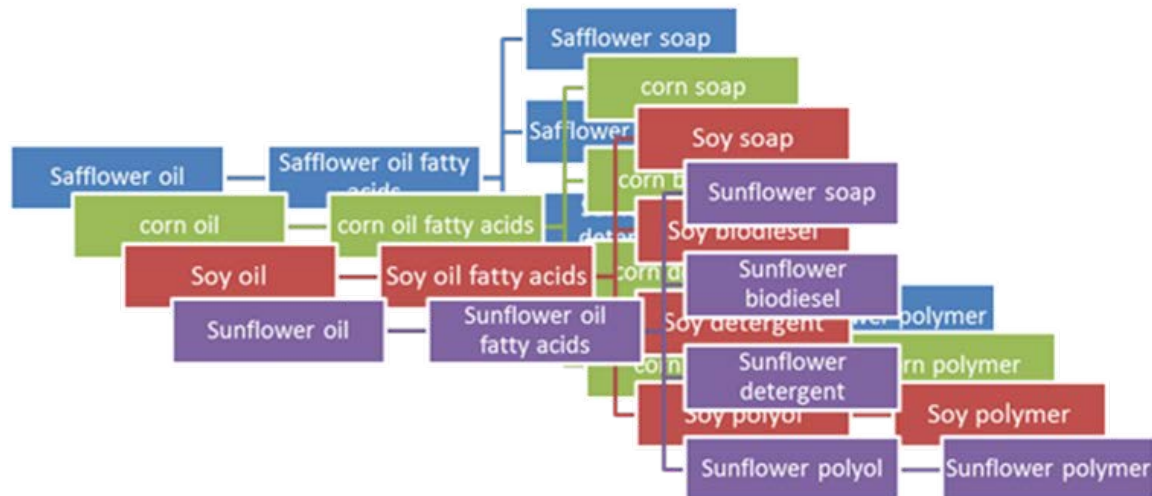
- **TSCA Inventory status determines whether a substance is “new” or “existing”**
 - **Existing Chemical Substance**
 - Listed on the TSCA Inventory
 - **New Chemical Substance**
 - Not listed on the TSCA Inventory and not otherwise exempt from listing
 - Subject to review and approval by the U.S. Environmental Protection Agency (EPA) prior to commercialization

Regulation of Chemical Substances

- **Chemical identity determines Inventory status**
- **Two classes of TSCA identities**
 - **Class I:**
 - Single, defined substances
 - *E.g.*, ethanol, succinic acid, 1,4-butanediol
 - **Class II: Unknown or variable composition, complex reaction products, and biological materials (UVCB)**
 - No definite molecular formula
 - Partial or unknown structural diagram
 - Identity includes source and/or process in the name or as part of the definition

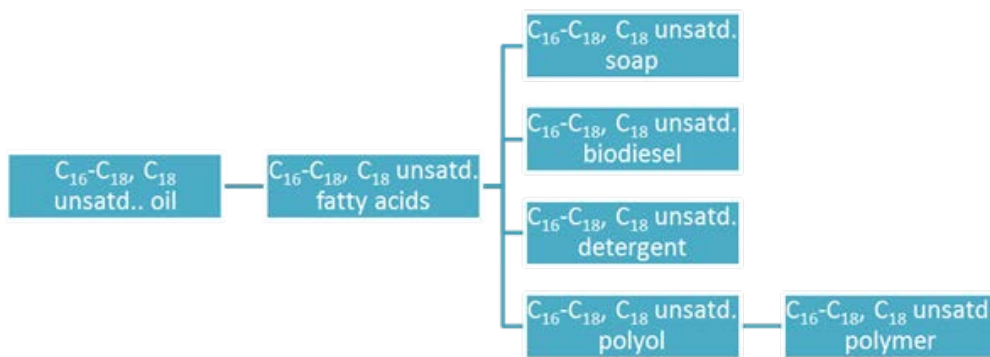
Inventory Listing Challenges

- Changing the source for a UVCB substance results in a new chemical listing on the Inventory
 - Source descriptor propagates through derivatives and intermediates
 - Creates a myriad of equivalent chemicals with different names



Feedstock Flexibility with Soap and Detergent Association (SDA) Nomenclature Approach

- Allows oils from a set of 35 natural sources to be used interchangeably
 - Relies on alkyl range descriptor rather than source
 - Identified by the fatty acid chain lengths present
 - Draws equivalence between the 35 natural sources and synthetic equivalents



<u>Vegetable</u>		<u>Animal</u>	<u>Marine</u>
Avocado	Peanut	Grease	Herring
Babassu	Rapeseed	Lard	Menhaden
Castor	Rice Bran	Neatsfoot	Salmon
Coconut	Safflower	Poultry	Sardine
Corn	Safflower	Tallow	Sperm Body
Cottonseed	(high oleic)		(whale)
Crambe	Sesame		Sperm Head
Linseed	Sorghum		(whale)
Olive	Soybean		Whale
Oiticica	Sunflower		
Palm	Tung		
Palm-kernel	Wheat Germ		

SDA Impact on Innovation

- **Feedstock flexibility does not apply to other sources**
 - Tall oil
 - Waste oils and grease
 - Jatropha oil
 - Microbial oils
 - Camelina oil
 - Algal oils
- **Without access to SDA nomenclature, UVCB substances from “novel” sources are considered new chemicals**
- **Results in a cascade of redundant new chemical reviews on equivalent chemistry**
 - Presents a regulatory barrier to commercialization
 - Hinders innovation

BRAG Objectives

- **Initiate a collaborative effort between EPA and industry to develop nomenclature approach that:**
 - **Recognizes equivalent chemistry between traditional and novel feedstocks**
 - **Increases flexibility for U.S. supply chain**
 - **Supports U.S. innovation and commercialization of biobased products**
- **Conserves EPA resources**

BRAG Objectives

- **Monitor and engage in regulatory advocacy regarding the implementation of new TSCA**
 - **Significantly amended on June 22, 2016**
 - A number of key provisions impacted (including Sections 4, 5, and 6)
 - Gives EPA new authority to consider equivalence
 - **Aim to ensure that biobased sector is appropriately addressed in final regulatory language**
- **Highlight benefits of biobased substances**
 - **Under the current Administration, less emphasis is placed on “green” properties**
 - **Need to incorporate discussion of enhanced performance and/or safety**

Thank You

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