

Using Pharos Data to Identify Safer Chemicals

Michel Dedeo
Manager of Chemical Data Systems

4/23/20





MISSION

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



About Pharos

<https://pharosproject.net/>

Comprehensive independent database of chemicals, polymers, metals and materials

- Hazard data for >160,000 CAS Numbers from 45 hazard lists
- Functional use data show where and why chemicals are used
- Process chemistry data identifies possible contaminants
- >600 compound groups reduce the chances of regrettable substitutions

Sign Up for Free

<https://pharosproject.net/>

Pharos

[Comparisons](#) [Common Products](#) [Discussions](#) [Log In](#)

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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

or


Subscription Types

BASIC	PROFESSIONAL	ENTERPRISE
<ul style="list-style-type: none"> • 1 User • Hazard, exposure, and function data for 163,894 chemicals • 1 Chemical Comparison • Max 50 Chemicals in Comparisons • Access to Discussion forums • Access to Common Products ⓘ 	<ul style="list-style-type: none"> • 1 User • Hazard, exposure, and function data for 163,894 chemicals • 10 Chemical Comparisons • Max 500 Chemicals in Comparisons • Access to Discussion forums • C2C List Hazards ⓘ • Email Notifications on Hazard Updates • Download hazards of a chemical (example) • Download chemicals in a compound group (example) • Download chemicals in a hazard list (example) • Access to Common Products (including All Contents) ⓘ 	<ul style="list-style-type: none"> • Multiple Users! • Hazard, exposure, and function data for 163,894 chemicals • <i>Unlimited</i> Chemical Comparisons • Max 500 Chemicals in Comparisons • Access to Discussion forums • C2C List Hazards ⓘ • Email Notifications on Hazard Updates • Download hazards of a chemical (example) • Download chemicals in a compound group (example) • Download chemicals in a hazard list (example) • Access to Common Products (including All Contents) ⓘ • Customized Data Download ⓘ • API Access
Free!	\$50.00/month	—
Free!	\$500.00/year	Contact Us
	Choose Professional: Monthly Yearly	Choose Enterprise: Contact Us

Contact us to discuss multiple subscriptions, API access, custom data downloads, and discounts for nonprofits and students.

Everything You Are About to Learn

Pharos

[Comparisons](#) [Common Products](#) [Discussions](#) [Account](#) 

Guided tutorials help you get the most out of Pharos

Learn about specific features with these quick tutorials

- Compare hazards of multiple chemicals and track changes to their hazard profiles
- Find chemicals with a specific function (eg surfactant) or in a product category (eg. cosmetics)
- Learn about the most common building products types
- Find where a chemical is used in products
- Identify safer alternatives in common building product types
- View hazards in the new Pharos like they are displayed in the old Pharos
- View All Tours

ABOUT
About Pharos
Terms of Service
Privacy Policy
System Description

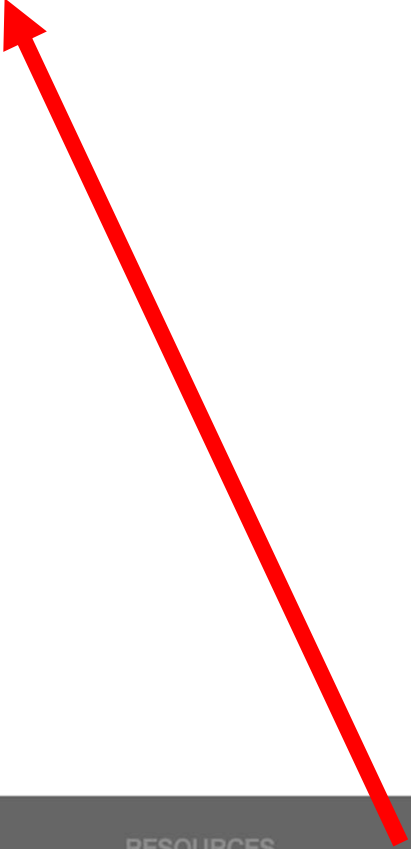
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RESOURCES
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Projects
Hazard Lists
Compound Groups

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Outline

1. Hazard, exposure, and function data
 - Download hazards of a chemical (pro)
 - Download chemicals in a hazard list (pro)
2. Chemical Comparisons
 - Email Notifications on Hazard Updates (pro)
3. Discussion forums
4. Common Products (contents of building products)
5. Compound groups

Questions?

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Chemical Comparisons – Group Exercise

You lead the R&D team tasked with producing a disinfectant product for SARS-CoV-2.

You need an effective product and want to minimize human health hazards.

Step 1: Identify possible active ingredients.

Disinfectants that meet EPA's criteria

EPA Registration Number	Active Ingredient(s)	Product Name	Company	Follow the disinfection directions and preparation for the	Contact Time (in minutes)	Formulation Type	Surface Types for Use	Use Site	Emerging Viral Pathogen Claim?	Date Added to List N
<input type="text" value="Search"/>	<input type="text" value="Search"/>	<input type="text" value="Search"/>							<input type="text" value="Search"/>	<input type="text" value="Search"/>
91899-2	Hydrogen peroxide	MDF-200								04/09/2020
91899-1	Quarternary ammonium	MDF-200								04/09/2020
34810-35	Citric acid	Cleancide								04/09/2020
9804-1	Chlorine dioxide	Oxine	Bio-Cide International Inc	Canine parvovirus	10	Dilutable	Hard nonporous	Healthcare; Institutional	Yes	04/09/2020
				Use this product for sterilization as instructed in						

Add all 19 possible active ingredients to a Pharos comparison

Comparing Disinfectants

Search Pharos

Search

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

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Want to get the most out of Pharos? Visit our [Tutorials](#) page for inspiration.

Looking for building product guidance? Check out our sister website, [HomeFree](#).

Announcements



Join Us for a Webinar on Pharos as a Virtual Learning Tool - Thursday Apr 30, 12 PM ET
Posted by Michel Dedeo 16 hours ago

Pharos is a proven resource to help undergraduate and graduate students learn and apply...

Discussion Activity



Durisan
Posted by Kevin Harr 2 weeks ago

If I were on "Who Wants to be a Millionaire?" and I have already taken a deal. I would...



Durisan
Posted by Joseph Rinkevich 2 weeks ago

Hi Nancy,

Based this helpful feedback from others, it's looking like "...



Comparing Disinfectants

Pharos

Comparisons Common Products Discussions Account

< Back to Comparisons

Disinfectants that meet EPA's criteria for use against SARS-CoV-2

<https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

Sharing	Public
Owner	Michel Dedeo
# of Chemicals	19

Receive Hazard Updates?
View all updates (0)

View Comparison FAQ

Export to Excel

Add one at a time

Import in a spreadsheet

All Hazards View

Group I Human	Group II and II* Human
	<input type="text" value="hydrogen per"/> <input type="button" value="Add from file..."/>
	7722-84-1 HYDROGEN PEROXIDE

< Back to Comparisons

Disinfectants that meet EPA's criteria for use against SARS-CoV-2

<https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

Sharing: Public
 Owner: Michel Dedeo
 # of Chemicals: 19

Receive Hazard Updates?

View all updates (0)

View Comparison FAQ

Export to Excel

Ethanol has low skin irritation - promising

All Hazards View

Add chemical...

Add from file...

Chemical	Group I Human					Group II and II* Human					Ecotox	Fate		Physical		Mult	Non-GSLT										
	GS	C	M	R	D	E	AT	ST	ST	N		N	SnS	Ir	IrS		IrE	CA	ATB	P	B	Rx	F	PBT	GW	O	Other
ALKYL DIMETHYLBENZYLAMMONIUM CHLORIDE 8001-54-5	LT-P1	-	-	-	-	-	vH	-	-	-	-	H	-	M	vH	vH	vH	M	-	-	-	H	-	-	-	R	
HYDROGEN PEROXIDE 7722-84-1	LT-UNK	M	-	-	M-L	-	M	M	-	-	-	-	-	-	vH	vH	vH	M	-	-	vH	pC	vH	-	-	R	
SODIUM HYPOCHLORITE 7681-52-9	LT-P1	-	-	-	-	-	L	M	-	-	-	-	-	-	M	vH	vH	vH	-	-	-	H	-	M	-	R	
citric acid 12262-73-6	LT-UNK	-	-	-	M-L	-	L	M	-	-	-	-	-	-	H	vH	-	-	-	-	-	-	U	-	-	R	
CHLORINE DIOXIDE 10049-04-4	LT-P1	H-L	-	H	H-L	H-M	vH	-	-	-	-	-	-	-	vH	vH	vH	-	-	-	H	-	vH	-	-	R	
PROPANOIC ACID, 2-HYDROXY-, (S)- 79-33-4	LT-UNK	-	-	-	-	-	M	pC	-	-	-	-	-	-	vH	vH	-	M	-	-	-	-	U	-	-	R	
THYMOL 89-83-8	LT-P1	-	-	-	-	-	M	-	-	-	-	-	M	vH	vH	-	M	-	-	-	-	-	U	-	-	R	
HYPOCHLOROUS ACID 7790-92-3	NoGS	-	-	-	-	-	pC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	
SODIUM CHLORITE 7758-19-2	LT-P1	M	M	M	M	M	vH	M	M	M	M	M	M	M	vH	vH	vH	M	-	-	-	H	M	-	-	R	
Ethanol 64-17-5	BM-2	L	L	L	M	DG	L	M	L	M	M	L	DG	L	H	L	L	L	-	-	-	L	vL	L	H	-	R
SODIUM DICHLORO-S-TRIAZINETRIONE 2893-78-9	LT-P1	-	-	-	-	-	M	M	-	-	-	-	-	-	H	H	vH	-	-	-	H	-	H	-	-	R	
HYDROGEN CHLORIDE (HCl) 7647-01-0	BM-2	L	L	M	M	DG	H	M	L	L	L	L	M	vH	vH	L	L	L	L	L	M	L	L	-	-	R	
lactic acid 152-36-3	BM-2	L	L	L	L	L	M	L	L	M	L	L	DG	vH	vH	L	L	L	L	L	-	-	-	-	-	R	
1,3,5-TRIAZINE-2,4,6-(1H,3H,5H)-TRIONE, 1,3-DICHLORO-, SODIUMSALT, DIHYDRATE 51580-86-0	LT-P1	-	-	-	-	-	M	M	-	-	-	-	-	-	H	H	vH	-	M	-	-	H	-	U	-	R	
Octanoic acid 124-07-2	LT-P1	H-L	-	-	-	H-M	pC	-	-	-	-	-	-	-	vH	H	-	-	-	-	-	pC	M	-	-	R	
PEROXYACETIC ACID 79-21-0	LT-P1	M	M	-	-	-	M	pC	-	-	-	-	M	vH	vH	vH	-	H	-	-	-	H	M	vH	-	R	
GLYCOLIC ACID 79-14-1	LT-UNK	-	-	-	M	-	M	-	-	-	-	-	-	-	vH	vH	M	-	-	-	-	-	-	vH	-	R	
PHENOL 108-95-2	LT-P1	M	M	M	H	-	H-M	H	pC	M	-	vH	-	-	vH	vH	-	M	-	-	-	-	-	vH	-	R	
Isopropyl Alcohol 67-63-0	BM-2	L	L	M	M	DG	L	vH	L	M	M	M	DG	M	H	L	L	L	-	-	-	vL	vL	H	H	-	R

Comparing Disinfectants

Only three chemicals available in large quantities at a feasible price:

- Benzalkonium chloride
- Phenol
- Sodium hypochlorite

Comparing Disinfectants

Pharos

[Comparisons](#)
[Common Products](#)
[Discussions](#)
[Account](#)

[< Back to Comparisons](#)

Disinfectants available in large quantities

- no description provided -

Sharing: Private

Owner: Michel Dedeo

of Chemicals: 3

Receive Hazard Updates?

View all updates (0)

[View Comparison FAQ](#)

[Export to Excel](#)

All Hazards View

Add from file...

Chemical	GS	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
x ALKYL DIMETHYLBENZYLAMMONIUM CHLORIDE 8001-54-5	LT-P1	-	-	-	-	-	vH	-	-	-	-	H	H-M	vH	vH	vH	-	M	-	-	-	-	H	-	-	-	R
x PHENOL 108-95-2	LT-P1	M	M	H	-	H-M	H	pC	M	-	vH-M	-	-	vH	vH	H	-	M	-	-	-	-	vH	-	-	-	R
x SODIUM HYPOCHLORITE 7681-52-9	LT-P1	-	-	-	-	-	L	M	-	-	-	H-M	vH	vH	vH	vH	-	-	-	-	H	-	M	-	-	-	R

Benzalkonium Chloride

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
Reactivity and/or Eye Irritation/Corrosivity and/or Skin Irritation/Corrosivity	U	LT-UNK	Québec CSST - WHMIS 1988	Class E - Corrosive materials	
Systemic Toxicity/Organ Effects [Single Exposure] and/or Neurotoxicity [Single Exposure]	H	LT-UNK	GHS - Japan	Specific target organs/systemic toxicity following single exposure - Category 2 [H371]	+1
T & P and/or B [(Chronic Aquatic Toxicity and Persistence) or (Acute Aquatic Toxicity and Persistence and/or Bioaccumulation)]	U	LT-UNK	GHS - New Zealand	9.1A (algal) - Very ecotoxic in the aquatic environment	+5
T & P and/or B [(Chronic Aquatic Toxicity and sometimes Persistence) or (Acute Aquatic Toxicity and Persistence and/or Bioaccumulation)]	U	LT-P1	GHS - Japan	Hazardous to the aquatic environment (chronic) - Category 1 [H410]	



Phenol

Hazard Lists

[Download Lists](#)

ENDPOINT	HAZARD LEVEL	GS SCORE	LIST NAME	HAZARD DESCRIPTION	OTHER LISTS
Carcinogenicity	M	LT-UNK	MAK	Carcinogen Group 3B - Evidence of carcinogenic effects but not sufficient for classification	+3
Mutagenicity/Genotoxicity	M	LT-UNK	EU - Annex VI CMRs	Mutagen - Category 2	+8
Reproductive Toxicity	H	LT-P1	GHS - Japan	Toxic to reproduction - Category 1B [H360]	+1
Endocrine Activity	H-M	LT-P1	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor	
Acute Mammalian Toxicity	H	LT-UNK	EU - GHS (H-Statements)	H311 - Toxic in contact with skin	+19
Systemic Toxicity/Organ Effects-Single Exposure	pC	NoGS	EU - Manufacturer REACH hazard submissions	H335 - May cause respiratory irritation (unverified)	+2
Systemic Toxicity/Organ Effects incl. immunotoxicity-Repeated Exposure	M	LT-UNK	EU - GHS (H-Statements)	H373 - May cause damage to organs through prolonged or repeated exposure	+2
Neurotoxicity-Repeated Exposure	vH-M	LT-UNK	G&L - Neurotoxic Chemicals	Neurotoxic	
Skin Irritation/Corrosivity	vH	LT-UNK	EU - GHS (H-Statements)	H314 - Causes severe skin burns and eye damage	+5
Eye Irritation/Corrosivity	vH	LT-UNK	GHS - Japan	Serious eye damage / eye irritation - Category 1 [H318]	+3
Acute Aquatic Toxicity	H	LT-UNK	GHS - Japan	Hazardous to the aquatic environment (acute) - Category 2 [H401]	
Terrestrial Ecotoxicity	M	NoGS	GHS - New Zealand	9.3B - Ecotoxic to terrestrial vertebrates	+1
T & P and/or B [(Chronic Aquatic Toxicity and sometimes Persistence) or (Acute Aquatic Toxicity and Persistence and/or Bioaccumulation)]	U	LT-P1	GHS - Korea	Hazardous to the aquatic environment (chronic) - Category 2 [H411 - Toxic to aquatic life with long lasting effects]	
Human and/or Aquatic		LT-P1	GHS - FFA	Class 2 - Hazard to Water	



Sodium Hypochlorite

Hazard Lists

[Download Lists](#)

ENDPOINT	HAZARD LEVEL	GS SCORE	LIST NAME	HAZARD DESCRIPTION	OTHER LISTS
Acute Mammalian Toxicity	L	LT-UNK	GHS - New Zealand	6.1E (inhalation) - Acutely toxic	+1
Systemic Toxicity/Organ Effects-Single Exposure	M	LT-UNK	GHS - Australia	H335 - May cause respiratory irritation	
Respiratory Sensitization	H-M	LT-UNK	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced	
Skin Irritation/Corrosivity	vH	LT-UNK	EU - GHS (H-Statements)	H314 - Causes severe skin burns and eye damage	+4
Eye Irritation/Corrosivity	vH	LT-UNK	EU - GHS (H-Statements)	H318 - Causes serious eye damage	+2
Acute Aquatic Toxicity	vH	LT-UNK	EU - GHS (H-Statements)	H400 - Very toxic to aquatic life	+2
Reactivity	H	LT-UNK	GHS - New Zealand	5.1.1B - Oxidising substances that are liquids or solids: medium hazard	+2
T & P and/or B [(Chronic Aquatic Toxicity and Persistence) or (Acute Aquatic Toxicity and Persistence and/or Bioaccumulation)]	U	LT-P1	EU - GHS (H-Statements)	H410 - Very toxic to aquatic life with long lasting effects	+6
Human and/or Aquatic toxicity and/or Persistence and/or Bioaccumulation	U	LT-P1	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters	
Reactivity and/or Eye Irritation/Corrosivity and/or Skin Irritation/Corrosivity	U	LT-UNK	Québec CSST - WHMIS 1988	Class E - Corrosive materials	
T & P and/or B [(Chronic Aquatic Toxicity and sometimes Persistence) or (Acute Aquatic Toxicity and Persistence and/or Bioaccumulation)]	U	LT-P1	GHS - Japan	Hazardous to the aquatic environment (chronic) - Category 1 [H410]	



Questions?

Outline

1. Hazard, exposure, and function data
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2. Chemical Comparisons
 - Email Notifications on Hazard Updates (pro)
3. **Discussion forums**
4. Common Products (contents of building products)
5. Compound groups

Discussion Forums

Pharos

Comparisons Common Products **Discussions** Account



2210-63-1
Mofebutazone
ALSO CALLED 1-Phenyl-4-butyl-3,5-pyrazolidinedione, 1-phenyl-4-n-butyl-3,5-dioxopyrazolidine, 2 Fdbp, 2-Phenyl-3-...
[View all synonyms \(40\)](#)

[Share Profile](#)

[Hazards](#) [Properties](#) [Functional Uses](#) [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	NoGS	-	-	-	-	-		-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	

Hazard Lists [Download Lists](#)

ENDPOINT	HAZARD LEVEL	GS SCORE	LIST NAME	HAZARD DESCRIPTION	OTHER LISTS
Acute Mammalian Toxicity		NoGS	DK-EPA - Danish Advisory List	Acute Tox. 4 - Harmful if swallowed (modeled)	
Acute Aquatic Toxicity		NoGS	DK-EPA - Danish Advisory List	Aquatic Acute1 - Very toxic to aquatic life (modeled)	

Restricted Substance Lists (2)

- EU - Cosmetics Regulation Annex II: Prohibited in Cosmetic Products
- Health Canada - Cosmetic Ingredient Hotlist: Ingredients that are Prohibited for Use in Cosmetic Products

Discussions

No discussions have been posted yet.

[Ask a question about this chemical in the forums >](#)



Discussion Forums

Pharos

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All Discussions	126
Announcements	34
Community Discussion	13
Feature Requests / Ideas	33
Chemical Discussions	45
Building Materials	1
Unread Posts	

SEARCH DISCUSSIONS

[88-05-7] BISPHENOL A (BPA)

[25495-98-1] HEXABROMOCYCLODECANE (HBDC)

PHthalATES (orthophthalates)

[1314-13-2] ZINC OXIDE

system updates

[Show all tags](#)

Admin Controls

- Pending Discussions (0)

All Discussions + New Discussion

Join Us for a Webinar on Pharos as a Virtual Learning Tool - Thursday Apr 30, 12 PM ET Announcements

Michel Dedeo, Manager of Chemical Data Systems, Healthy Building Network
a day ago

Pharos is a proven resource to help undergraduate and graduate students learn and apply basic toxicology, regardless of their academic backgrounds. Whether you are new to Pharos or are a long-time user, join us for a 60-minute session on how it can be used as a virtual learning tool. Thursday Apr 30, 12 PM ET. Sign up here: https://zoom.us/webinar/register/8915871302476/WN_Ey2gtfptSVCZ3ADJvKQxyA

2 replies Reply

Durisan Chemical Discussions

Nancy Uding, Program Director, Toxic-Free Future
22 days ago

Hello all, I am looking for information about a disinfecting product called Durisan. There is an entry in Pharos for Durisan soft. Can anyone tell me what soft means? Thanks! Nancy

[599-88-2] Benzenesulfonamide, 4-amino-N-(5-methyl-2-pyrimidinyl)-

5 replies Reply

ACC's Plastics Division releases mass balance certification principles Community Discussion

Tristan Roberts, Technical Director, Health Product Declaration Collaborative
24 days ago

Outline

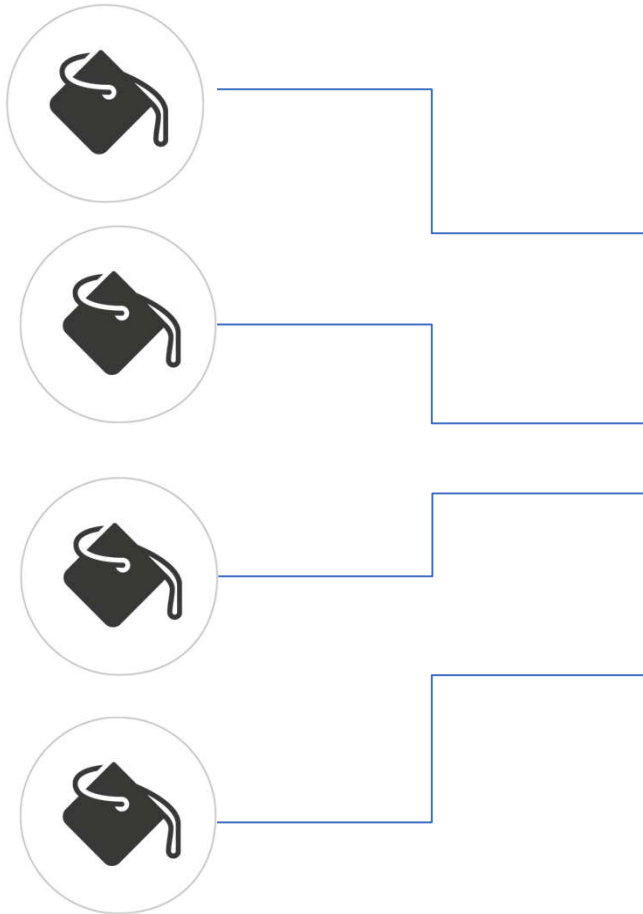
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Common Products

Answers the question,
“what’s probably in this building product?”

Common Products

Product Literature



All Content

Resin

- Chemical 1
- Chemical 1
- Chemical 1
- Chemical 2

Surfactant

- Chemical 3
- Chemical 3
- Chemical 3
- Chemical 3

Pigment

- Chemical 4
- Chemical 5
- Chemical 5
- Chemical 6

Common Product Content

Resin

- Chemical 1

Surfactant

- Chemical 3

Pigment

- Chemical 5

What do common products look like?

XPS Insulation (extruded polystyrene) Common Product

MasterFormat 07 20 00 Thermal Protection; 07 24 00 Exterior Insulation and Finish Systems

ASTM C578 defines extruded polystyrene (XPS) thermal insulation as a, "cellular plastic product manufactured in a one stage process by extrusion and expansion of the base polymer in the presence of blowing agent(s) resulting in a product..."

More about XPS Insulation (extruded polystyrene)

[About Common Products](#)

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

Nested View

Add to Comparison

NAME	% WT PART	% WT WHOLE	FUNCTION	GS SCORE	SOURCES	
POLYSTYRENE 9003-53-6	88.32%	88.32%	base resin	LT-UNK		<input type="checkbox"/>
1,1,1,2-TETRAFLUOROETHANE (HFC-134A) 811-97-2	6.20%	6.20%	blowing agent	LT-UNK		<input type="checkbox"/>
METHYL FORMATE 107-31-3	2.20%	2.20%	blowing agent	LT-UNK		<input type="checkbox"/>
benzene, ethenyl-, polymer with 1,3- butadiene, brominated 1195978-93-8	1.67%	1.67%	flame retardant	LT-1		<input type="checkbox"/>
PENTANE 109-66-0	0.91%	0.91%	blowing agent	LT-P1		<input type="checkbox"/>
TALC 14807-96-6	0.26%	0.26%	nucleating agent	BM-1		<input type="checkbox"/>



Transformation Targets

Pharos

Search...

Comparisons

Common Products

Discussions

Account

XPS Insulation (extruded polystyrene) Common Product

MasterFormat 07 20 00 Thermal Protection; 07 24 00 Exterior Insulation and Finish Systems

ASTM C578 defines extruded polystyrene (XPS) thermal insulation as a, "cellular plastic product manufactured in a one stage process by extrusion and expansion of the base polymer in the presence of blowing agent(s) resulting in a product..."

More about XPS Insulation (extruded polystyrene)

About Common Products



Common Contents

Nested View

Bad chemicals that don't need to be there

Add to Comparison

NAME	GS SCORE	SOURCES	
POLYSTYRENE 9003-53-6	88.32%	88.32%	base resin
1,1,1,2-TETRAFLUOROETHANE (HFC-134A) 811-97-2	6.20%	6.20%	blowing agent
METHYL FORMATE 107-31-3	2.20%	2.20%	blowing agent
benzene, ethenyl-, polymer with 1,3- butadiene, brominated 1195978-93-8	1.67%	1.67%	flame retardant
PENTANE 109-66-0	0.91%	0.91%	blowing agent
TALC 14807-96-6	0.26%	0.26%	nucleating agent



Transformation Targets

XPS Insulation (extruded polystyrene) Common Product

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More about XPS Insulation (extruded polystyrene)

[About Common Products](#) 

Transformation Target

HBN's Transformation Targets are chemical + product category combinations that are a high priority for avoidance. Halogenated flame retardants such as this one are a **Transformation Target** in the insulation category. To avoid these chemicals, avoid plastic foam insulation including board and spray-applied. If plastic foam insulation is used, look for those that are halogen-free. See our Hazard Spectrum and recommendations for insulation [here](#).

[Add to Comparison](#)

GS SCORE	SOURCES	
LT-UNK		
LT-UNK		
LT-UNK		
LT-1		
LT-P1		
BM-1		

benzene, ethenyl-, polymer with 1,3- butadiene, brominated 1195978-93-8	1.67%	1.67%	flame retardant	LT-1		
PENTANE 109-66-0	0.91%	0.91%	blowing agent	LT-P1		
TALC 14807-96-6	0.26%	0.26%	nucleating agent	BM-1		



Deeper Dive into Product Contents

XPS Insulation (extruded polystyrene) Common Product

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More about XPS Insulation (extruded polystyrene)

About Common Products



Common Content **All Contents** Process Chemistry Resources

Nested View

Add to Comparison

NAME	% WT PART	% WT WHOLE	FUNCTION	GS SCORE	SOURCES	
POLYSTYRENE 9003-53-6	88.32%	88.32%	base resin	LT-UNK		<input type="checkbox"/>
1,1,1,2-TETRAFLUOROETHANE (HFC-134A) 811-97-2	6.20%	6.20%	blowing agent	LT-UNK		<input type="checkbox"/>
METHYL FORMATE 107-31-3	2.20%	2.20%	blowing agent	LT-UNK		<input type="checkbox"/>
benzene, ethenyl-, polymer with 1,3- butadiene, brominated 1195978-93-8	1.67%	1.67%	flame retardant	LT-1		<input type="checkbox"/>
PENTANE 109-66-0	0.91%	0.91%	blowing agent	LT-P1		<input type="checkbox"/>
TALC 14807-96-6	0.26%	0.26%	nucleating agent	BM-1		<input type="checkbox"/>



“All Contents” Shows Alt. Chemicals

XPS Insulation (extruded polystyrene) Common Product

Common Content **All Contents** Process Chemistry Resources

Flame retardant

	NAME	GS SCORE	SOURCES	<input type="checkbox"/>
T C	benzene, ethenyl-, polymer with 1,3- butadiene, brominated 1195978-93-8	LT-1	i	<input type="checkbox"/>
T	HEXABROMOCYCLODODECANE (HBCD, HBCDD) (non-specific mixture of all isomers) 25637-99-4	LT-1	i	<input type="checkbox"/>
	poly-1-4-diisopropyl benzene 25822-43-9	NoGS	i	<input type="checkbox"/>
T	TETRABROMOBISPHENOL A BIS(2,3-DIBROMOPROPYL) ETHER (TBBPA-DBPE) 21850-44-2	LT-1	i	<input type="checkbox"/>
	TRIPHENYL PHOSPHATE 115-86-6	BM-2	i	<input type="checkbox"/>
	triphenylphosphine oxide 791-28-6	LT-P1	i	<input type="checkbox"/>

Examples of how CPs have been used in the industry

- Researchers use CPs to predict exposure to VOC/SVOCs throughout lifecycle
- Architects use CPs in building modeling to identify hazard “hotspots”
- Project teams use CPs to generate product specific requirements in specifications
- Project teams use CPs/CIs to prioritize manufacturer outreach for LBC certifications
- Retailers use CPs to design chemicals management programs


Outline

1. Hazard, exposure, and function data
 - Download hazards of a chemical (pro)
 - Download chemicals in a hazard list (pro)
2. Chemical Comparisons
 - Email Notifications on Hazard Updates (pro)
3. Discussion forums
4. Common Products (contents of building products)
 - Transformation Targets
5. **Compound groups**




Compound Group Project

Orthophthalates (aka phthalates)

1. Listed as toxic
2. No CAS numbers provided



Collaborative on
Health and the
Environment



Our Work Environmental Health

phthalates

Diseases linked to this toxicant Grouped by strength of evidence

Good Evidence	Limited Evidence
Hormonal changes (levels of circulating sex hormones - FSH/LH, Inhibin, and/or estrogens, progesterones, androgens, prolactin)	Abnormal sperm (morphology, motility, and sperm count) Asthma - allergen, sensitizer Asthma - irritant Fetotoxicity (miscarriage / spontaneous abortion, stillbirth) Genito-urinary malformations (includes male and female) Menstrual disorders (abnormal bleeding, short cycles, long cycles, irregular cycles, painful periods) Preterm delivery Rhinitis - allergic Testicular toxicity

Compound Group Project

1. If specific toxic chemicals in a group are not listed, how can people make informed decisions about them?
2. Pharos systematically identifies individual members of chemical groups to improve list based chemical hazard screening and avoid regrettable substitutions.

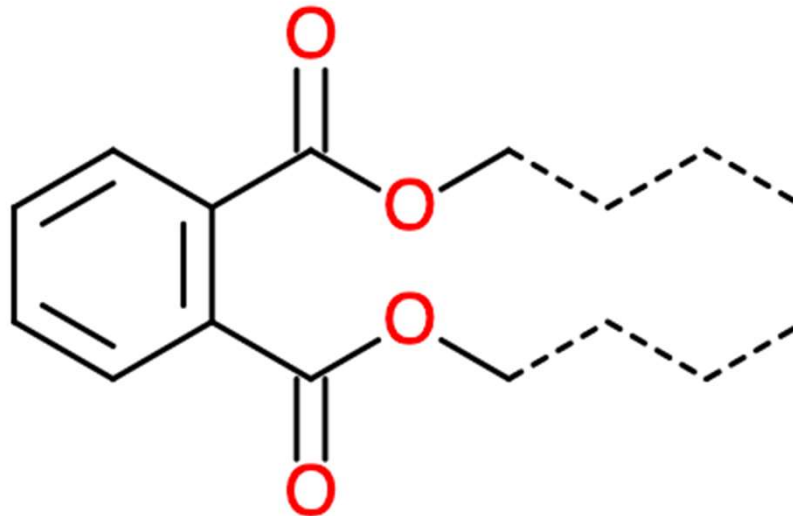
<https://pharosproject.net/compound-group-population-project>

Compound Group Methodology

1. Propose definitions of groups.
2. Develop algorithms to search chemical structure databases to identify members of the groups.
3. Invite peer review to improve definitions of groups.
4. Establish a public registry / open standard of the group definitions and members.
5. Encourage use of these standardized groups by tool developers and list publishers to increase consistency.

Search for Orthophthalates using a common structure

There are hundreds of orthophthalates, and they all share the same structure (denoted with solid lines):



We search databases like PubChem for this common structure, which provides a list of all orthophthalates they contain.

Questions?

Quick Answers (sometimes)

Pharos

[Comparisons](#) [Common Products](#) [Discussions](#) [Account](#)

Search Pharos

Search

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

About Pharos

Pharos provides hazard, use, and exposure information on 163,890 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.

Want to get the most out of Pharos? Visit our [Tutorials](#) page for inspiration.

Looking for building product guidance? Check out our sister website, [HomeFree](#).

Announcements

Over 150 New GreenScreen® Assessments in Pharos
Posted by Michel Dedeo 1 month ago

The number of GreenScreen® assessed chemicals in Pharos just doubled to 308 thanks to...

Discussion Activity

Durisan
Posted by Kevin Harr 1 week ago

If I were on "Who Wants to be a Millionaire?" and I have already taken a deal. I would...

Durisan
Posted by Joseph Rinkevich 1 week ago

Hi Nancy,

Based this helpful feedback from others, it's looking like "...

Data Services

Pharos API - Automate your workflow by allowing your system to query and process Pharos data

Pharos Exports - Speed up your research by getting bulk Pharos data from a custom query

Thank You!

Sign up:

<https://pharosproject.net/>

Click Create new account

For more information contact:
Michel Dedeo
mdedeo@healthybuilding.net



Product Category Spectrum

Choose the type of product you are looking for



Flooring



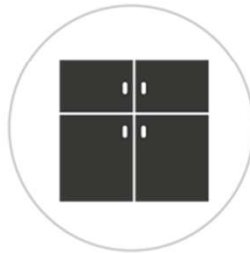
Paint



Drywall



Countertops



Cabinetry & Millwork



Doors



Insulation



Flooring Adhesives



Sealants



Paints by Type Hazard Spectrum

Individual paints can vary significantly in their health profiles, however some categories of interior paints are better than others when it comes to the health of building occupants and installers. Below, HBN ranks different types of interior latex paints on the market on a simplified spectrum.[1] Products in the green categories are better options than those in the orange or red, and products in the yellow categories are generally less preferable than those at the top, but are better choices than those at the bottom.

[Read more..](#)

Related Product News

It's Not Just About VOCs: Select APE-free Paint, Too

Earlier this year, the Healthy Building Network (HBN) recommended specifying NPE-free paints in addition to low- or very low VOC paints to help protect human health and the environment. HBN is expanding this recommendation to include the broader category of chemical compounds known as APEs, ...

A Brush With Research: A HomeFree Member Searches for Healthy Paint

Guest blogger: Sunshine Mathon, Foundation Communities in Austin, TX
Spoiler Alert: Sherwin-Williams Pro Mar 400 Zero VOC paints was identified as the "sweet spot" of cost and health as best as we could determine. My journey to this conclusion ca...

A Primer on Interior Paint

Interior paints can cover enormous amounts of a building's surface area in a

[GS-11 Certified, Very Low VOC Content, and Low VOC Emissions](#)

[APE-free, Low VOC Content, and Low VOC Emissions](#)

[Low VOC Content](#)

[Standard](#)

[Recycled Paints](#)

[Specialty Paints](#)

[Paints Advertised as "Antimicrobial"](#)

Thank You!

Sign up:

<https://pharosproject.net/>

Click 'Create new account'

For more information contact:
Michel Dedeo
mdedeo@healthybuilding.net

