Safer Ingredients for Formulated Products

Fall TURA Continuing Education Conference

Nov 13, 2018

TURI
TOXICS USE REDUCTION INSTITUTE
UMASS LOWELL

Session agenda

- Learning Objectives
- EPA Safer Choice Program
  - Clive Davies, US EPA
- CleanGredients
  - Elizabeth Ritch, Greenblue
- Group activity
- Wrap up
  - Other tools and resources
  - Observations by Martin Wolf, Seventh Generation

Learning Objectives

- Understand where to find information on safer ingredients for formulated products
- Understand criteria for what these systems consider a safer alternative
- Be ready to use the databases and tools by doing practice exercises

How does this session relate to TUR Planning?

Assist with:

- Options Identification
- Options assessment

TUR Planning for **listed** chemical ingredients in formulated products, e.g.,

- Sodium hypochlorite
- Sulfuric acid, hydrofluoric acid, hydrochloric acid, phosphoric acid, acetic acid
- Ammonium bifluoride, ammonium fluoride
- Sodium hydroxide, potassium hydroxide
- Glycol ethers
- Nonylphenol ethoxylate surfactants (listed as of RY 2019)
- Dodecylbenzenesulfonic acid
- Triethanolamine dodecylbenzene sulfonate
- Sodium dodecylbenzene
- Methanol
- Diethanolamine
- Solvents: acetonitrile, toluene, xylene, acetone, DMF
- Sodium phosphate, tribasic

TUR Planning for **unlisted** chemical ingredients in formulated products, e.g.,

- Ammonium quarternary compounds
- Parabens, formaldehyde releasers, other preservatives
- Fragrances
- Corrosion inhibitors
- Triclosan, triclocarban, other antibacterials
- Fluorinated chemicals
- Boric acid


SAFER
CHOICE
Meets U.S. EPA
Safer Product
Standards


CLEANGREDIENTS®

Safer Chemical Ingredient List and CleanGredients Activity

Using Stepan Co. sample formulations:

- Economy touchless truck wash
  https://www.stepan.com/uploadedFiles/Literature_and_Downloads/Formulations/Vehicle_Care/StepanFormulation1108.pdf
- Truck wash ... w/ surfactants listed on cleangredients
  https://www.stepan.com/uploadedFiles/Literature_and_Downloads/Formulations/Vehicle_Care/StepanFormulation1106.pdf

1. Check both sources for primary surfactant and emulsifier ingredients

Safer Chemical Ingredient List and CleanGredients - example 2

Seventh Generation All Purpose Cleaner

Ingredients:

- Water
- caprylyl/myristyl glucoside (plant-derived cleaning agent)
  - Decyl / Undecyl Glucoside
- lauramine oxide (plant-based cleaning agent)
  - Lauryldimethylamine oxide CAS 1643-20-5
- sodium gluconate (plant-derived water softener)
- sodium carbonate (mineral-based alkalinity builder)
- benzisothiazolinone and methylisothiazolinone (synthetic preservatives)

Additional Resources for Safer Ingredients

- Chemsec Marketplace
- EWG
- Subsport
- GC3 Preservatives project

MARKETPLACE by chemsec

Quick search alternatives

Login / Register

Future-proof your business

Find safer alternatives to hazardous chemicals

Do you want to replace a chemical that is harmful to health or the environment with a better alternative? Search our database to find an alternative product from the suppliers presenting their offerings on the site. A quick and simple way to find the substitute you need.

Do you offer a safer alternative to hazardous chemicals? Show it on Marketplace.

At Marketplace you reach out to customers with an expressed interest in what you have to offer. And get a great opportunity to present your safe alternatives to harmful substances for a better future.

SIGN UP NOW

Discover alternatives

OC coalescing agents Unify® 270

OrganoComp™

OrganoComp; A green biocomposite for advanced applications

Alternative thermal paper - without developer

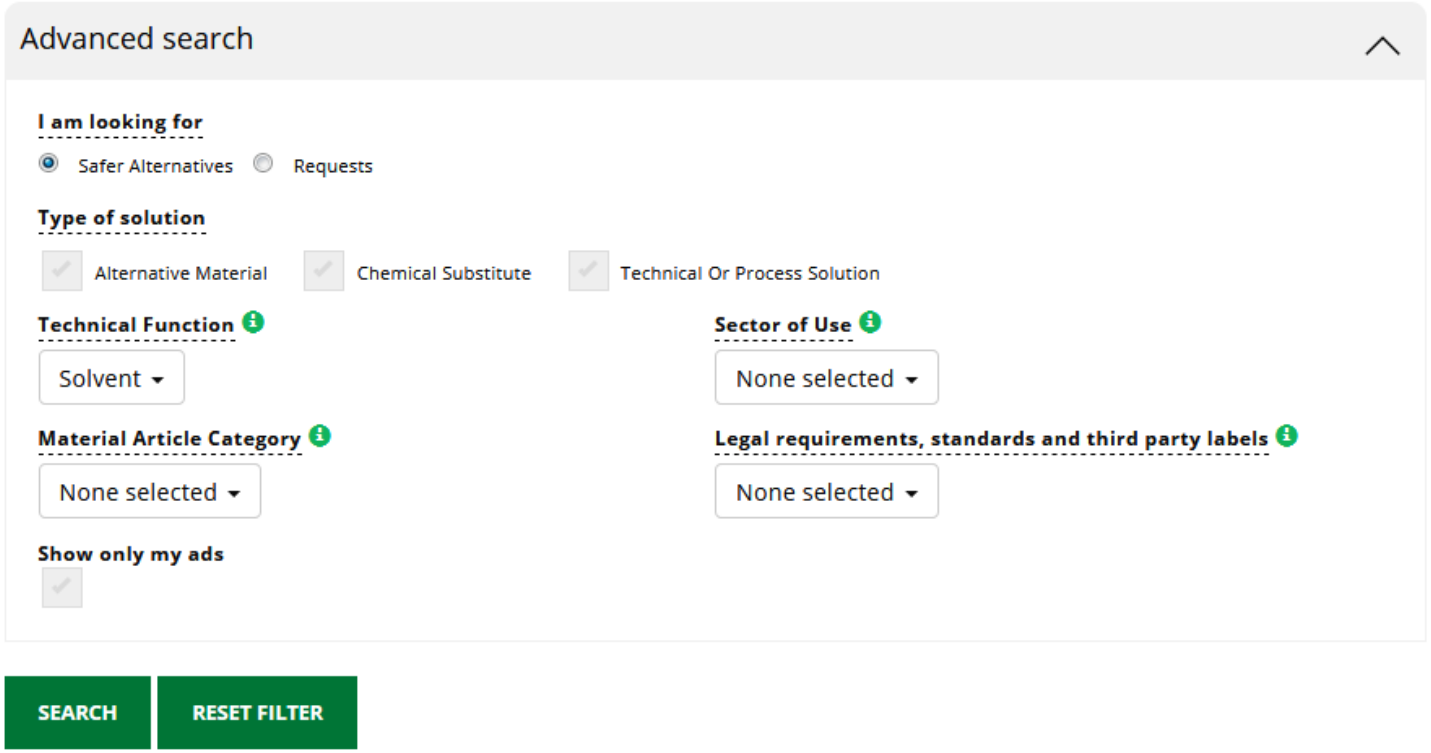
HeiQ Fresh Tech – Long-lasting odor control for textiles

circa

Cyrene a biobased alter NMP, DMF and similar s

Chemsec Marketplace

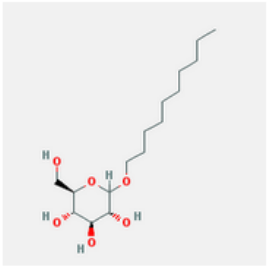
- https://marketplace.chemsec.org/



Environmental Working Group (EWG)

Know your environment. Protect your health.
ewg

EWG's Guide to Healthy Cleaning | Search more than 2,500 products | Search



See more:
- Evidence
- Products Listing It

DECYL GLUCOSIDE

B

Asthma/Respiratory		No Data, Some Concern
Skin Allergies & Irritation		Low Concern
Developmental & Reproductive Toxicity		Low Concern
Cancer		No Data, Some Concern
Environment		Low Concern

Top scoring factors: Low concern for biodegradation; damage to DNA; developmental/endocrine/reproductive effects

DECYL GLUCOSIDE can be found in 234 products.

Print | Share on:

Evidence

Health issue	Level of Concern	Source
The European Union Ecolabel program reports this substance is readily biodegradable.	low	Detergents Ingredients Database - EU Ecolabel
The European Union Ecolabel program reports this substance is anaerobically degradable.	low	Detergents Ingredients Database - EU Ecolabel

Sign up:

Want email updates about EWG's Guide to Healthy Cleaning, exclusive tips, action alerts, promotions to

EWG VERIFIED

Learn more about EWG's new mark to help you buy healthier personal care products!

EWG'S SKIN DEEP GUIDE TO COSMETICS

Rates 80,000 personal care products

SUBS PORT
Substitution Support Portal

MOVING TOWARDS SAFER ALTERNATIVES

Toggle menu

SUBSPORT - SUBSTITUTION SUPPORT PORTAL

Welcome to SUBSPORT the Substitution Support Portal!

Here you can find information to support your efforts in substituting hazardous substances. Enjoy exploring the portal and please do not hesitate to **contact** the project team for any comments or questions.

SUBSPORT is an ongoing project. Therefore we recommend to revisit the portal from time to time if you could not yet find the information you expected.

Latest News

GreenScreen® is 10 years old!

Publications & tools | 31.03.2017

GreenScreen® for Safer Chemicals

Search SUBSPORT

- Website
- Restricted and priority substances database» link
- Case story database » link

Search » Overview

Your contribution

Provide substitution examples

GC3 Preservatives Challenge

The GC3 is....

- A cross-sectoral, full value chain business membership organization
- A convener of collaborations to drive commercial adoption of green chemistry across all industries, sectors and supply chains.
- An advocate for government policy & funding that advances green chemistry R&D and innovation

Vision: A world where green chemistry is standard practice throughout the value chain.

Started in 2005

University of Massachusetts Lowell

GC3

GC3 Collaborative Innovation Project: Preservatives

Goal

To advance innovation and commercialization of novel, safe and effective preservative technologies for personal care and household products

Water-based consumer products require preservation to inhibit:

- Growth of bacteria, yeast and mold
- Odor
- pathogens

The need for new preservative technologies

- Regulatory restrictions; consumer, NGO, and retailer pressure have reduced the current palette of safe and effective preservatives available to formulators
- Too few effective preservatives used in products can increase sensitization and allergic reactions
- Formulators are seeking new, safe, and effective preservatives systems for use in their products to meet the diverse needs of their customers and other stakeholders
- Suppliers are seeking to expand their offerings

Collaborative Preservative Challenge

Approach

- Sought to identify a large and diverse pool of novel…
  - Early stage technologies - proof-of-concept
  - More mature technologies
  - From small companies, startups, universities, and individuals with promising ideas or technologies
- Facilitate partnerships with CPG companies and suppliers for evaluation, development, investment, commercialization & scale

Judging

48 Submissions

⇩

First Round of Judging

⇩

10 assessed for safety

Plant Extract	Chitosan	Bark Extract	Plant Extract	Bark Extract	Monoterpenoid Phenol	Bio-derived Chemistry	2 Part Reversible Complex	Chitosan	Small, Naturally Occuring Molecules
9	18A	19	22	24	29	35	38	46	65

⇩

7 semi-finalists assessed for performance: Stability and antimicrobial effectiveness

⇩

7 Awards

1. Oleoresin extract
2. Biosynthesized Glycolipid
3. Acetlyated Amino Acids
4. Reversible complex
5. Short chain chitosan
6. Carvacrol
7. Natural mushroom chitosan

GC3 Preservatives Challenge

Currently:

- Solvers, CPG companies and supplier sponsors in discussions and partnering
- GC3 supporting the 7 Finalists in their pursuit of customers, development & commercialization partnerships
- GC3 identifying and supporting new innovators with promising preservative technology
- Leveraging “infrastructure” developed in the project

- Reality Check
  - Martin Wolf – Seventh Generation
- Q&A