

# Promoting Quality Through Data Standards and Common Exchanges

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**Office of Information Collection  
Information Exchange and Services Division  
Data Standards Branch**



For Conference Use Only



# What Are EPA Data Standards?




- EPA Definition: Data Standards are documented agreements on representation, format, and definition for common data
- Agreements may include business rules and common value lists
- Developed only when there are no international, national (ANSI), or federal standards available
- Developed collaboratively by EPA, State, and Tribal subject matter experts
- Approved by:
  - Exchange Network Leadership Council
  - EPA Chief Information Officer (CIO) after recommendation from the Quality Information Council
- Have mandatory implementation dates; but waivers may be requested and approved by the CIO
- **An EPA data standard is a compromise developed using consensus; it is not a perfect or complete solution**

# Why Have EPA Data Standards?



- Environmental statutes require collection and reporting of data for compliance, enforcement, and accountability
- Programs are implemented at federal, state, tribal, and local levels
- Programs at various levels use terms and concepts differently
- Information needs to be exchanged, aggregated, and compared efficiently
- Programs need to promote improved understanding of environmental data for better decision making
- Common understandings and formats need documentation and agreement
- **Data standards support the business**

# Extending the Value of EPA Data Standards



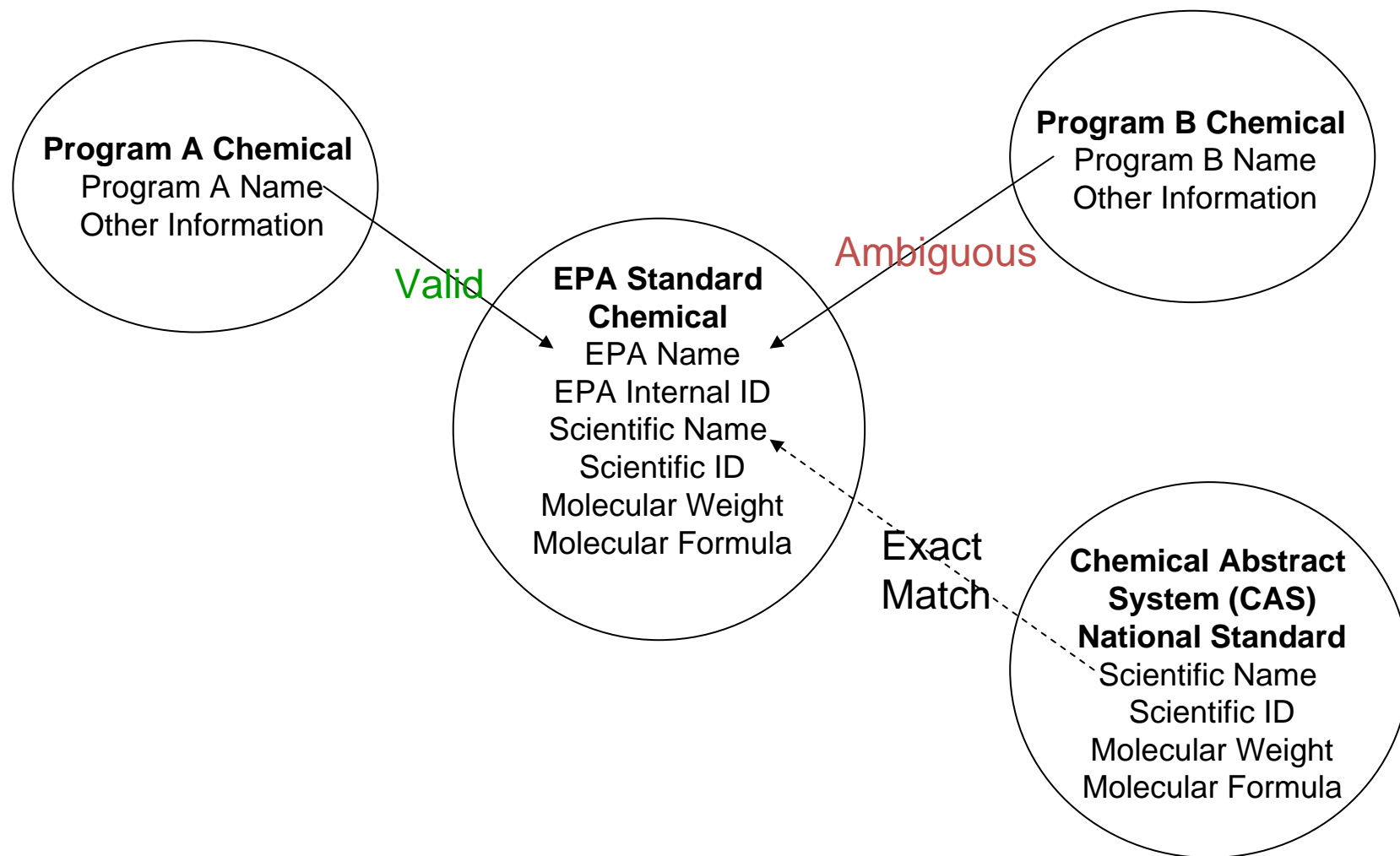
- Data standards are not just lists of common data elements found in multiple systems
- Use of data blocks – Groups of data elements within a standard, that are implemented as a whole, improve data design (for example the contact data standard has data blocks for “point of contact” and “address”)
- Sharing common valid value lists reduces maintenance costs and increases interoperability
- Mapping valid values to common meanings (when agreement can not be reached on a standard list of values) enables automated translation functions
- Use of common data exchanges reduces development costs and improves consistency
- Use of common validation routines improves accuracy (check at the source, check when imported, and check within the primary EPA system)
- **Data standards support quality**

# Finding Information




- **New Data Standards Web site at [www.epa.gov/datastandards](http://www.epa.gov/datastandards)**
  - EPA Data Standards Policy
  - EPA procedures for data standards development, maintenance, implementation, and waivers
  - EPA guidance is coming shortly for each standard
  
- **New System of Registries Web site at [www.epa.gov/sor](http://www.epa.gov/sor)**
  - Chemical and facility registries
  - Future data registry with valid value lists for standards and mappings to standards (coming in 2009)
  - Future “reusable component” registry for automated services that utilize data standards (coming in 2009)

# The Chemical ID Synonym Problem



# Use of an EPA Data Standard: Chemical ID



- Data standard establishes the common structure and a repository under Substance Registry Services (SRS) holds the valid value list (90,000+) of chemicals found in EPA systems
- Mappings of synonyms between programmatic chemical names used in different systems and the standard chemical name are maintained in SRS
- Quality information about the mappings is also maintained in SRS – the synonyms are classified as: valid, ambiguous, inaccurate, misspelled, having a format error, or of unknown quality
- Bang for the buck – use the common identifier and you can get additional, reliable information about the chemical (such as its molecular formula) from the registry or from outside systems

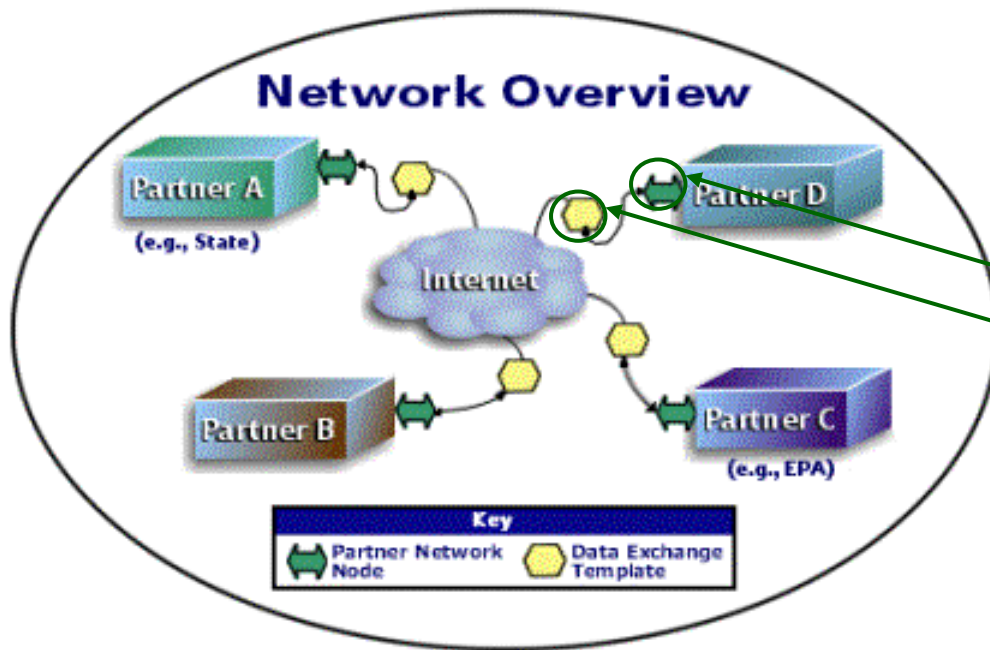
# Use of an EPA Data Standard: Chemical ID (continued)



- Web services are available to validate names of chemicals at the source (such as in state or tribal systems where chemical data is prepared for submission to EPA)
- High quality data describing chemicals can be made visible to end users
- Standard grows over time to meet business needs - additions to the standard valid value list are managed by subject matter experts through the Chemical Steering Board
- Common data flows permit chemical information to be shared across customers of the Exchange Network (such as between an EPA office and a state or tribe, or between two states)

# What is the Exchange Network?

*An Internet and standards-based method for exchanging environmental information between partners*



## Key Components

- Data Standards
- Nodes
- Shared XML Schema
- Trading Partner Agreements
- Grant Program

# List of Exchange Network Data Flows Using the Chemical ID Standard



- Current
  - Toxic Release Inventory (TRI)
  - Air Quality System (AQS)
  - Emissions Inventory System (EIS)
  - Water Quality Exchange (WXQ-STORET)
  - Safe Drinking Water Information System (SDWIS)
- Future
  - eTSCA (Toxic Substances Control Act)
  - Emergency Management Program's DECON system
  - Consolidated Health Informatics for Allergens (cross-governmental exchange for substances that are allergens)



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## Substance Search

To search, you must select either a Synonym or a Substance Identifier. Choose additional search criteria to narrow your selection.

### Search by Substance Information

#### Synonym

Please enter a *Common Name, Biological Name, EPA Registry Name or other Synonym*

Contains    Begins With    Exact Match

#### Substance Identifier

Please enter a *CAS Number, TSN, EPA Identifier, Internal Tracking Number, or Alternate Identifier*

Narrow your Search by identifying whether the Substance is a *Chemical, Biological Organism, Physical Property, Miscellaneous Object, or Not Known*

#### Substance Type

All

#### Return

Substance With Components    Substance Without Components    Both

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## Substance Search - Results

### Search Results

**Search Terms (Contains):** chlordane; **Substance Identifier:** ; **Substance Type:** All; **Return:** Both Substances With and Without Components

14 results found (Export options: [CSV](#) | [Excel](#) | [XML](#))

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Results per page:

Systematic Name	Registry Name	CAS Number	TSN	EPA Identifier
<a href="#">Chlordane, CA Ocean Plan Definition</a>				E17027046
<a href="#">Chlordane, mixture with weed killing compound</a>				E17163114
<a href="#">Chlordane, technical</a>	Chlordane, technical	12789-03-6		
<a href="#">Chlordane, technical, and/or chlordane metabolites</a>				E740548
<a href="#">Chlordanes</a>				E17162926
<a href="#">Filter solids in the production of chlordane as defined.</a>				E741157
<a href="#">4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-</a>	Chlordane	57-74-9		
<a href="#">4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-, (1R,2R,3aS,4S,7R,7aS)-rel-</a>	trans-Chlordane	5103-74-2		
<a href="#">4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-, (1R,2S,3aS,4S,7R,7aS)-rel-</a>	cis-Chlordane	5103-71-9		
<a href="#">4,7-Methano-1H-indene, 2,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-</a>	2,2,4,5,6,7,8,8-Octachloro-2,3,3a,4,7,7a-hexahydro-4, 7-methano-1H-indene	5566-34-7		



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## Substance Details - Chlordane

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### Core Metadata

<b>Substance Type</b>	Chemical Substance	<b>Internal Tracking Number:</b> 2683
<b>EPA Registry Name</b>	Chlordane	<b>Substance Status:</b> Approved
<b>EPA Registry Name List</b>	Chemical Identification	
<b>Systematic Name</b>	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	
<b>Systematic Name List</b>	Chemical Abstracts Service, 9th Collective Index Nomenclature	
<b>CAS Number</b>	57-74-9	
<b>EPA Identification Number</b>		
<b>Molecular Formula</b>	C10H6Cl8	
<b>Molecular Weight</b>	409.78	
<b>Definition</b>		
<b>Comment/Description</b>	See CASRN 12789-03-6, also identified as Chlordane.	
<b>Classifications</b>		

### Associated Identifiers

This section provides other identifiers associated with this substance, including former CAS numbers, incorrectly used CAS numbers, and retired EPA Identifiers.

<b>Former CAS Number(s)</b>	53637-13-1, 39400-80-1
<b>Incorrectly Used CAS Number(s)</b>	90-43-7, 115-28-6

### Structure

Structure Notation Type	Notation
SMILES	<chem>ClC1CC2C(C1Cl)C1(Cl)C(=C(Cl)C2(Cl)C1(Cl)Cl)Cl</chem>

### Synonym

Below are the EPA applications/systems, statutes/regulations, or other sources that track or regulate this substance. This table shows how each list refers to the substance. To view more metadata about the specific Synonym, click on the Synonym.

### Statutes/Regulations

Statutes/Regulations	Synonym	Synonym Quality	Effective Date	End Date
<a href="#">RCRA U Waste</a>	<a href="#">4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-</a>	Valid	11/25/1980	
<a href="#">CERCLA</a>	<a href="#">Chlordane</a>	Valid		

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<a href="#">RCRA U Waste</a>	<a href="#">4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-</a>	Valid	11/25/1980	
<a href="#">CERCLA</a>	<a href="#">Chlordane</a>	Valid		
<a href="#">RCRA Appendix VIII</a>	<a href="#">Chlordane</a>	Valid		
<a href="#">SARA 110</a>	<a href="#">Chlordane</a>	Valid	04/17/1987	
<a href="#">CWA 304B</a>	<a href="#">Chlordane</a>	Valid		
<a href="#">PAI</a>	<a href="#">Chlordane</a>	Valid		
<a href="#">CERCLA</a>	<a href="#">4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-</a>	Valid		
<a href="#">CWA 311</a>	<a href="#">Chlordane</a>	Unknown	03/13/1978	
<a href="#">CWA 311</a>	<a href="#">Chlordane</a>	Valid	03/13/1978	
<a href="#">RCRA T Char</a>	<a href="#">Chlordane</a>	Valid	03/29/1990	
<a href="#">CAA112(b) HAP</a>	<a href="#">Chlordane</a>	Valid		
<a href="#">PBT</a>	<a href="#">Chlordane</a>	Valid	01/01/2000	
<a href="#">RCRA U Waste</a>	<a href="#">Chlordane, .alpha. &amp; .gamma. isomers</a>	Unknown	11/25/1980	
<a href="#">SARA 302A</a>	<a href="#">Chlordane</a>	Valid	11/17/1986	
<a href="#">CWA 311</a>	<a href="#">Toxichlor</a>	Unknown	03/13/1978	
<a href="#">RCRA Appendix VII</a>	<a href="#">Chlordane</a>	Valid	05/19/1980	
<a href="#">RCRA Appendix VIII</a>	<a href="#">4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-</a>	Valid		
<a href="#">TRI</a>	<a href="#">4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro- 2,3,3a,4,7,7a-hexahydro-</a>	Unknown	01/01/1987	
<a href="#">SDWA NPDWR</a>	<a href="#">Chlordane</a>	Valid		
<a href="#">CERCLA</a>	<a href="#">Chlordane, .alpha. &amp; .gamma. isomers</a>	Unknown		
<a href="#">TRI</a>	<a href="#">Chlordane</a>	Valid	01/01/1987	



### EPA Applications/Systems

EPA Applications/Systems	Synonym	Synonym Quality	Effective Date	End Date
<a href="#">ERNS</a>	<a href="#">CD-68</a>	Unknown		
<a href="#">STORET</a>	<a href="#">Chlordane</a>	Valid		
<a href="#">NEI</a>	<a href="#">Chlordane</a>	Valid		
<a href="#">PCS</a>	<a href="#">Chlordane</a>	Valid		
<a href="#">ECOTOX</a>	<a href="#">1,2,4,5,6,7,8,8-Octachloro- 2,3,3a,4,7,7a-hexahydro-4, 7-methanoindene</a>	Unknown		
<a href="#">ECOTOX</a>	<a href="#">Chlordane</a>	Valid		
<a href="#">GRTS</a>	<a href="#">Chlordane</a>	Valid		
<a href="#">ECOTOX</a>	<a href="#">Chlorindan</a>	Unknown		
<a href="#">ECOTOX</a>	<a href="#">1,2,4,5,6,7,8,8-Octachloro- 3a,4,7,7a-tetrahydro-4,7-methanoindan</a>	Unknown		

**Component Of**

This substance exists as a component of the following substances.

Systematic Name	Synonym	CAS Number	TSN	EPA Identifier	Effective Date	End Date
<a href="#">Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.</a>	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.			E741553	05/15/2000	
<a href="#">Pesticides, organic, chemicals, total, from CWA304B 40 CFR455.20(b)</a>	Pesticides, organic, chemicals, total, from CWA304B 40 CFR455.20(b)			E755231		
<a href="#">Pesticides</a>	Pesticides			E966580		
<a href="#">Chlordanes</a>	Chlordanes			E17162926		

**Related References**

Below are links to other sources of information about this substance.

The following list includes links related to the selected metadata item. A link may lead to resources within the SRS, to another site within EPA, or go to a site outside EPA. A link may be another Web site or a document. For additional information on links to external Web sites, see [SoR Disclaimer](#).

**Related Reference**

- [ATSDR Toxicological Profile](#)
- [NTP Long-Term Carcinogenicity Study Abstract](#)
- [TSCATS Low Detail Report](#)
- [National Pesticide Telecommunication Network Fact Sheet - General](#)
- [ATSDR Minimum Risk Levels for Hazardous Substances](#)
- [IARC Cancer Monograph](#)
- [NIOSH International Chemical Safety Card](#)
- [Prior Informed Consent-Decision Guidance Document](#)
- [Hazardous Air Pollutants Hazard Summary](#)
- [Extremely Hazardous Substances Chemical Profile](#)
- [OSHA Sampling and Analytical Method](#)
- [Office of Water: Current Drinking Water Standard](#)
- [USDA Agricultural Research Pesticide Properties](#)
- [Information on Persistent Organic Pollutants](#)
- [OSHA Chemical Sampling Information](#)
- [IRIS QuickView](#)
- [National Pesticide Telecommunication Network Fact Sheet - Technical](#)
- [NJ RTK Hazardous Substance Fact Sheet](#)
- [Extremely Hazardous Substances First Aid Guide](#)
- [Prior Informed Consent-Decision Guidance Document](#)
- [National Safety Council Chemical Backgrounders](#)
- [ATSDR ToxFAQs Fact Sheet](#)
- [Drinking Water Consumer Fact Sheet](#)
- [Full IRIS Summary](#)
- [Drinking Water Technical Fact Sheet](#)
- [EXTOXNET Pesticide Information Profile](#)



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## Synonym Details - 4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-

### Substance Metadata

<b>Systematic Name</b>	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-
<b>EPA Registry Name</b>	Chlordane
<b>CAS Number</b>	57-74-9
<b>Substance Type</b>	Chemical Substance

### Synonym Information

<b>List Name</b>	Toxic Chemical Release Inventory
<b>Synonym</b>	4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-
<b>Reason for Regulation</b>	Congressional Mandate
<b>Comments</b>	
<b>Effective Date</b>	01/01/1987
<b>End Date</b>	
<b>Characteristics</b>	

### Alternate Identifiers

There are no alternate identifiers for this synonym.

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## Search by List

To search, you must select a list name. Choose additional search criteria to narrow your selection. Then press the Search button.

### List Information

Please select a list from the menu below. This may be an EPA application/system, statute/regulation, ad hoc, or other external list that contains substance data.  
To select a list, enter a list name (or acronym), then click "Filter" to narrow the number of lists displayed below.

\* List Name

After clicking "Filter", select the list you would like to search on by clicking it.

- AFS - Air Facility System (3045)
- AQS - Air Quality System (663)
- ATSDR - Agency for Toxic Substances and Disease Registry (558)
- CA Index - Chemical Abstracts Index Name (270)
- CAA 109 - National Ambient Air Quality Standards (8)
- CAA 111 - Standards of Performance for New Stationary Sources of Air Pollutants - Equipment Lea

### Advanced Search Criteria

**Synonym**

Contains     Begins With     Exact Match

**Substance Identifier**

**Substance Type**

**Return**     Substance With Components     Substance Without Components     Both

**Characteristics**

**Return**     Current Substances Only     Pending Substances Only     Both Pending and Current Substances

### Alternate Identifiers

To Search by Alternate Identifier, please select an Alternate Identifier Context.

**Alternate Identifier**

**Alternate Identifier Context**



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## Advanced Search

To search, select a Criteria Type and a Criteria. For searches using Criteria Types: Classification, Characteristic, or Reason for Regulation, select the Criteria from the drop down box. For searches using Criteria Type: List Name, use the Filter button to narrow the choices in the text box.

You must select either the "Add Expression AND" or the "Add Expression OR" button before selecting the Search button or before selecting a new Criteria Type and Criteria. "Add Expression AND" creates an intersection between two search criteria. "Add Expression OR" creates a union between two search criteria.

### Advanced Search

#### Search Expression

Select	Expression	And/Or
<input type="checkbox"/>	Synonym contains "chlordane"	AND
<input type="button" value="Remove"/>		

**Criteria Type**  

**Criteria**   *Please select a list from the menu below. This may be an EPA application/system, statute/regulation, ad hoc, or other external list that contains substance data. To select a list, enter a list name (or acronym), then click "Filter" to narrow the number of lists displayed below.*

*After clicking "Filter", select the list you would like to search on by clicking it.*

- AFS - Air Facility System
- AQS - Air Quality System
- ATSDR - Agency for Toxic Substances and Disease Registry
- CA Index - Chemical Abstracts Index Name
- CAA 109 - National Ambient Air Quality Standards
- CAA 111 - Standards of Performance for New Stationary Sources of Air Pollutants - Equipment Lea

