

Powering Platforms and Data Systems with Pharos

Michel Dedeo, PhD Healthy Building Network
Charlotte Brody, RN BlueGreen Alliance

6/26/20



Slides and recording will be posted to <https://pharosproject.net/tutorials>



MISSION

To advance human and environmental health by improving hazardous chemical transparency and inspiring product innovation



What you can do with Pharos

- Reduce business risk
 - Avoid restricted substances
 - Avoid substances of high concern
- Reduce uncertainty
 - Make informed decisions; see what is known and not known about your chemicals' hazard profiles
- Design for safety
 - Avoid regrettable substitutions
 - Select safer alternatives

Sign Up for Free

<https://pharosproject.net/>

Search Pharos

Try [Benzene](#) [50-00-0](#) [surfactant](#) [roofing](#)

About Pharos

Pharos provides hazard, use, and exposure information on 163,894 chemicals and 151 different kinds of building products.

Hazard Assessments

Certified GreenScreen assessments in the public domain or for sale.

Hazard Lists

Authoritative scientific lists for health and environmental hazards and restricted substance lists.

Common Products

Common contents and hazards of 151 different kinds of building products.

Data Services

Pharos data in bulk and expert analysis from HBN researchers.

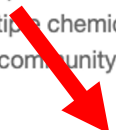
Join the Community

- Receive new updates when new hazards are added.
- Compare multiple chemicals
- Participate in community discussions

[Create New Account](#)

or

[Login](#)

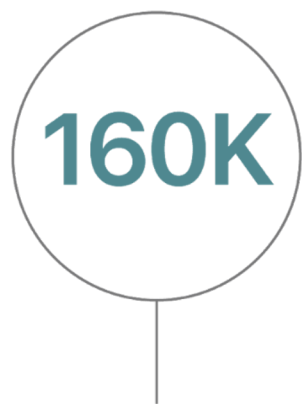


More Ways to Access Pharos Data

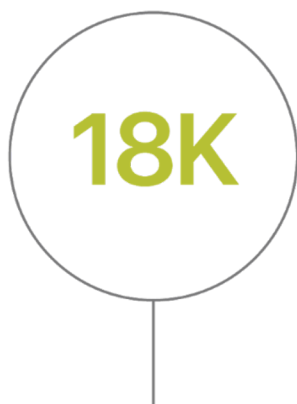
- Subscribe to a Professional or Enterprise account
- Connect your company's data system directly to live Pharos data via an Application Program Interface (API)
- Generate custom Data Downloads from our system to power your internal chemicals management programs

About Pharos

Comprehensive independent database of chemicals, polymers, metals and materials



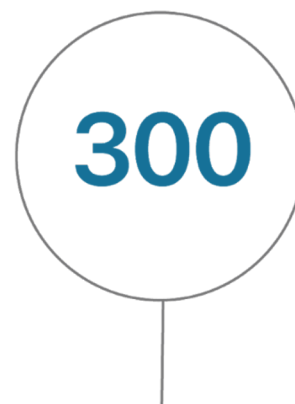
Chemicals, polymers, metals & other substances



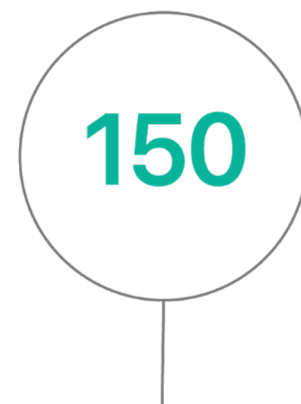
Chemicals with functional use data



Substances with process chemistry research



Full Green Screen Hazard Assessments



Building product type records with common and alternative content

Example of Hazard Data

Pharos

Comparisons

Common Products

Discussions

Account

8001-54-5

Benzalkonium chloride

ALSO CALLED [8045-21-4] ALKYL DIMETHYLBENZYLAMMONIUM CHLORIDE (primary CASRN is 8001-54-5), [12741-06-9] Benzalk...

View all synonyms (10)

Share Profile



Hazards

Properties

Functional Uses

Process Chemistry

Resources

All Hazards View

Show PubMed Results

Request Assessment

Add to Comparison

	GS Score	Group I Human					Group II and II* Human								Ecotox			Fate		Physical		Mult	Non-GSLT					
		C	M	R	D	E	AT	ST	ST	N	N	SnS	SnR	IrS	IrE	AA	CA	ATB	P	B	Rx	F	Mult	PBT	GW	O	Other	
All Hazards	LT-P1	-	-	-	-	-	vH	-	-	-	-	H	H-M	vH	vH	vH	-	M	-	-	-	-	H	-	-	-	-	R

Hazard Lists

Download Lists

ENDPOINT	HAZARD LEVEL	GS SCORE	LIST NAME	HAZARD DESCRIPTION	OTHER LISTS
Acute Mammalian Toxicity	vH	LT-UNK	GHS - Japan	Acute toxicity (inhalation: dust, mist) - Category 2 [H330]	+12
Skin Sensitization	H	LT-UNK	GHS - Japan	Skin sensitizer - Category 1 [H317]	+1
Respiratory Sensitization	H-M	LT-UNK	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced	+3
Skin Irritation/Corrosivity	vH	LT-UNK	GHS - Australia	H314 - Causes severe skin burns and eye damage	+4
Eye Irritation/Corrosivity	vH	LT-UNK	GHS - Japan	Serious eye damage / eye irritation - Category 1 [H318]	+2
Acute Aquatic Toxicity	vH	LT-UNK	GHS - Japan	Hazardous to the aquatic environment (acute) - Category 1 [H400]	+2
Terrestrial Ecotoxicity	M	NoGS	GHS - New Zealand	9.3B - Ecotoxic to terrestrial vertebrates	+1

Example of Functional Use Data

8001-54-5

Benzalkonium chloride

ALSO CALLED [8045-21-4] ALKYL DIMETHYLBENZYLAMMONIUM CHLORIDE (primary CASRN is 8001-54-5), [12741-06-9] Benzalk...

[View all synonyms \(10\)](#)

Share Profile



[Hazards](#) [Properties](#) [Functional Uses](#) [Process Chemistry](#) [Resources](#)

Functional Uses (25) [FAQ](#)

FUNCTION	PRODUCT TYPE	PRODUCT NAME	PERCENTAGE	SOURCE
antimicrobial agent		cif antibacterial spray lemon and green tea		
antimicrobial pesticide				
antistatic agent		toniandguy curl defining oil (prep)		
benzalkonium chloride is an extensively used preservative and disinfectant. it is used primarily in skin and ophthalmologic preparations, especially contact lens solutions				
cationic detergent; surface antiseptic; fungicide				

Example of Process Chem Data

8001-54-5

Benzalkonium chloride

ALSO CALLED [8045-21-4] ALKYL DIMETHYLBENZYLAMMONIUM CHLORIDE (primary CASRN is 8001-54-5), [12741-06-9] Benzalk...

[View all synonyms \(10\)](#)

[Share Profile](#)

[Hazards](#) [Properties](#) [Functional Uses](#) [Process Chemistry](#) [Resources](#)

Known or Potential Residuals

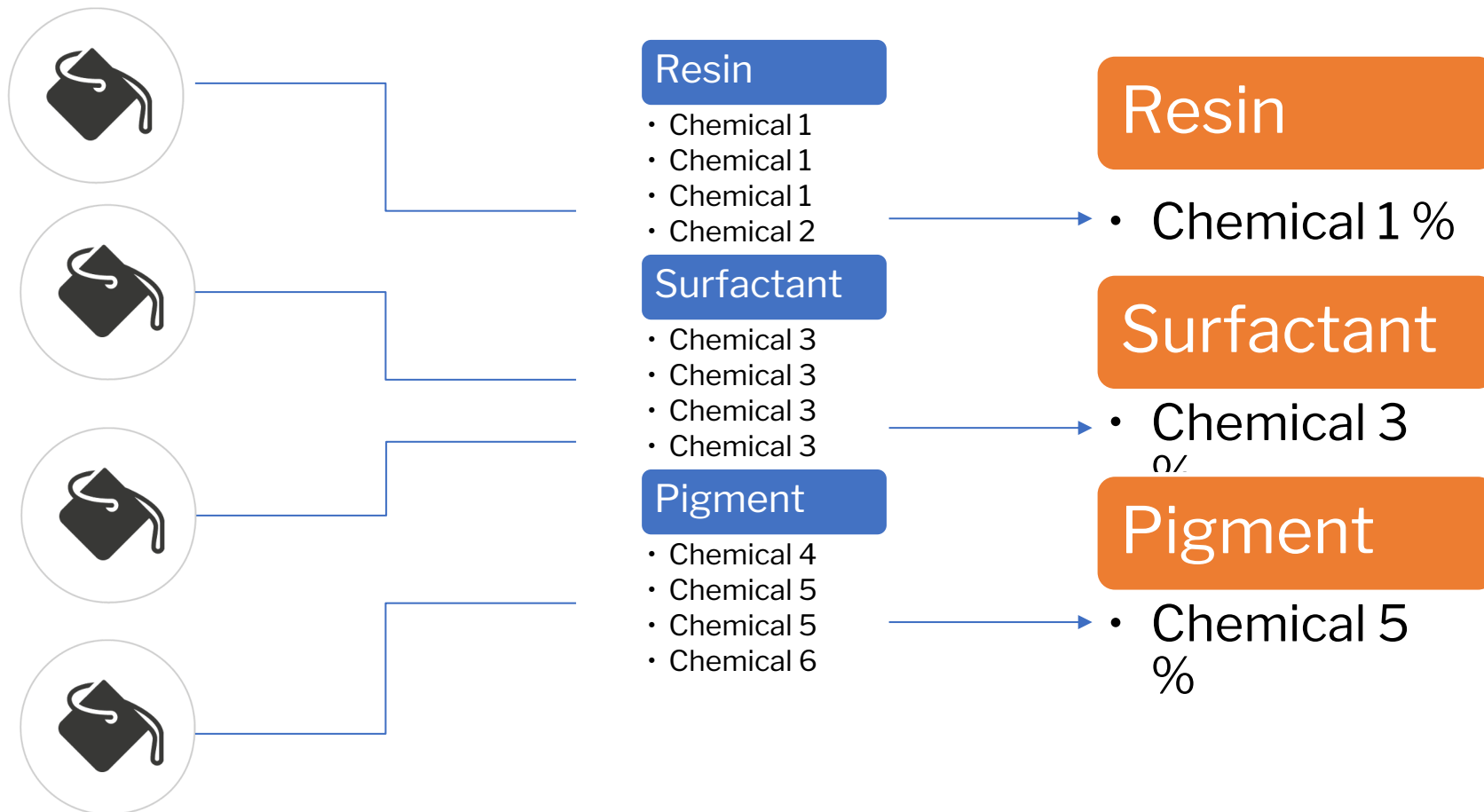
CASRN	NAME	GS SCORE	TYPE	FREQUENCY	% WT	SOURCES
74-87-3	Methyl chloride	LT-1	Reactant	Frequent	Unknown	
103-83-3	N,N-Dimethylbenzylamine	LT-P1	Reactant	Frequent	Unknown	

Common (Building) Products

Product Literature

Common Ingredients

Common Products



Example of Common Product Ingredient Data

Linoleum Flooring Common Product

MasterFormat 09 65 00 Resilient Flooring; 09 65 16 Resilient Sheet Flooring; 09 65 43 Linoleum Flooring

This information reflects our best understanding of product composition in 2019.

Linoleum flooring is a type of resilient flooring that can be applied with adhesive over a number of different substrates (concrete, seamless floors, tile, marble, approved wood, old resilient flooring, metal). It is primarily composed of natural...

[More about Linoleum Flooring](#)

[About Common Products](#)

- [Common Contents](#)
- [All Contents](#)
- [Process Chemistry](#)
- [Resources](#)

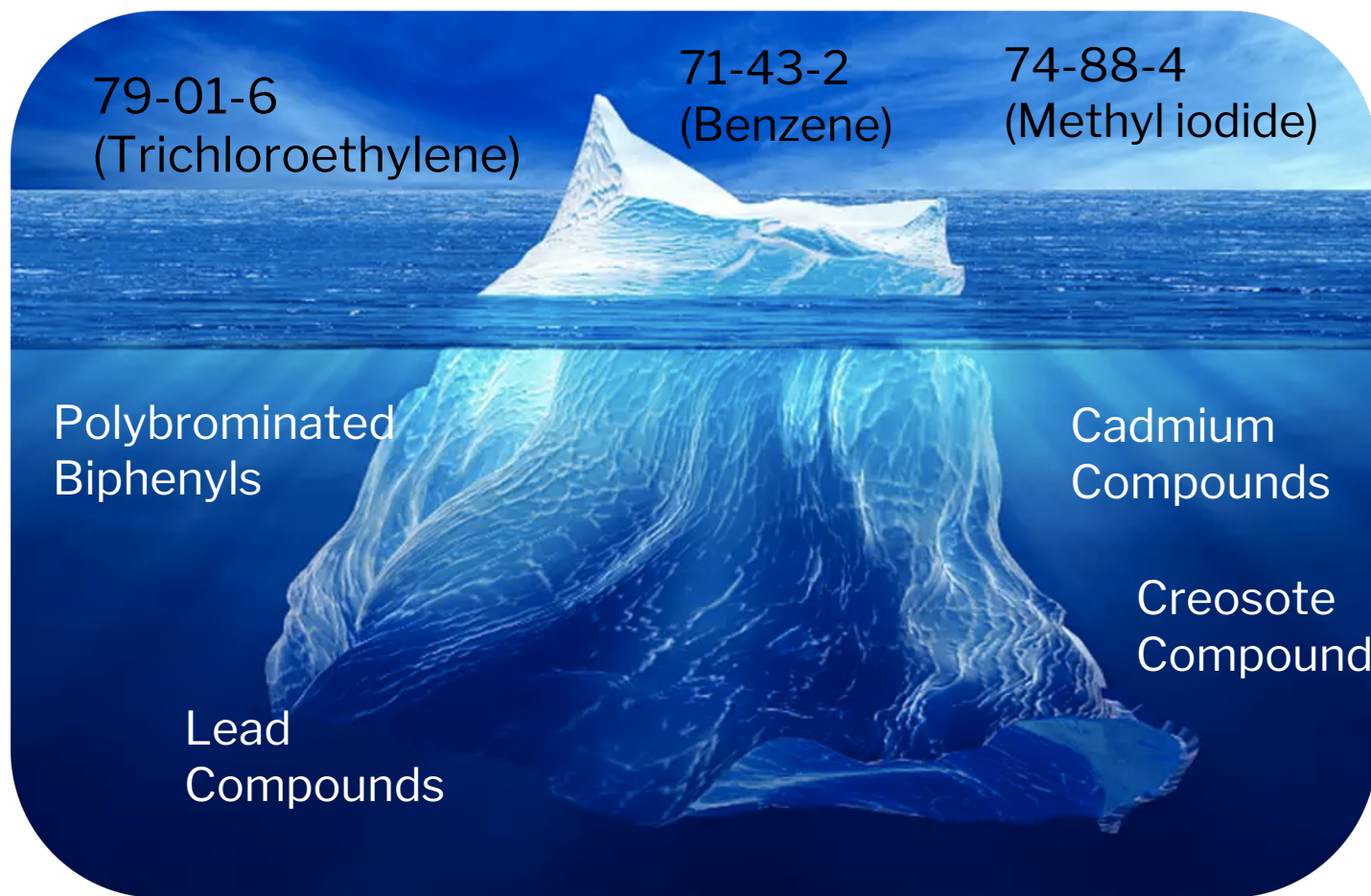
Nested View

[Add to Comparison](#)

NAME	% WT PART	% WT WHOLE	FUNCTION	GS SCORE	SOURCES	<input type="checkbox"/>
▼ Linoleum Flooring Base	91.52%	91.52%	Linoleum Base Layer	LT-1		<input type="checkbox"/>
Linseed oil 8001-26-1	32.57%	29.81%	Binder	NoGS		<input type="checkbox"/>
Wood dust - unspecified	19.20%	17.57%	Filler	NoGS		<input type="checkbox"/>
Quercus suber bark - CORK 61789-98-8	17.14%	15.69%	Filler	NoGS		<input type="checkbox"/>
Limestone 1317-65-3	12.65%	11.58%	Filler	LT-UNK		<input type="checkbox"/>

Two More Advantages of Pharos Data

Advantage 1: Compound Groups



Prop 65 has ~900
chemicals listed
explicitly

Prop 65 has 4200
chemicals in
Pharos compound
groups

Advantage 2: Obscure CAS Numbers



- Like a wolf in sheep's clothing, a carcinogen listed with an outdated or obscure CAS could appear harmless
- Pyridine listed with the CAS 152758-95-7 would show up on zero hazard lists
- In Pharos, it shows up on all 52 hazard lists

API Customers



Health Product
Declarations



MaterialWise



ChemHAT

Data for Materials Selection

Challenge: What types of building materials commonly contain chemicals on your favorite Restricted Substances List ?



Countertops



Cabinetry &
Millwork



Doors



Insulation



Flooring
Installation

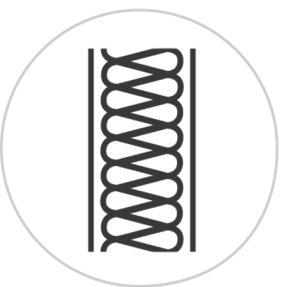


Sealants

[Download example data](#)

Data for Hazard Minimization

Challenge: Identify developmental toxicants that women might be exposed to at work



[Download example data](#)

Data for Chemicals Management

- Challenge: your company has over 5000 chemicals in your inventory. How do you prioritize which chemicals to focus on first?



[Download example data](#)

Data for Chemicals Management

- Challenge: your company uses multiple RSLs and hazard lists. How do you know you have the current version of each?



- And do you have all the chemicals that are included but not listed explicitly?

[Download example data](#)



Charlotte Brody, RN

Charlotte is a registered nurse, the mother of two sons, and vice president for Health Initiatives of the BlueGreen Alliance. She has led a Planned Parenthood affiliate and been among the founders of the Brown Lung Association, Health Care Without Harm, the Campaign for Safe Cosmetics, Green for All and Safer Chemicals, Healthy Families.

Powering Platforms and
Data Systems with Pharos:
The ChemHAT Story

Charlotte Brody, RN
BlueGreen Alliance
June 26, 2020



[GOOD JOBS](#)

[CLEAN INFRASTRUCTURE](#)

[FAIR TRADE](#)

[TAKE ACTION](#)



FILL OUT THE SAFEJOB CHECKLIST

Find out if your employer is doing everything they can to keep you safe on the job.

[FIND OUT MORE](#)

[GOOD JOBS](#)[CLEAN INFRASTRUCTURE](#)[FAIR TRADE](#)[TAKE ACTION](#)

ABOUT US

Creating Good Jobs, a Clean Environment, and a Fair and Thriving Economy

Too often, Americans are asked to choose between jobs and the environment. But as we face increasingly severe impacts of environmental challenges like climate change and adapt to an interconnected global economy, we can no longer choose one or the other. We believe we can and must choose both.

The BlueGreen Alliance **unites America's largest labor unions and its most influential environmental organizations** to solve today's environmental challenges in ways that create and maintain quality jobs and build a stronger, fairer economy.

We are guided by the principle that we can no longer choose between good jobs and a clean environment—that the actions we take to create quality jobs and to protect working people and the environment must go hand-in-hand, and that together, we will build clean, thriving and fair economy.

Our efforts center on the immediate need to develop commonsense solutions that protect the environment and create and maintain quality

[Share](#)



The story of
how ChemHAT
was born

Once there was a
union contract
between
the UAW and
Mack Truck



25906 P94ET
C7-50-L-006
16778 003311
12 / 27 / 18
BUCKLE UP, AMERICA

MACK

VEH1-V

2D

37

CHEMICAL RESEARCH

Use these links to research chemicals through the data bases of the National Library of Medicine, National Institute of Occupational Safety and Health, OSHA and EPA. The Internet has a huge amount of information on the toxic effects of chemicals. You can download Safety Data Sheets (SDS's) from several locations however it is best to obtain SDS sheets directly from your employer. The National Library of Medicine has a number of searchable databases that will provide lists and brief descriptions of studies done on health effects of chemicals or industry types. EPA maintains a site where you can find less toxic chemical substitutes.

Haz-Map® is an occupational health database designed for people seeking information about the adverse effects of workplace exposures to chemical and biological agents. The main links in Haz-Map are between chemicals and occupational diseases. These links have been established using current scientific evidence. Haz-Map shows the diseases linked to each agent and the agents linked to each disease. Agents are chemical such as formaldehyde, or biological such as grain dust. Haz-Map links jobs and hazardous job tasks with occupational diseases and their symptoms.

[National Toxicology Program](#)

User can search for chemicals by name and CAS #. Also available is the annual report on Carcinogens. The National Toxicology Program is a collaborative effort between several government agencies.

[Search Chemicals under Study by NTP](#)

[Report on Carcinogens](#)

[National Institute of Occupational Safety and Health - NIOSH](#)



**UAW TRAINING
RESOURCES**



**CHEMICAL
RESEARCH**



HEALTH & SAFETY

[the signal news & notes](#)

[building product library](#)

[chemical and material library](#)

[certifications and scoring](#)

ACETONE

CAS RN: 67-64-1

Direct Chemical and Compound Hazard Quotkscreen

[Detailed Hazard Listings](#)

High Hazard of...

EYE IRRITATION

EC - CLP/GHS Hazard Statements (EU H-Statements): H319 Causes serious eye irritation - GreenScreen Benchmark Unspecified [and 1 other]

FLAMMABLE

EC - CLP/GHS Hazard Statements (EU H-Statements): H225 Highly flammable liquid and vapour. - GreenScreen Benchmark Unspecified - occupational hazard only

Medium Hazard of...

NEUROTOXICITY

EC - CLP/GHS Hazard Statements (EU H-Statements): H336 May cause drowsiness or dizziness - GreenScreen Benchmark Unspecified [and 1 other]

Low Hazard of...

RESTRICTED LIST

German FEA - Substances Hazardous to Waters (VwVwS): Low Hazard to Waters (Water Hazard Class 1) - GreenScreen Benchmark Unspecified - occupational hazard only

Potential concern...

CANCER

US EPA - IRIS Carcinogens (EPA-C): Unknown carcinogen (Data are inadequate for an assessment of human carcinogenic potential - 1999 Guidelines)

This chemical is NOT present on the hazard lists scanned for the following health and ecotoxicity endpoints...

PBT	DEVELOPMENTAL	REPRODUCTIVE	ENDOCRINE	GENE MUTATION
RESPIRATORY	MAMMALIAN	SKIN IRRITATION	SKIN SENSITIZE	ORGAN TOXICANT
ACUTE AQUATIC	CHRON AQUATIC	TERRESTRIAL	REACTIVE	GLOBAL WARMING
OZONE DEPLETION				

Life Cycle Research

Research Status: No life cycle research started

The Pharos team has not yet researched the life cycle of this substance and has no information about chemicals of concern that may be associated with its life cycle.

VOC designation: VOC (Boiling point: 56 degrees Celsius)

View Products Containing This Chemical

Compound Groups

This chemical is a member of the following compound groups:

[EPA EXEMPT VOCS](#)

Tags for this chemical

There are no tags for this chemical yet.

Add a New Tag

Tag:

Make this tag available to users from my company:

Sources

[Hazardous Substances Databank \(HSDB\) \(NHIS\)](#)

CAS Variants

Bill Walsh



Sylvania Soft white

Lauren Asplen



Key to Symbols

ChemHAT health impact icons have different colors depending on the strength of the evidence. For example, when authoritative government bodies have definitively determined that a chemical cause cancer in people, the icon will be red to show that it is the strongest evidence base.

Stronger effect / evidence     Weaker effect / evidence



PBT (Persistent Bioaccumulative Toxicant) – Does not break down readily from natural processes, accumulates in organisms concentrating as it moves up the food chain, and is harmful in small quantities.



Cancer – Can cause or increase the risk of cancer.



Breast Cancer – Known to increase mammary gland tumors in animals.



Birth Defects – Can cause harm to the developing child including birth defects, low birth weight and biological or behavioral problems that appear as the child grows.



Reproductive Harm – Can disrupt the male or female reproductive systems, changing sexual development, behavior or functions, decreasing fertility, or resulting in loss of the fetus during pregnancy.



Endocrine Disruption – Can interfere with hormone communication between cells which controls metabolism, development, growth, reproduction and behavior (the endocrine system).

[Why ChemHAT?](#)

[How to use ChemHAT](#)

[Is ChemHAT Comprehensive?](#)

[Key to Symbols](#)

[Vocabulary](#)

[Data Sources](#)

[Who Made ChemHAT?](#)



Benzene

CAS: 71-43-2

How can this chemical affect my health?

■ Acute (Short Term) Effects [Data sources](#)



Toxic to Humans & Animals – Can be fatal on contact, ingestion or inhalation for humans and other mammals.



Irritates the Skin – Can cause irritation or serious damage to the skin.



Irritates the Eyes – Can cause irritation or serious damage to the eye.

■ Chronic (Long Term) Effects [Data sources](#)



Brain/Nervous System Harm – Can cause damage to the nervous system including the brain.



Cancer – Can cause or increase the risk of cancer.



Birth Defects – Can cause harm to the developing child including birth defects, low birth weight and biological or behavioral problems that appear as the child grows.



Reproductive Harm – Can disrupt the male or female reproductive systems, changing sexual development, behavior or functions, decreasing fertility, or resulting in loss of the fetus during pregnancy.



Gene Damage – Can cause or increase the rate of mutations, which are changes in genetic material in cells.



Other Health Effects – Can cause serious damage on contact or ingestion.



Endocrine Disruption – Can interfere with hormone communication between cells which controls metabolism, development, growth, reproduction and behavior (the endocrine system).



Breast Cancer – Known to increase mammary gland tumors in animals.



Asthma Trigger – Can result in high sensitivity so that small quantities trigger asthma, nose or sinus inflammation or other allergic reactions in the respiratory system.

Inherent Hazards [Data sources](#)



Restricted List – This chemical is on a list from an authoritative body recommending that its use be avoided.



Flammable – Easily ignited and capable of burning rapidly.

How does this chemical impact the environment? [Data sources](#)



Persistent – Does not break down readily from natural processes.



Long-Term Harm to Aquatic Ecosystems – Long term exposure may result in irreversible harm to fish or other aquatic organisms.



Immediate Harm to Aquatic Ecosystems – A single exposure may result in severe biological harm or death to fish or other aquatic organisms.



Harmful to Land Ecosystems – Can cause harm to land based plants, animals or microorganisms.



Bioaccumulative – Accumulates in organisms, concentrating as it moves up the food chain.

What safer alternatives are available for this chemical?

Find case studies related to substitutions for this chemical in [SubsPORT](#), the substitution support portal.

How am I likely to be exposed to this chemical?



Skin contact



Eye contact

How can I protect myself from exposure to this chemical in the workplace?



Handle with gloves



Safety eyewear



Decaffeinate coffee with benzene



In 1970s benzene replaced with dichloromethane



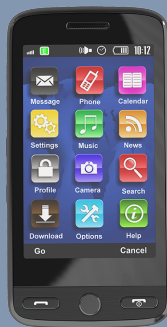
Decaffeinate coffee with water or carbon dioxide



Manufacture IV bags and tubes using polyvinyl chloride and DEHP



Switch production to lighter, stronger polypropylene plastic that do not contain chemicals of concern and does not need a moisture overwrap



Produce glass for electronics using arsenic to remove air bubbles



Maintain liquid glass at higher temperature for longer periods

Series of
Hazards of Chemicals
workshops with CWA
across California



Let's Put Breast Cancer Out Of Work!



More than 50,000 Americans die prematurely each year from exposure to toxic substances at work — 10 times as many as those who die from occupational injuries



ChemHAT will give you more information when you see the GHS Health Hazard Pictogram



Exercise Three

In your group, shuffle the cards and lay them out for a game of Concentration (also called the Memory Game).

When you make a match, show everyone
In your group the two cards and read the definition out loud.





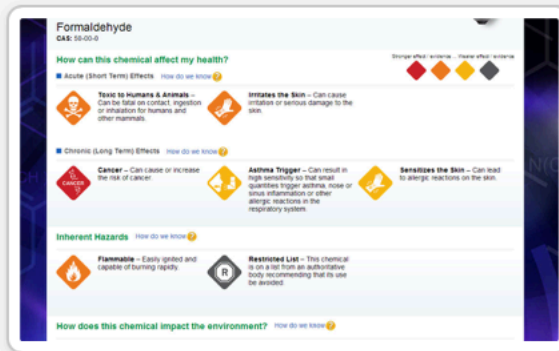
SEARCH OSHA

Transitioning to Safer Chemicals



- Home
- Why Transition to Safer Alternatives
- Basics of Informed Substitution and Alternatives Assessment

Key Resource



Chemical Hazard and Alternatives Toolbox (ChemHAT)

ChemHAT helps workers and employers understand whether a chemical can impact their health and whether safer alternatives exist.

The chemical information provided by ChemHAT allows you to rapidly understand the types of health effects related to a chemical and the strength of those effects. This information can help you examine your chemical use and identify which hazards you should eliminate or reduce

first. ChemHAT also provides information on existing case studies of safer alternatives. This information can help you quickly understand where the potential for substitution exists and what alternatives you should consider evaluating further.

ith

Opening session
of the Electric
Strategy Meeting
in Bangkok—
planning the
future path for
sustainable
electronics

June 2019

thanks to Ted Smith





ChemHAT.org

Chemical Hazard and Alternatives Toolbox

English | Español

ABOUT CHEMHAT SAFER CHEMICALS FOR WORKERS BREAST CANCER SAFER FAMILIES

Protecting Ourselves from COVID-19 at Work

Three great resources:

1. The BlueGreen Alliance's [Safe Job Checklist](#) to help you rate if your workplace is providing you with the six things every worker needs to be as safe as they can be from COVID-19.
2. [The National Council for Occupational Safety and Health \(NCOSH\)](#) with a webinar full of great slides and resources by occupation at the end.
3. [The NIH NIEHS Worker Training Program](#) with a slideshow in English and Spanish and additional resources from the program's grantees.

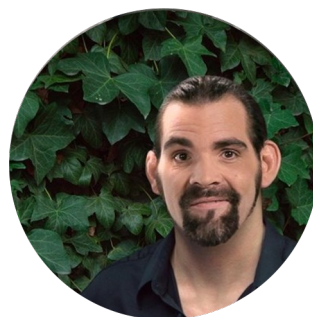


Powering Platforms and Data Systems with Pharos

Charlotte Brody, BlueGreen Alliance cbrody@bluegreenalliance.org

Access our previous webinars

- Pharos: Powering a Virtual Learning Experience.



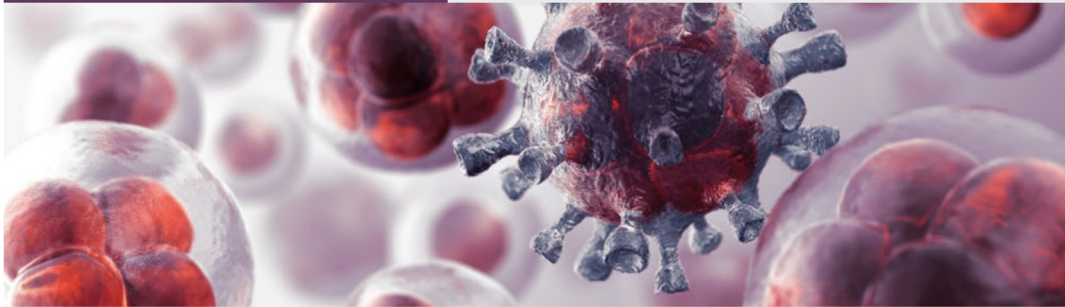
- Using Pharos to Power Chemical Management.



<https://pharosproject.net/tutorials>

New COVID-19 resource page:
<https://healthybuilding.net/covid19>

A PERKINS+WILL WHITE PAPER /



Healthy Environments: Understanding Antimicrobial Ingredients in Building Materials

MARCH 2017

Thank You!

- For individuals responsible for chemical management, subscribe to Pharos: <https://pharosproject.net/>
- For organizations needing more chemical data, contact sales@healthybuilding.net for an API or data download

For other questions, contact:
Michel Dedeo
mdedeo@healthybuilding.net