



Safer Choice Partner and Stakeholder Summit

Day 1

November 15, 2016



Safer Choice Update

Clive Davies

November 15, 2016

Update



- How we developed the Agenda
- What we have done to improve priorities identified in the last Summit
- What to expect in the panel sessions



Crafting the Agenda



- Our Goal:
 - Dialogue with our Stakeholders
 - Understanding
 - What is working and where we should change
 - Your needs and priorities
- Agenda
 - Based on last year's outcomes
 - Feedback over the course of the year
 - Stakeholder prioritization
- Stakeholders are our moderators and panelists

Adding Third Party Profilers



- **Goal:** Help Safer Choice meet the growing demand for products that carry the Safer Choice label.
- **The Process:**
 - Application period March – May, 2016
 - Six entities applied
 - Two qualified for Phase II: Pilot Product Review
- **Currently:**
 - Pilot product submissions are under evaluation
 - Program will decide on addition of new third parties by early 2017

Safer Choice Community



- Opened partner and supplier communities in January 2016
- Currently almost 100 community users
- Partner community:
 - Submit products
 - Check the status of submissions
 - View upcoming audit and renewal dates
- Supplier community:
 - Submit ingredients – for product review, CleanGredients, and/or SCIL
 - Check the status of submissions

Safer Choice Community Benefits



- Speeds application review
- Minimizes redundancy
- Houses all of your Safer Choice information
 - Ingredients, packaging, and more
 - Status and timing
- Supports development of review efficiency metrics and allows copying of information from submitted or in-progress reviews
- Meets standards for data security
 - FedRamp certified and NIST 800 compliant

Safer Chemical Ingredients List



Safer Chemical Ingredients List

- The listed chemicals are safer alternatives, grouped by their [functional-use class](#).[†]
- Chemicals are marked as a [green circle](#), [green half-circle](#), [yellow triangle](#), or [grey square](#).[‡]
- This list includes many of the chemicals evaluated through the Safer Choice Program. It does not include confidential chemicals. There may be chemicals not included in this list that are also safer.
- Some of the listed chemicals may not be on the [TSCA inventory](#) and therefore may not be authorized/allowed for TSCA uses. Those considering TSCA uses for these chemicals should first determine whether such use is authorized. Chemicals not listed on the TSCA inventory are indicated as such in a pop-up box that appears upon clicking the hyperlinked CAS RN in the table below.

◆ Please Select: [All Functional Use Classes](#)

◆ or Select a Functional Use Class:

- [Antimicrobial Actives](#)
- [Chelating Agents](#)
- [Colorants](#)
- [Defoamers](#)
- [Emollients](#)
- [Enzymes and Enzyme Stabilizers](#)
- [Fragrances](#)
- [Oxidants and Oxidant Stabilizers](#)
- [Polymers](#)
- [Preservatives and Antioxidants](#)
- [Processing Aids and Additives](#)
- [Skin Conditioning Agents](#)
- [Solvents](#)

New Look!

Clear Options

Chelating Agents

Note: When a functional use category is selected, the search above will only apply to the chemicals assigned to this functional use. To select a different functional use, please [scroll up](#).

Show 25 entries

Code	Common Name	CAS Registry Number	Functional Use
	2-Butenedioic acid (2Z)-, ammonium salt (1:1), homopolymer, hydrolyzed, sodium salts	181828-06-8	Chelating Agents
	Alanine, N,N-bis(carboxymethyl)-, sodium salt (1:1)	164462-16-2	Chelating Agents

New Search Bar!

- [Specialized Industrial Chemicals](#)
- [Surfactants](#)
- [Uncategorized](#)

◆ Search: Name or CAS RN

From 450 to 824 chemicals in four years

Market-ready ingredients



- GreenBlue's CleanGredients is one source of such information
- GreenBlue outreach to suppliers
- It is easier and more cost-effective to list new ingredients
- 495 ingredients listed currently
 - 92 new ingredients
 - 33 new ingredients added to functional classes that previously had none
- 57 active suppliers
 - 14 new suppliers listing their ingredients

Partner of the Year Awards



- Timeline:
 - December 16, 2016: Applications due
 - May, 2017: Ceremony in Washington, DC
- Please respond to the questions in the application!
- Focus on 2016 activities
- Webinar available soon on the Safer Choice website



Safer Choice Outreach



- Two Major Campaigns Each Year
 - Consumer: Spring Cleaning
 - I & I: Back-to-School
 - Other outreach through the year

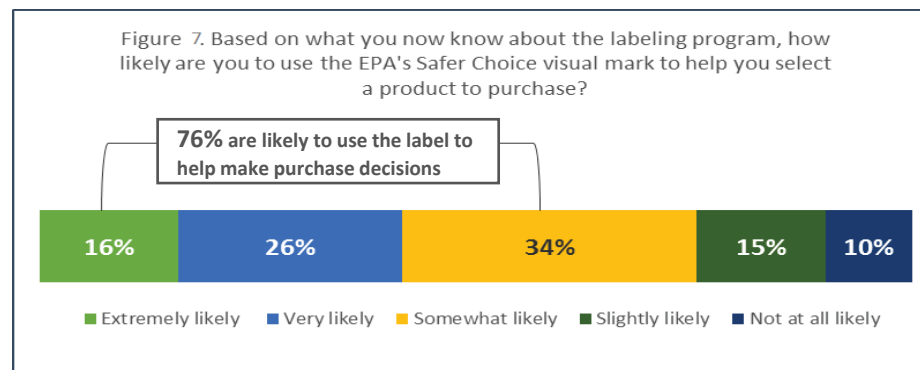


Survey of Consumer Awareness



Survey of 2,000+ adult U.S. residents in February 2016:

- More than **one third** of consumers said they have seen the Safer Choice label on store shelves.
- **76%** of consumers... responded that they would use the Safer Choice label to inform purchasing decisions.
 - **83%** of parents...
 - **86%** of millennials...



Summit Agenda



Day 1

- Improving Program Efficiencies
- Enhancing the Safer Chemical Ingredients List
- Expanding Outreach: Consumer and I&I
- Breakout Sessions:
 - SCIL Chemical Re-reviews
 - Enhancing the Safer Choice Community

Day 2

- Opening New Product Sectors
- Cultivating the Safer Chemistry Supply Chain
- Ask Me Anything: Working with Third-Party Profilers
 - NSF
 - ToxServices

Panel Discussion Format



- EPA presents background information
- Moderator sets the context
- Panelists make remarks and panel discussion
- Questions from the audience
 - Audience can write their questions on yellow comment cards. These will be collected and the top questions will be provided to the panelists.
 - If time allows, audience can come up to the microphone to ask additional questions.

Session Name
Question
Your name and affiliation

Improving Program Efficiencies



Moderator:

Taylor Nations, Earth Friendly Products

Goal: Review progress and explore ideas for overcoming barriers



- Stakeholders' top issue for discussion
- Information exchange for chemical ingredients is an important issue

Enhancing the Safer Chemical Ingredients List



Moderator:

Jennifer McPartland, Environmental Defense Fund

Goal: Expanding the pool of chemicals and ingredients for current sectors and enabling additional sectors



- Robust ingredient selection is important for formulators
- Market-ready chemicals are also a priority
- Building the lists is a continued priority

Expanding Outreach



- *Overall Goal: Build on Safer Choice Spring Cleaning and Back-to-School Outreach campaigns; strengthen communications with other key audiences*
 - Part 1: Safer Choice in the Supply Chain
 - Part 2: Successes in the Consumer Sector

Expanding Outreach – Safer Choice in the Supply Chain



Moderator:

Steve Ashkin, The Ashkin Group



- An enhanced focus on product distributors and institutional purchasers
- Improving communication with the advocacy community

Expanding Outreach – Successes in the Consumer Sector



Moderator:

Hal Ambuter, RB



- Understanding the customer needs that Safer Choice can satisfy
- Partnership in outreach

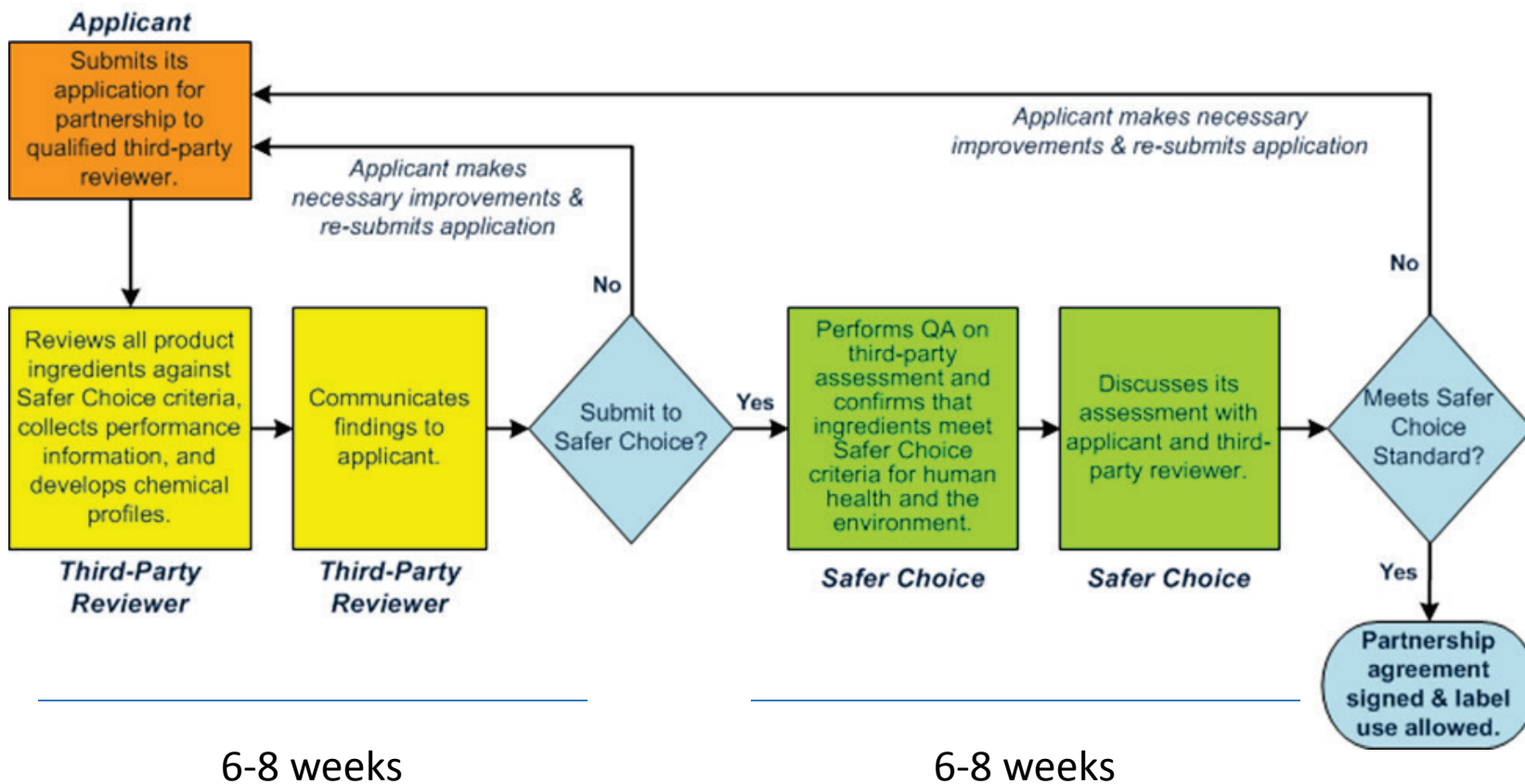


Improving Program Efficiencies

Aly Lorenz, Safer Choice Program
November 15, 2016



Product Review Process



2015 Summit Outcomes



- Areas for improvement
 - Timely access to ingredient formulation information
 - Improved communication and transparency on status of chemicals, ingredients, and products
 - More regular dialogue with partners and stakeholders

EPA Progress: Access to Ingredient Information



- Opened partner and supplier communities
 - Simplifies process of requesting and providing ingredient information
 - Decreases back-and-forth by requiring key pieces of information upfront
 - Adds ability for users to copy previously-submitted information
- Added ability for third party profilers to share ingredient information through the Community
 - Suppliers will need to provide permission
 - If interested in piloting, contact your third party
- CleanGredients expansion

EPA Progress: Improved Communication on Status



- Opened partner and supplier communities
 - Partner access to product review status
 - Partner access to status of supplier submissions
 - Supplier access to ingredient review status (SCIL and CleanGredients)
- SCIL and CleanGredients expansion
- Process for communicating changes to SCIL status

EPA Progress: Regular Dialogue



- Annual Partner and Stakeholder Summits
- Partner meetings
- Supplier meetings
- Stakeholder meetings

EPA Progress: Other Areas



- Adding third party profilers
- Third party profiler initiatives to improve efficiency
 - Ask Me Anything sessions with third parties
- Building out Safer Choice Community functionality
 - Safer Choice Community session



Enhancing the SCIL

Aly Lorenz, Safer Choice Program
November 15, 2016

Introduction to SCIL



- Living list of **824** safer chemicals that meet Safer Choice Criteria
- Continually expanding by ~100 chemicals/year
- Uses
 - Research whether proposed formulations might be eligible for Safer Choice
 - Sustainable chemistry measure for products not carrying the Safer Choice label
 - Highlight innovation and meet demand for safer chemicals

www.epa.gov/saferchoice/safer-ingredients

Recent Improvements to SCIL



- Ability to search within the whole list or within a functional use class
- Ability to search by chemical name or CAS RN
- Easy access to Safer Choice criteria hyperlinked from each Functional Use

Recent Improvements to SCIL



- Safer Choice Home
- Learn About Safer Choice
 - Frequently Asked Questions
 - Resources for Manufacturers
 - Partner of the Year Awards
- Search Safer Choice Products
- For Use in Your Community
- Safer Chemical Ingredients List
- How to List on SCIL
- Safer Choice Standard and Criteria
- Related Programs
 - DfE Alternatives Assessments
 - DfE Life-Cycle Assessments
 - DfE Workplace Best Practices
 - DfE for Pesticides
- Safer Detergents Stewardship Initiative
- Program History
- Connect with Safer Choice

You are here: EPA Home » Safer Choice » Safer Chemical Ingredients List

Safer Chemical Ingredients List

On this page:

- [Safer Chemical Ingredients List](#)
- [Overview of the Safer Chemical Ingredients List](#)
- [Technical notes about the list](#)
- [Additional resources](#)

Related Information

For chemical manufacturers and raw material suppliers looking for information on how to list a chemical on the Safer Chemical Ingredients List (SCIL), [visit our step-by-step guide](#).

A downloadable spreadsheet of the [Safer Chemical Ingredients List](#) (14 pp, 407 K) is also available. ([Download Excel Viewer](#)) ^{EXR} See the "Updates" tab in the Excel spreadsheet for recently added and/or updated chemicals.

Safer Chemical Ingredients List

◆ Search: Name or CAS RN

[Clear Options](#)

Emollients

Note: When a functional use category is selected, the search above will only apply to the chemicals assigned to this functional use. To select a different functional use, please [scroll up](#).

Show entries

Code	Common Name	CAS Registry Number	Functional Use
●	Cocoa butter	8002-31-1	Emollients; Skin Conditioning Agents
●	Cuburbita pepo seed oil	8016-49-7	Emollients; Skin Conditioning Agents
●	Dipropylene glycol dibenzoate	27138-31-4	Emollients; Skin Conditioning Agents
●	Fats and Glyceric oils, sesame	8008-74-0	Emollients; Skin Conditioning Agents
●	Glycerides, C16-18 and C18-unsatd. mono-	91744-09-1	Emollients

- The listed chemicals are safer alternatives, group
- Chemicals are marked as a ● green circle, ● red circle, or ● yellow circle
- This list includes many of the chemicals evaluated for TSCA. Some are confidential chemicals. There may be chemicals not on this list.
- Some of the listed chemicals may not be on the TSCA inventory for TSCA uses. Those considering TSCA uses for their chemicals should consult an authorized TSCA consultant. Chemicals not listed on the TSCA inventory may be added upon clicking the hyperlinked CAS RN in the table.

◆ Please Select: [All Functional Use Classes](#)

◆ or Select a Functional Use Class:

- [Antimicrobial Actives](#)
- [Chelating Agents](#)
- [Colorants](#)
- [Defoamers](#)
- [Emollients](#)
- [Enzymes and Enzyme Stabilizers](#)
- [Fragrances](#)

Additions to SCIL



- 100 new chemicals, including:
 - 35 new Surfactants
 - 13 new Solvents
 - 9 new Processing Aids & Additives
- 2 new categories
 - Emollients
 - Skin Conditioning Agents

Plans for 2017



- 100 new chemicals
- Updated chemical classes
 - Assigning polymers to classes that describe their functionality
 - Separating Preservatives and Antioxidants into “Preservatives” and “Antioxidants”
 - Providing functional use information for chemicals currently listed as Uncategorized
- SCIL Chemical Re-reviews
 - Breakout session this afternoon

SCIL and CleanGredients



- SCIL
 - Broad set of chemicals listed by CAS RN
 - CAS RNs may cover a range of structures, some of which may not meet Safer Choice criteria (e.g., highly ethoxylated surfactants that are persistent)
 - Does not incorporate review of auxiliary chemicals and residuals in specific tradenames
 - Does not include manufacturer information
- CleanGredients
 - Subset of ingredients listed by tradename and manufacturer
 - Review for CleanGredients incorporates structure, auxiliary chemicals, and residuals



Expanding Outreach

November 15, 2016

A Family of Labels



epa.gov/saferchoice



epa.gov/dfsafersaferchoice

Optional Label for
Industrial &
Institutional Use



epa.gov/saferchoice

Fragrance-Free
Label

Outreach: Messaging



- Everyone wants products that are safer for families, pets, workers, communities, and the environment. Everyone wants a Safer Choice.
- The Safer Choice label is a trusted assurance from the U.S. EPA that products have been reviewed for performance and contain safer ingredients.



Spring Cleaning Campaign



- Consumer focused
- April 4-8 kick-off
- Primarily social media; reached over 1.5 million on Twitter
- Blogs, press release, state and retailer newsletters



Safer Choice Spring Cleaning Social Media & Videos



- Blogs
 - Administrator McCarthy's [Good news for our Health at Home - Safety Sells](#)
 - [Learn why one EPA mom is choosing Safer Choice](#)
- Social media posts & infographics **#EPASaferChoice**
 - Live twitter feed at www.epa.gov/saferchoice
- 30 second video
 - [Shopping for household products? Look for the Safer Choice Label](#)
- Short videos (15 seconds each)
 - [Washing hands](#)
 - [Mopping the floor](#)
 - [Cleaning glass](#)
 - [Spot cleaning](#)
 - [Carpet cleaning](#)
 - [Cleaning the kitchen counter](#)
 - [Doing laundry](#)



What are your options
for **safer cleaning?**

Look for the
SAFER CHOICE label.



#EPAsaferchoice

epa.gov/saferchoice

#EPASaferChoice



https://www.epa.gov/saferchoice

File Edit View Favorites Tools Help

Web Slice Gallery

Find Safer Products

- [Browse the Full Product Listing](#)
- [Find Safer Choices to Use in Your Community](#)

The Safer Choice Label

- [Learn About Safer Choice](#)
- [Partner of the Year Awards](#)
- [Resources for Manufacturers](#)
- [Safer Choice Standard](#)

Safer Chemical List

- [Safer Chemical Ingredients List \(SCIL\)](#)
- [How to List on SCIL](#)

Related Programs

- [Design for the Environment \(DfE\) Alternatives Assessments](#)
- [DfE Life-Cycle Assessments](#)
- [DfE Workplace Best Practices](#)
- [DfE for Pesticides](#)

#EPASaferChoice

EarthFriendlyProduct @EFPClean
Head out on a green chemistry lab tour w/ our Director of Product Development at bit.ly/2cP6Etl. #EPASaferChoice #ExpoEast #ECOS

ChemistrySelect Retweeted

U.S. EPA @EPA
Companies explain how #EPASaferChoice helped them switch to greener chemicals. #P2Week go.usa.gov/xZ2R4

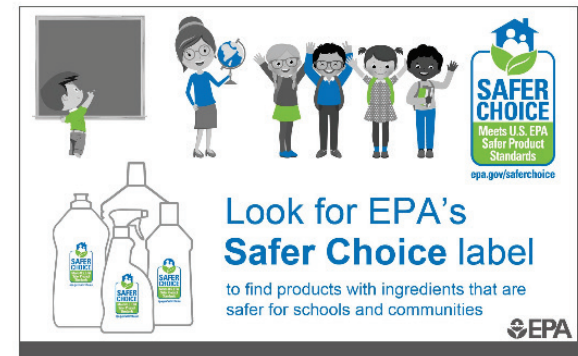
100%

8:28 AM

Safer Choice Back-to-School Campaign



- Addresses need for students to be present in a safe, healthy learning environment
- PSAs
 - Safer Choice-labeled Products in Action: [Cleaning a School Desk](#)
 - Safer Choice-labeled Products in Action: [Mopping a School](#)
- [Blog for Green Schools National Network](#)
- [Postcard](#)
- Social media, including [Facebook](#), Twitter, Pinterest and Instagram





More than 1,500
products for facilities
like schools, office
buildings & hotels
meet the criteria
for the Safer Choice
label.



Safer Choice Fact Sheets



- General Consumer
- Resources for Manufacturers
- Schools
- Fragrance Free
- Municipalities and Communities

Safer Choice Outreach



- Campaigns
- Webinars
- Conferences
- Email updates
- EPA Regions
- Safer Choice widget



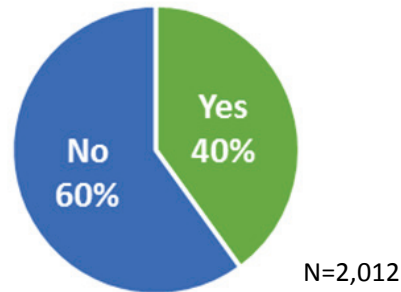
Survey of Consumer Awareness



In a survey of 2,000+ adult U.S. residents in February 2016:

- 40% of consumers reported familiarity with the program

Are you familiar with a labeling program implemented by EPA that enables consumers to select products...safer for people, families, and pets?

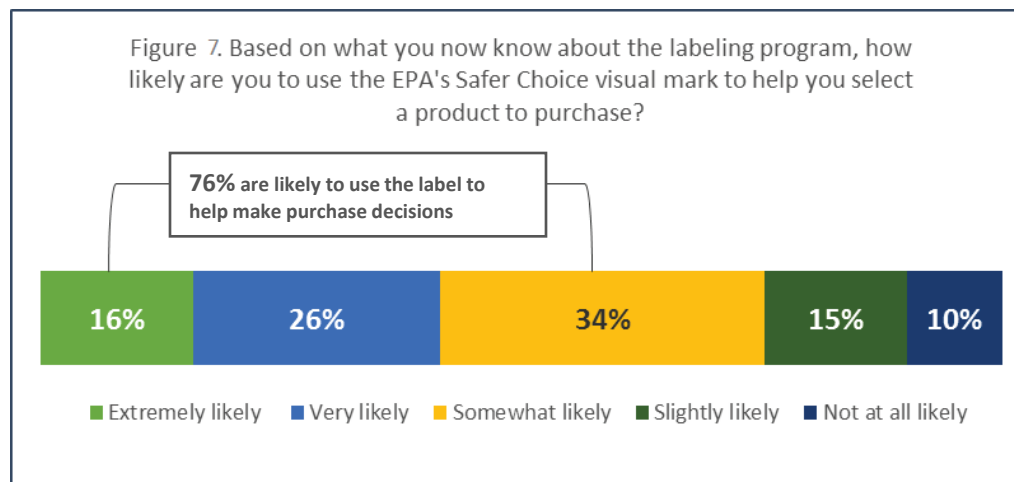


- 35% of consumers say they have seen the Safer Choice label on store shelves

Consumer Desire to use Safer Choice



- **76%** of consumers... responded that they would use the Safer Choice label to inform purchasing decisions
 - **83%** of parents...
 - **86%** of millennials...



Safer Choice Outreach 2017



- Pet products
- Spring cleaning
- I & I sector in late summer/fall
- Other ideas?

Questions or Comments?



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Safer Choice Community Breakout

Aly Lorenz, Safer Choice Program
November 15, 2016

Safer Choice Community



- New data system for Safer Choice submissions and program management
- Partner and supplier communities opened in January 2016
- Meets standards for data security
 - FedRamp certified and NIST 800 compliant
- Partner community
 - Submit for quotes, initial reviews, reformulation reviews, and renewal reviews
- Supplier community
 - Submit for CleanGredients and/or SCIL review
 - Provide information on ingredients in support of product review

Community Benefits: Submissions



- Community helps with data entry
 - Required fields are in red text
 - List of missing information before you submit
 - Error messages when data is in the wrong format
- Ability to clone products and ingredients
 - Avoid duplicate data entry
- View all information submitted to Safer Choice in one place

Community Benefits: Status



- Provides status updates for submissions
 - Third party profiler status
 - Safer Choice status
- Provides timing information
 - Date initially submitted
 - Date of last status update
- Increased process transparency
 - Tells you where to call for updates

Community Benefits: Resources



- Tips for using the Community
- Links to helpful documents (standard, guidance, etc.)
- Checklists of information needed for each type of submission
- Phone number to call for help

Brand New Features



- Private label product listing
- Private label submissions
 - Submit directly to Safer Choice
- Introductory videos
 - Partner Community
 - Supplier Community
- Audit and renewal reminder emails

Community Breakout: Questions



1. What do you like about the Safer Choice Community? How did the Community improve your experience submitting products or ingredients?
2. What improvements would you like to see to the current functionality in the Community?
3. Do you have suggestions for new functionality for the Community?
4. What metrics would be most helpful for product manufacturers, chemical manufacturers, and others?

Community Breakout: Background



- Product Review Statuses:
 - Submitted to third party profiler for review
 - Information received by third party profiler
 - Waiting for supplier responses
 - Third party profiler review initiated
 - Third party profiler review complete
 - Submitted to Safer Choice
 - Safer Choice review complete, see feedback email for outstanding issues
 - Product added/renewed



SCIL Chemical Re-Reviews Breakout

Safer Choice Summit, November 2016
Clive Davies, Cathy Rudisill, and Jay Tunkel

SCIL Re-reviews



- Periodic review of chemicals listed on SCIL
 - Collaborate with stakeholders
 - Ensure up-to-date listings and geocodes
- Review by chemical class
 - Up first: surfactants and preservatives
 - Surfactants have largest presence on list
 - Preservatives are a challenging area for green chemistry

SCIL Re-reviews



- Process:
 - Develop clusters by chemical structure
 - Gather and assess data
 - Engage with stakeholders
 - Fill data gaps
 - Leverage expertise
 - Update SCIL
- We want your feedback

SCIL re-reviews



- Maintain a list that is based on up-to-date reviews – approx. every 3 years
- Begin with surfactants and preservatives
- Surfactants have largest presence on list and in Safer Choice products
- Preservatives are challenging area for green chemistry

Safer Choice Surfactants Criteria



Standard Surfactant Criteria

Acute Aquatic Toxicity (L/E/IC50 Value) ¹	Rate of Biodegradation
≤1 ppm	May be acceptable if biodegradation ² occurs within a 10-day window without products of concern ³
>1 ppm and ≤10 ppm	Biodegradation ² occurs within a 10-day window without products of concern ³
>10 ppm	Biodegradation ² occurs within 28 days without products of concern ³

1. In general, there is a predictable relationship between acute aquatic toxicity and chronic aquatic toxicity for organic chemicals (i.e., chemicals that have high acute aquatic toxicity also have high chronic aquatic toxicity). Since acute aquatic toxicity data are more readily available, the Safer Choice Criteria use these data to screen chemicals that may be toxic to aquatic life (see Sections 5.9 and 6.8 of the [Safer Choice Master Criteria for Safer Ingredients](#)).

2. Generally, >60% mineralization (to CO₂ and water) in 28 days (see Sections 5.9 and 6.8 of the [Safer Choice Master Criteria for Safer Ingredients](#)).

3. Products of concern are compounds with high acute aquatic toxicity (L/E/IC50 =10 ppm) and a slow rate of biodegradation (greater than 28 days).

AND...if one component fails, the mixture fails

DfE's "B-Safer" DB



CASRN	334-48-5	143-07-7	544-63-8	544-64-9	373-49-6
Chemical	Capric acid (C10)	Lauric acid (C12)	Myristic acid (C14)	Myristoleic acid (C14, 1 unsaturation)	Palmitoleic acid (C16 unsaturation)
Molecular Weight	172.27	200.32	228.38	226.38	254.42
Status					
Date Completed					
Geocode	●	●	●	●	
Recommended Geocode					
Master Criteria	P	P	P	P	
Chelators					
Solvents					
Surfactants					
Fragrances					
ETF	P	P	P	P	P
Direct Release	P	P	P	P	P
Human Health	P	P	P	P	P
Acute Toxicity	P	P	P	ND	P
Reproductive	P	P	P	ND	P
Developmental	P	P	ND	ND	P
Repeated-Dose	P	P	P	ND	P
Carcinogenicity	DNF	P	DNF	DNF	DNF

Speaker Introduction



Technical support to DfE under contract (~18 years)

Company	Chemical ¹	% in Formulation ²	Human Health Effects						Ecotoxicity		Environmental		Potential Routes of Exposure						Reactive or Additive?			
			Cancer Hazard	Skin Sensitizer	Reproductive	Developmental	Neurological	Systemic	Genotoxicity	Acute	Chronic	Persistence	Bioaccumulation	Worker			General Population					
														Inhalation	Dermal	Ingestion	Inhalation	Dermal		Ingestion	Aquatic	
Albemarle	ANTIBLAZE 180 and ANTIBLAZE 195																					
	Tris (1,3-dichloro-2-propyl)Phosphate CAS # 13874-87-8	95%	M	L	M	M	L	M	M	M	M	M	L	N	Y	Y	N	Y	Y	Y	Y	Additive
Albemarle	ANTIBLAZE 182 and ANTIBLAZE 205																					
	Proprietary A Chloroalkyl phosphate (1)		M	L	M	M	L	M	M	M	M	M	L	N	Y	Y	N	Y	Y	Y	Y	Additive
	Proprietary B Aryl phosphate		L	L	M*	M*	M*	L	H	H	L	M	N	Y	Y	N	Y	N	N	N	N	Additive
	Triphenyl Phosphate CAS # 115-98-6		L	L	L	L	M	L	H	H	L	L	Y	Y	Y	Y	Y	Y	Y	Y	Y	Additive
Albemarle	ANTIBLAZE V500																					
	Proprietary C Chloroalkyl phosphate (2)		M	M	M*	M*	L	M	L	M	M	M	L	N	Y	Y	N	Y	Y	Y	Y	Additive
	Proprietary B Aryl phosphate		L	L	M*	M*	M*	L	H	H	L	M	N	Y	Y	N	Y	N	N	N	N	Additive
	Triphenyl Phosphate CAS # 115-98-6		L	L	L	L	M	L	H	H	L	L	Y	Y	Y	Y	Y	Y	Y	Y	Y	Additive

EPISuite[™] Enter CAS RN, Name, or SMILES Submit Draw Clear

CAFFEINE
1H-Purine-2,6-dione, 3,7-dihydro-1,3,7-trimet
hyl-

CAS RN: 58-08-2
Formula Weight: 194.19
SMILES: CN1C(=O)N(C)c2ncn(C)c2C1(=O)

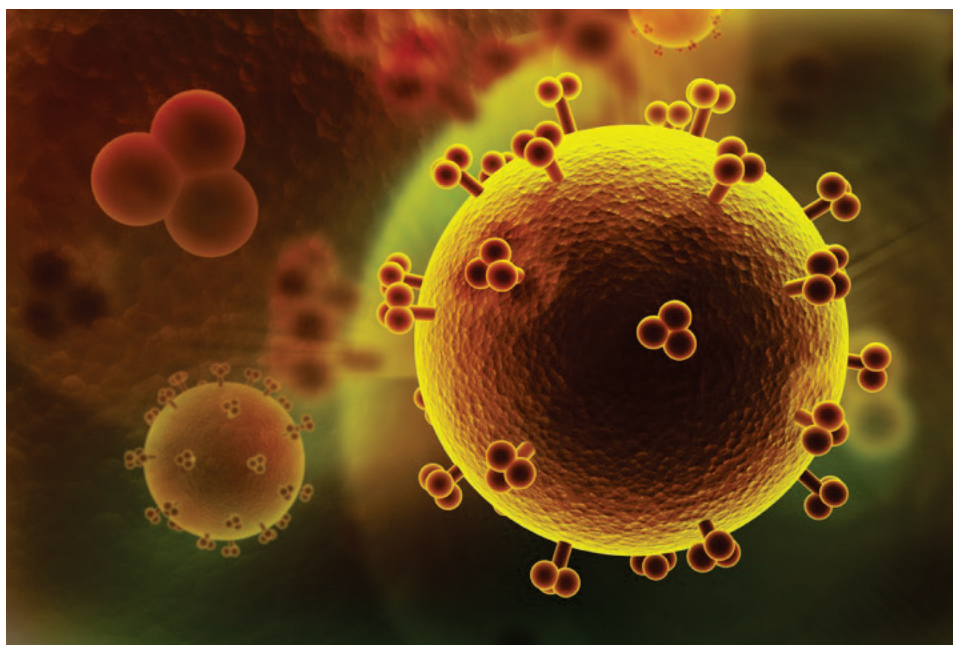
log K_{ow}: 0.16
Wsol_{mg/L}: 1,674⁺
log BCF: 0.50
log BAF: -0.91

ECOSAR

Submit Cancel

Update and Modernization of EPI Suite[™] and ECOSAR

Preservatives



What's Being/Been Evaluated



CAS	List Name
2682-20-4	Methyl isothiazolinone
26172-55-4	Methyl chloro isothiazolinone
24634-61-5	Potassium (E,E)-sorbate
590-00-1	Potassium sorbate
110-44-1	Sorbic acid
	Pentaerythritol, tetrakis(3,5-di-tert-butyl-
6683-19-8	4-hydroxyhydrocinnamate)
582-25-2	Benzoic acid, potassium salt
532-32-1	Benzoic acid, sodium Salt
137-40-6	Sodium propionate
520-45-6	Dehydroacetic acid
79-33-4	L-Lactic acid
6132-04-3	Sodium citrate, dihydrate
122-99-6	Phenoxyethanol
64-18-6	Formic acid
68-04-2	Sodium citrate, anhydrous
2634-33-5	1,2-Benzisothiazol-3(2H)-one
7681-57-4	Disulfurous acid, disodium salt

Hazard profile completed

Hazard profile under development

What's Not Being Evaluated



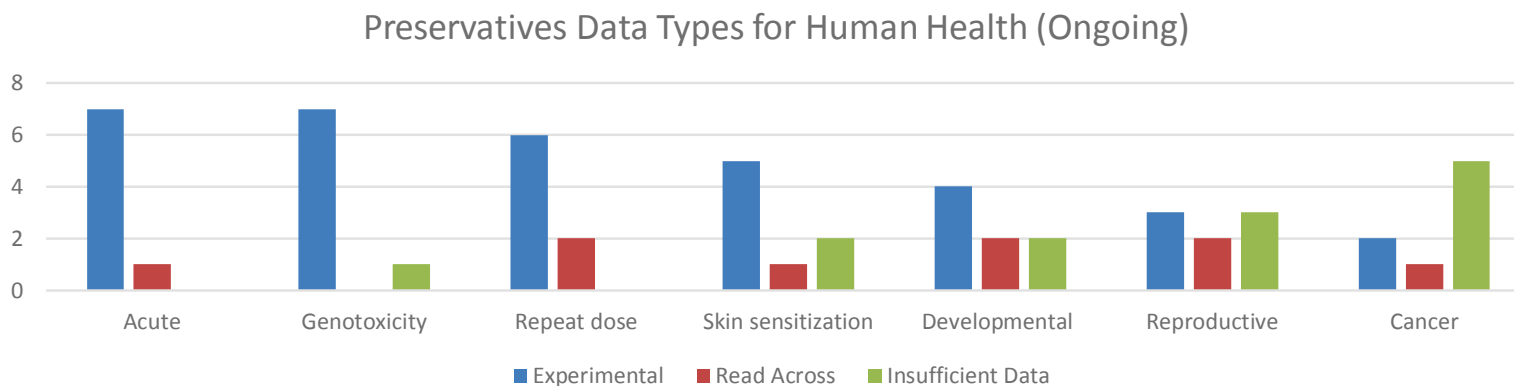
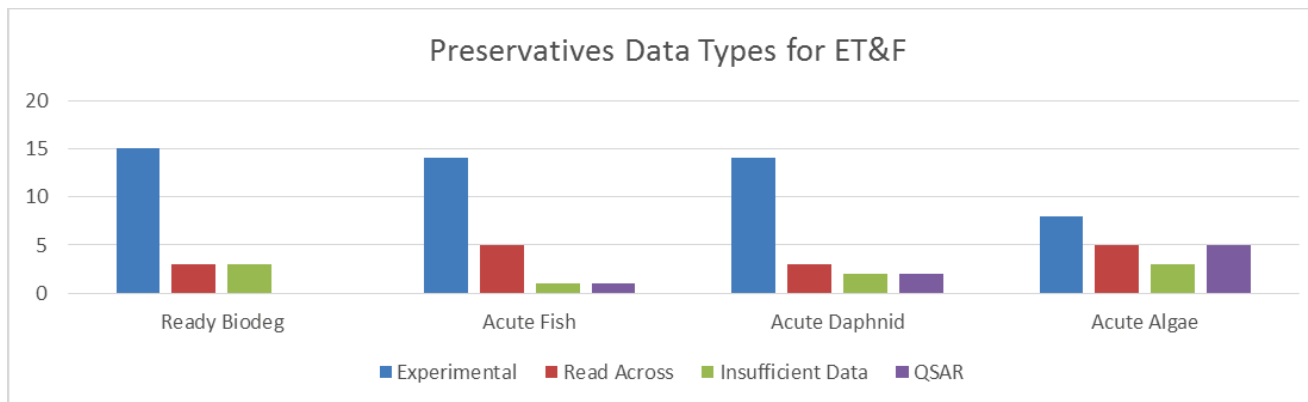
CAS	List Name
137-66-6	Ascorbyl palmitate
7492-55-9	Calcium sorbate
1117-86-8	Caprylyl glycol
91052-16-3	Hydrogenated palm glycerides citrate
112-38-9	Undecylenic acid
10377-60-3	Magnesium nitrate
13446-18-9	Magnesium (II) nitrate, hexahydrate
7631-99-4	Sodium nitrate
59-02-9	alpha-Tocopherol
10191-41-0	DL-alpha-Tocopherol
58-95-7	Vitamin E acetate
7695-91-2	Tocopherol acetate

Added in FY2016

Stabilizers

Tocopherols

Preliminary Results



Surfactants Re-Review



Cathy Rudisill, SRC

Surfactants - Approach



Clustering

- SCP Surfactants (SCIL, analogs, others) (>300)
- Software: ChemACE
- Expert knowledge

Assessment

- Conduct full evaluation under SCP Master Criteria
- Evaluate additional analogs/ adjust clusters if necessary
- Make recommendations for SCIL

Decision-making

- Conclude whether current data set supports current listings or new listings
- Determine how data availability can inform potential criteria updates.

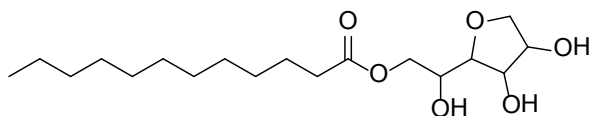
~30 Surfactant clusters



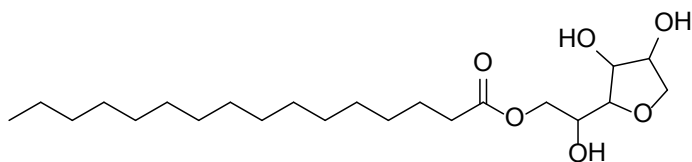
Cluster Name	#
Sorbitan esters	5
Amine oxides	9
Glucosides	17
Amidopropyl betaines	8
Glycerides	12
Lactylates	1
Ester quats	4
DEEDMAC ester quats	2
Benzenesulfonate hydrotropes	4
Quaternary ammoniums	3
Linear alkylbenzene sulfonates	18
Alkyl sulfates	13
Fatty acids/salts	25
beta-Alanines	7
Betaines	6
Alkyl sulfonates	5

Cluster Name	#
Polysorbates	5
Imidazoles	5
Glycines	4
Glutamates	3
Hydroxysultaines	3
N-oxide amides	3
Sulfonated fatty acid esters	3
Sulfosuccinates	2
Alkyl pyrrolidones	2
Diethylenetriamine derivs.	2
N-(2-hydroxyethyl)-alkanamides	2
Sulfated triglycerides	2
Sulfoethyl esters	2
Hydrotropes - carboxy cyclohexenyls	2
Orphans (Unclustered)	29
Ethoxylated surfactants	74

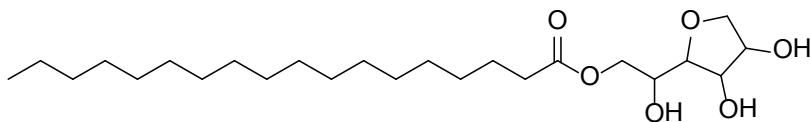
Example Sorbitan Esters



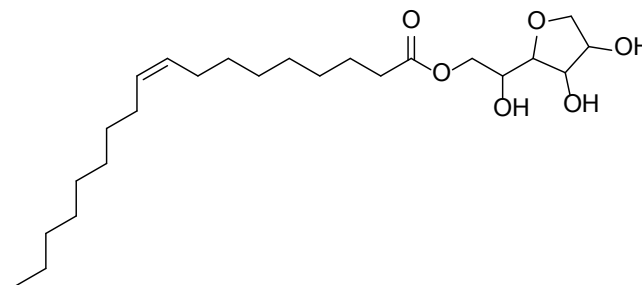
Sorbitan monoaurate
CAS RN 1338-39-2



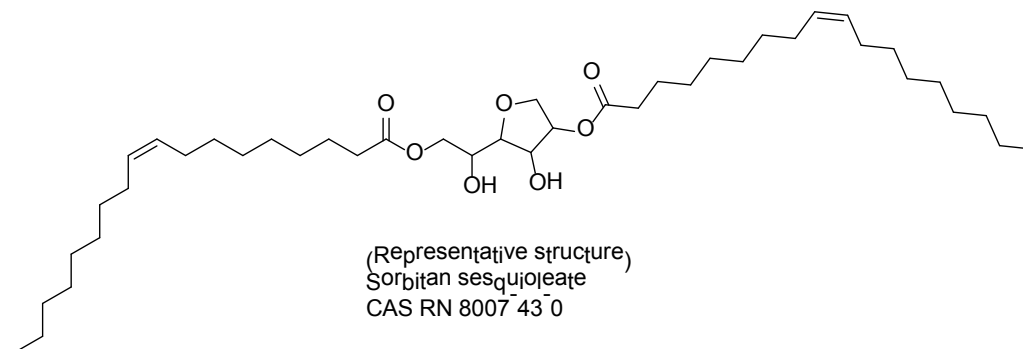
Sorbitan monopalmitate
CAS RN 26266-57-9



Sorbitan monostearate
CAS RN 1338-41-6



Sorbitan monooleate
CAS RN 1338-43-8



(Representative structure)
Sorbitan sesquioleate
CAS RN 8007-43-0

Example Sorbitan Esters



MW (g/mol)	346.5	402.6	430.6	428.6	693.1
Carbon chain	C12	C16	C18	C18:1	C18:1*
CA SRN	1338-39-2	26266-57-9	1338-41-6	1338-43-8	8007-43-0
Chemical	Sorbitan monolaurate	Sorbitan monopalmitate	Sorbitan monostearate	Sorbitan monooleate	Sorbitan sesquidecate
Acute	<ul style="list-style-type: none"> >5 mg/L Rat 	<ul style="list-style-type: none"> >5000 mg/kg Mouse 	<ul style="list-style-type: none"> >2000 mg/kg Rat 		<ul style="list-style-type: none"> >5000 mg/kg Rat
Repeat Dose	<ul style="list-style-type: none"> 2200 mg/kg/d Rat 13wk 		<ul style="list-style-type: none"> 1000 mg/kg/d Rat 42d 	<ul style="list-style-type: none"> 1850 mg/kg/d Rat 16wk 	
Reproductive			<ul style="list-style-type: none"> 5000 mg/kg/d Rat 3 gen 		
Developmental			<ul style="list-style-type: none"> 1000 mg/kg/d Rat 1gen 		
Genotoxicity	-		+		-
Cancer			<ul style="list-style-type: none"> Mouse 		
Skin Sensitization			<ul style="list-style-type: none"> Guinea Pig 		
Neurological					

Data Availability



How often are we using read across/QSARs?

Which endpoints are less likely to have data?

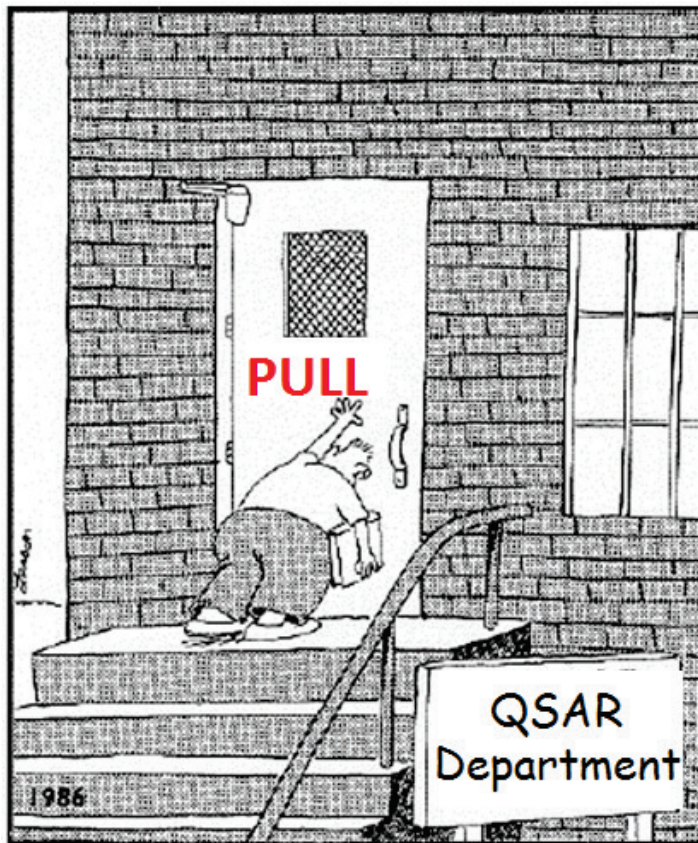
How can these assessments inform potential criteria updates?

Initial Observations



- Continuing challenges in regards to:
 - Availability of quality, measured data
 - ~30% of assessments are relying solely on experimental data from the REACH database to evaluate an endpoint.
 - Test substance identification:
 - Variable mixtures, active ingredients, naturally-derived substances --> complicates read across and estimations
 - Common names causing confusion, reported inconsistently across multiple sources
 - **Ethoxylated surfactants**
 - Lack of key details
 - 10-day window measurements in ready biodegradation tests
 - Toxicological conclusions disclosed rather than observations
 - How to include predictive tox methods:
 - High Through-Put Screening Data (endocrine, skin sensitization?)

Polyethoxylates

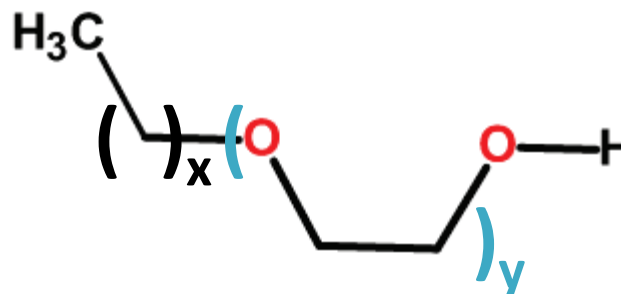


Jay Tunkel

“Polyethoxylates” - Overview



- Commonly used as nonionic surfactants, solvents, and other surface active agents
- Represent ~24% of all SCIL-listed surfactants, or ~7.5% of the entire list
- Mixtures
 - **Linear** and branched
 - Esters, phosphates, sulfates
 - Propoxylates, secondary alcohols
 - ...15 categories in SCIL



Polyethoxylates – Realities

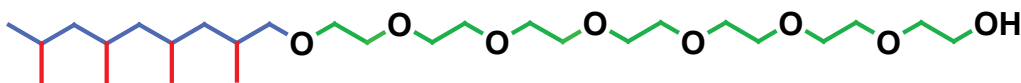
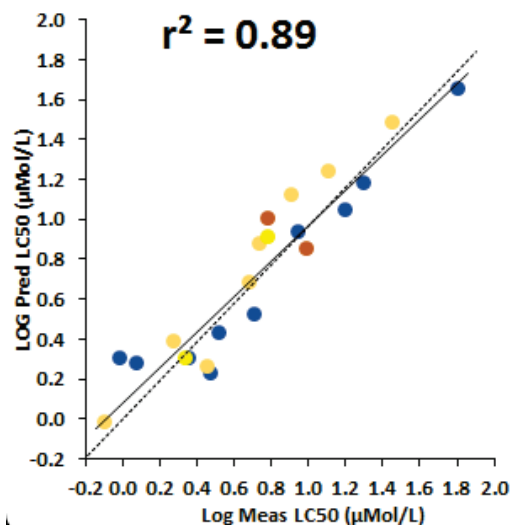


- Limited data
 - Properties, fate, ecotoxicity, human health
- Same CAS RN, different component concentrations
- Essentially no pure component data
 - DfE methodology strives to evaluate each component present in a mixture
- Available data on mixtures
 - Reaction products
 - Unknown and variable composition
 - Formulated materials
 - Impurities, coproducts, and byproducts
- Assessment methodology modeling **each** component and read-across

Better Fish Acute Modeling?



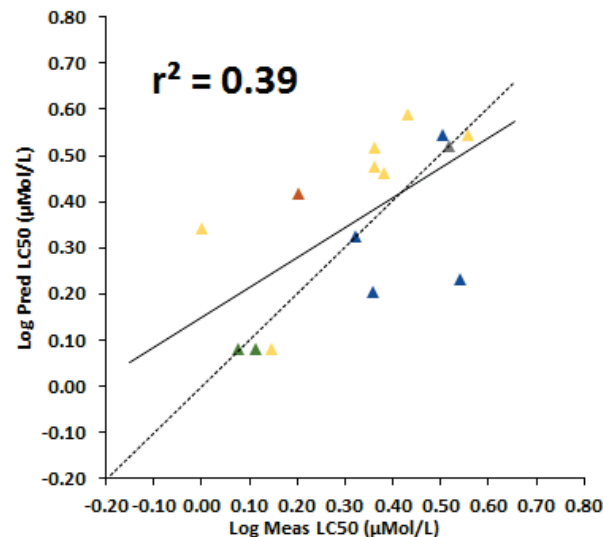
Remember: ECOSAR – Toxicity increases with Kow (up to Kow 6)



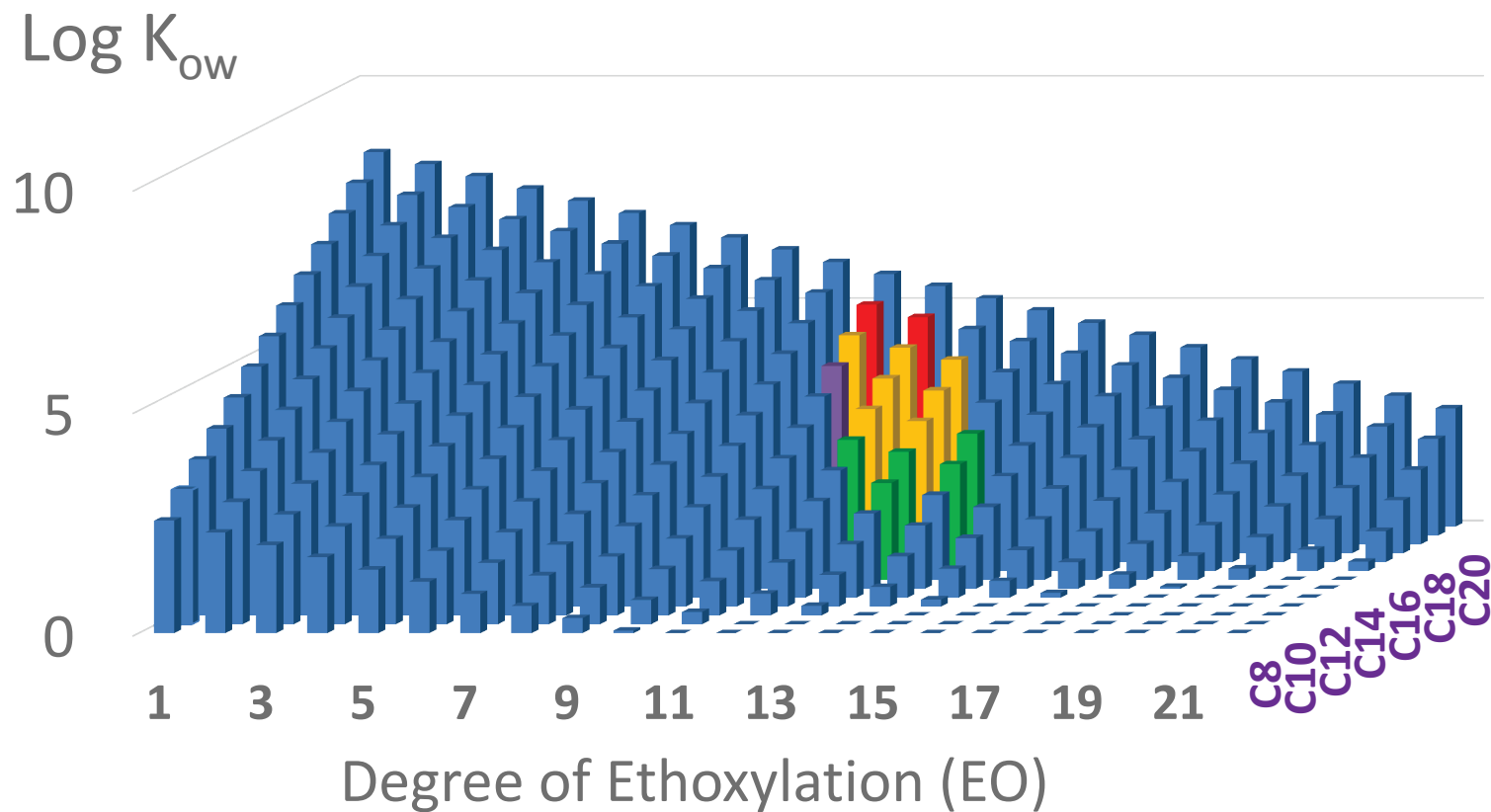
$$\log P + \# C - \# C - (\# \text{ branches}) \times 0.083 + \# \text{EO} \times 0.1$$

Validation Set (WS < 2 mg/L)

*Uses "average structures"



The Problem Space

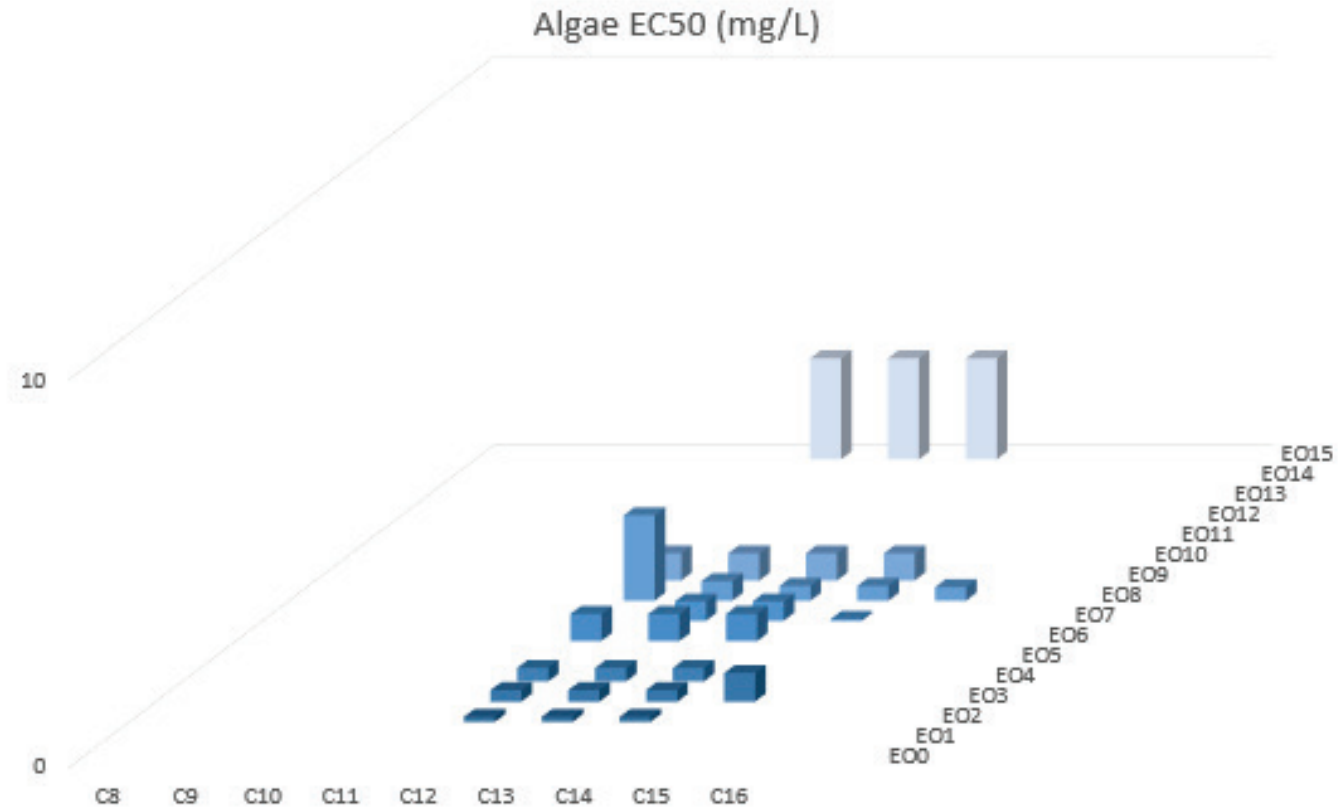


To the Safer Choice Data...

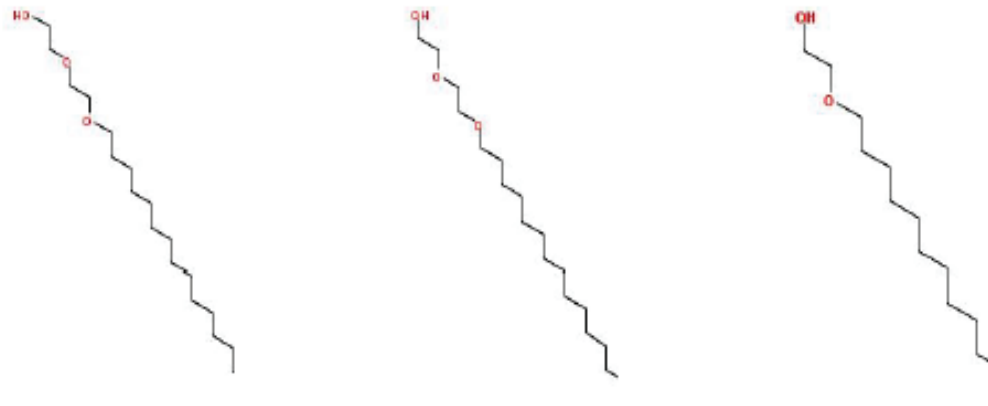


- Toxicity data
 - Collected during the re-review process
 - Composition data provided by stakeholders
 - Minimum # of EOs !
 - Maximum # of EOs !!
 - No similar data for alkyl chain length available???
- Endpoint data
 - Log K_{ow}
 - Toxicity
 - Other, e.g., critical micelle concentration

Algal Acute



ECCC Modeling Exercises



ID	68551122	68951677	69227210
SMILES	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCCCCCCOC
UserData1	ToxCast No data	ToxCast No data	ToxCast No data
UserData2	No SS, No DNACA	No SS, No DNACA	No SS, No DNACA
UserData3	Not bioavailable (lip.)	Not bioavailable (lip.)	bioavailable (lip.)

Identical results for derivative clusters, e.g. branched alkyl, sulfates, esters, and ethers

What is Next?



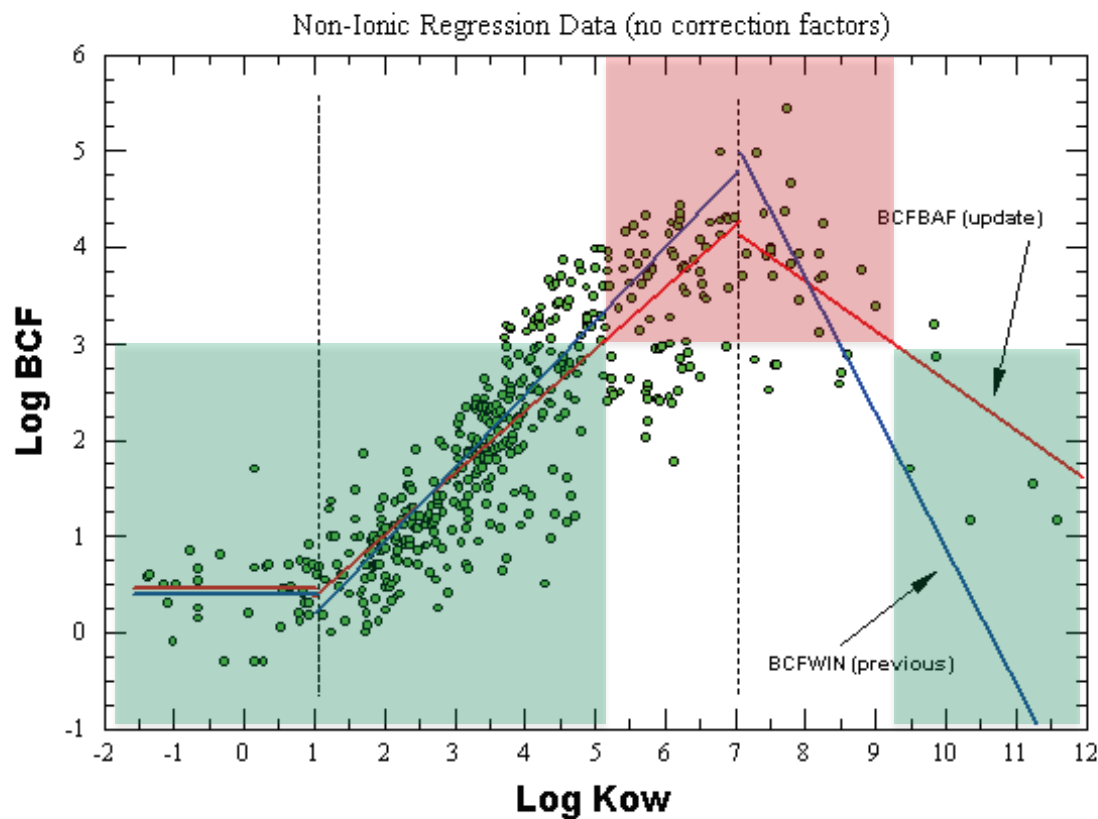
Perform **re-assessment** using Safer Choice 'conservative' methodology for mixture



Leverage stakeholder expertise

- Proprietary data will be protected
- Mixture composition
- Formulations
- Production processes
- CMCs (surfactancy)
- Non-standard test data
- Other expert stuff?

Estimating Bioaccumulation





Safer Choice Partner and Stakeholder Summit

Day 2

November 16, 2016

Summary of Day 1



- Improving Program Efficiencies
 - Safer Choice Community
 - Enables teamwork
 - Desire for how-to on the Community
 - New functionality (e.g., ingredient library, desire to upload formulation information, automated emails)
 - Metrics for product review timing
 - Improving communication
 - Safer Choice Stakeholders saw a need for:
 - Single point of contact at chemical suppliers
 - More global awareness of Safer Choice among suppliers
 - Need solutions to address the challenging nature of discussions about proprietary ingredients that do not meet criteria

Summary of Day 1 (cont.)



- Enhancing the SCIL
 - Making supplier information available for all SCIL chemicals
 - E.g., expanding CleanGredients coverage
 - Assessing value of listing on SCIL and CleanGredients
 - Importance of communication about chemicals that no longer meet Safer Choice criteria
 - SCIL chemical re-reviews
 - Summarize priorities
 - Explain the state of our knowledge
 - Assess data needs

Summary of Day 1 (cont.)



- Expanding Outreach:
 - Consumer: need to engage
 - Marketing and sales experts
 - Families and millennials
 - EJ communities
 - Business Case
 - Track consumer awareness of the label
 - I&I: need to engage
 - Institutional purchasers and distributors
 - Federal marketplace
 - Advocates

Day 2



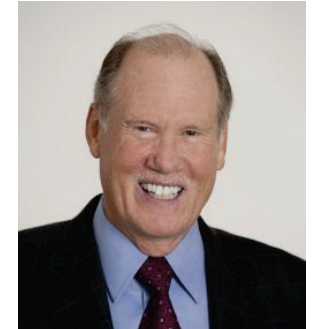
Sessions include:

- Opening New Product Sectors
- Cultivating the Safer Chemistry Supply Chain
- Ask Me Anything: Working with Third-Party Profilers
 - NSF
 - ToxServices

Opening New Product Sectors



Moderator: Roger McFadden, McFadden and Associates



Goal: Discuss newer existing product sectors and what has worked well; discuss ideas for potential new product sectors and obtain input on which should be highest priority

- Which sectors can be most successful?
 - Consumers
 - Market participants
- Understanding the success of some new sectors and exploring barriers where we've encountered them

Cultivating the Safer Chemistry Supply Chain



Moderator:

Bryan McGannon, American Sustainable Business Council



Goal: Explore incentives for driving sales of safer ingredients

- Innovative safer chemistry: brief case studies
 - Some successes, but they are qualified
- Discussion of barriers and solutions

Ask Me Anything: NSF



- Amber Dzikowicz
- Nancy Linde
- Jenny Oorbeck



Ask Me Anything: ToxServices



- Emily Golden
- Erica Harriman
- Meg Whittaker





Opening New Product Sectors

Melanie Adams
November 16, 2016

Safer Choice-labeled Products



www.epa.gov/saferchoice/products

- List of qualified products
 - Updated every two weeks
 - ~**2,030** recognized products
 - **>370** consumer & retail
 - **>1,350** industrial & institutional
 - **>300** both consumer and industrial & institutional



Safer Choice Product Types



■ Facility/Household Cleaning

- All-Purpose Cleaners
- Appliance Cleaners
- Automatic Dishwasher Products
- Biological Based Products
- Carpet Cleaners
- Degreasers
- Descalers
- Dish Soaps
- Dry Erase Board Cleaners
- Floor Care Products
- Granite/Stone Cleaners
- Jewelry Cleaners
- Kitchen/Countertop Cleaners
- Laundry Products
- Leather Cleaners
- Medical Instrument Cleaners
- Metal Cleaner/Polishes
- Odor Removers
- Oven/Grill/Barbeque Cleaners
- Pet Care Products
- Stainless Steel Cleaners
- Toilet Bowl Cleaners
- Tub/Tile Cleaners
- Upholstery Cleaners
- Window/Glass Cleaners
- Wood Cleaners

Safer Choice Product Types (cont.)



- **Health & Beauty**
 - Hand Soaps

- **Automotive & Outdoor**
 - Aircraft Cleaning Products
 - Athletic Field Paint
 - Car Care Products
 - Deicers
 - Dust Control Products
 - Graffiti Removers
 - HVAC Maintenance
 - Marine/RV Cleaners
 - Outdoor Furniture Cleaners
 - Parts Washers
 - Tire Additives

The DfE for Antimicrobial Pilot Project



Pilot project with EPA's Office of Pesticide Programs (OPP) to recognize pesticide products such as disinfectants and sanitizers

- Created in 2009; Extended to May 3, 2017
- Current actives:
 - Lactic acid, citric acid, hydrogen peroxide (added in 2009)
 - Ethanol and isopropanol (added in 2012)
 - Peroxyacetic acid and sodium bisulfate (added in 2015)
- >25 products have met the criteria and may use the DfE label
- Project webpage with the list of qualifying products:
<http://go.usa.gov/3JqzR>

Potential New Sectors



- Arts & Crafts
- Home Improvement Products
- Lubricants (food grade, marine, etc.)
- Paints & Coatings
- Others?

Steps to Open a New Sector



- Review the list of product categories to determine if your product represents a new category or might fit within a current category.
- Contact Safer Choice directly to discuss the potential new sector and conduct a pre-screen of the chemistry.
- Establish a context for the product and ingredients: key to understanding why a formulation is safer, environmentally preferable, and merits carrying the label and opening the sector.
- Next, Safer Choice would ask the interested potential partner to work with a TPP to have the candidate product's chemistry profiled (normal review) and to establish the context in which to evaluate the formulation.
- Moving into new sectors may require: a Scoping Paper to better understand the conventional chemistry and typical uses; adding a new Specialized Industrial Product category; or, a change to the Safer Choice Standard.

Some Key Considerations for Opening a New Sector



- Conventional products contain potentially problematic ingredients;
- Conventional products are in widespread use, lead to significant exposures and releases;
- Innovative product has safer ingredients;
- Innovative product performs on par with or better than the conventional; and
- Manufacturer of innovative product is committed to Safer Choice goals.

Questions?



Melanie Adams

Adams.Melanie@epa.gov

(202) 564-1843