The background of the slide is a spiral-bound notebook with a light-colored, textured cover and a dark brown spine on the left side. The spiral binding is visible on the left edge.

Using the EPA HPVIS to Form Chemical Categories for Hazard Assessment

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Characterizing Chemicals in
Commerce

1

Using Categories to Assess HPV Endpoints

- Who?
- What?
- When?
- Where?
- Why?
- How?

Who?

- Who has guidelines for forming categories?
 - US EPA
 - OECD
- Who else applies the principles?
 - other regulatory authorities
 - industry
 - academia
 - independent review and oversight organizations

What is a Category?

- A group of chemicals
- Likely similarities in physicochemical and toxicological properties
- A regular pattern as a result of structural similarity

When is it a Category?

- Predictable patterns in any or all of the following parameters:
 - physicochemical properties
 - environmental fate and environmental effects
 - human health effects
- Categories are not necessarily similar in all of their properties

Where to Look for Patterns?

- Structural similarities such as carbon chain length or common functional groups
 - series of alcohols, aldehydes, acids or their corresponding salts
 - example: C7-C9 aliphatic aldehydes and carboxylic acids
 - a list of alkenes or petroleum streams
- Metabolic equivalence
 - a common metabolite or degradate in the environment
 - aldehydes metabolize to carboxylic acids
- Physical properties or chemical reactivity
 - water solubility, chemical stability, acidity
- Environmental fate
 - degradation, deposition, bioavailability

Why Use Categories?

- Categories accomplish the goal of the Challenge Program
 - to obtain screening level hazard information
 - through the strategic application of testing
- Demonstrating predictable behavior allows:
 - interpolation and/or extrapolation to assess the chemicals
 - reduction in the conduct of additional screening-level testing

Steps in Category Development

- List the chemicals or substances
- Develop preliminary rationale – category justification
 - propose the property(ies) to be the basis of the category
- List the endpoints to be included in the category approach
 - physical/chemical properties or structure - reactivity
 - health - route and duration of exposure
 - environment - fate or effects
- Construct a Data Matrix
 - list the endpoints on one axis and the chemicals on the other
 - populate with available data
- Compare data and look for patterns

Constructing a Data Matrix

- Construct a matrix of chemicals versus properties
- Fill in the known values
- Use HPVIS to find similar materials that might contribute data to your matrix
 - search by chemical name or CAS# if you have a particular chemical in mind
 - a metabolite for which HPV data are already available
 - search for name fragments
 - for example – other materials or categories with similar functional groups – acids, amines, esters, etc.

How HPVIS Can Help

- Provides examples and data
 - View existing categories and their justification
 - examples of viable approaches to identify patterns
 - View the data matrices for existing categories
 - examples of successful testing strategies
 - View selected results for individual endpoints
 - help fill data gaps or select test methods
 - View selected results for individual materials
 - use existing data whenever possible

Options for Exploring HPVIS

High Production Volume Information System (HPVIS)

Recent Additions | Contact Us | Print Version Search:

EPA Home > Prevention, Pesticides & Toxic Substances > Pollution Prevention & Toxics > High Production Volume (HPV) Challenge Program > High Production Volume Information System (HPVIS)

The High Production Volume Information System (HPVIS) provides access to select health and environmental effect information on chemicals that are manufactured in exceptionally large amounts. Information in this database are submitted through EPA's High Production Volume (HPV) Challenge Program. HPVIS allows users to search for summary information, test plans, and new data on high production volume chemicals as they are developed. Read [basic information about high production volume chemicals](#).

As of September 2006, HPVIS contains 318 submissions, representing 577 chemical substances, either as a single chemical submission or as a member of a chemical category. Additional submissions will be added over time.

How does this work?

The goal of the HPV Challenge Program is to provide basic data on the health and environmental effects of approximately 2,200 HPV chemicals to the public. Companies, such as chemical manufacturers and trade associations, voluntarily sponsor a set of HPV chemicals, perform tests on the chemicals, and submit their test data to this database.

To ensure consistency, sponsors follow the Screening Information Data Set (SIDS), developed by the Organization for Economic Cooperation and Development. SIDS provides internationally agreed upon tests for screening chemicals for human and environmental hazards. These data can help environmental managers and public decision-makers make informed preliminary judgements about the hazards of chemical substances.

HPVIS submissions contain data on up to 50 endpoints organized into the following four disciplines. Click on any of the disciplines to view a list of the HPVIS endpoints included in that discipline. Click on any of the individual endpoints to view the specific data fields defined for each endpoint. Note: this information is metadata - information describing the data that is included in HPVIS. To view the actual data, use the Search box on the right side of this page.

- [Physical/chemical properties \(e.g., melting point, vapor pressure\)](#)
- [Environmental fate and pathways \(e.g., biodegradation, stability in soil\)](#)
- [Ecotoxicity \(e.g., fish toxicity, toxicity to terrestrial plants\)](#)
- [Mammalian health effects \(e.g., reproductive toxicity, developmental toxicity\)](#)

Disclaimer: Data available in HPVIS have been entered from the robust summaries and test plans as submitted by the HPV Challenge sponsors. This self-reported information is also available on the HPV website at <http://www.epa.gov/hpv>. EPA has verified the data in HPVIS to ensure that it is consistent with the information that was submitted under the HPV Challenge program. Industry sponsors also have the opportunity to verify their submitted data.

EPA also plans to assess the quality of the data but that effort has not yet begun.

HPVIS includes both initial and final submissions. The Agency intends to mark the data accordingly as our HPVIS efforts proceed.

EPA plans to follow the [recommendation of the National Pollution Prevention and Toxics Advisory Committee](#) to review the HPV Challenge data.

Save the Date: December 12-14, 2006, Austin, Texas. For more information about the conference for data users of high production volume chemicals, please access the Northeast Waste Management Officials' Association's (NEWMOA) website via the button below.

Start here to look up data on a high production volume chemical.

Enter partial chemical name or CAS # to search the 577 chemical substances in the HPVIS database.

Other options:

- [Browse a list of chemical categories, sponsors, and submitters](#) if you don't know a specific chemical name to look up.
- [Create a special report with the query tool](#) to select specific data elements to build a special report that you can review online or download to your computer.
- [Create a matrix of the individual chemical members](#) of the category as one axis and the HPVIS endpoints as the other. The intent of the report is to assist users in performing a "read-across" analysis to estimate values for chemicals in the category without a result reported for a specific endpoint.
- [Create an Endpoint Result Report](#), providing a frequency of distribution of the units-of-measure reported for any specific result value within the system.

FIRST NATIONAL CONFERENCE

Start | Netscape Search - Ne... | Norton | 8:56 PM

Several Ways to Search – Standard Query for a Chemical

The screenshot shows a Microsoft Internet Explorer browser window displaying the EPA HPVIS Standard Query / Report page. The browser's address bar shows the URL: http://iaspub.epa.gov/oppphpv/public_search.html_page. The page title is "Standard Query / Report".

The page content includes a navigation menu on the left with the following items:

- HPV Challenge Program Home
- How to Participate
- Who's Participating
- Information on HPV Chemicals
- HPV Challenge Program Robust Summaries, Test Plans & Comments
- Vol. Children's Chemical Eval. Pgm.
- Related Websites

The main content area contains the following text:

Standard Query / Report

This query provides for retrieval of HPV Challenge Program submissions that have been made publicly available by EPA.

Select search criteria from one or more of the five selection boxes below. You may either enter all or part of your selection criteria in the text boxes or select an entry from the list below each text box.

After entering your search criteria, press the "Search" button at the bottom of this page. For best results, use the "[Previous Page](#)" button provided throughout the database rather than your browser back button. Use the "Reset" button to clear the screen.

If you enter more than one criterion (e.g., Chemical and Sponsor Name), the results will include submissions that match ALL the criteria.

Chemical Selection

Enter a full or partial CAS number or chemical name within the text box or select a CAS number/chemical name from the list below.

Chemical (CAS No. - Chemical Name) :

Select a Chemical	
100-01-6	Benzenamine, 4-nitro-
100-02-7	Phenol, 4-nitro-
100-18-5	Benzene, 1,4-bis(1-methylethyl)-

AND

Category Selection

Enter a full or partial category name within the text box or select a category name for the list below.

Standard Query Results


EPA - HPVIS - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print

Links Customize Links Windows Media Windows

Address http://iaspub.epa.gov/opptppv/public_search.publiclist

 **U.S. Environmental Protection Agency**
High Production Volume Information System (HPVIS)

[Recent Additions](#) | [Contact Us](#) Search: **GO**

[EPA Home](#) > [Prevention Pesticides & Toxic Substances](#) > [Pollution Prevention & Toxics](#) > [High Production Volume \(HPV\) Challenge Program](#) > [High Production Volume Information System \(HPVIS\)](#) > Query Results

Query Results

5 matches found.

Selected Criteria:

Chemical Name: NAL

	Submission Name	Sponsor's / Consortium Name	Submitter's Name	Sponsored Chemical	Chemical Category Name	Database Entry Date
Details	C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category	The Flavor and Fragrance High Production Volume Consortia C6-C10 Consortium	The Flavor and Fragrance High Production Volume Consortia C6-C10 Consortium		C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category	09/15/2005
Details	Chlorinated C3 Stream	The Dow Chemical Company	The Dow Chemical Company		Chlorinated C3 Stream	08/30/2005
Details	Cinnamyl Derivatives	The Flavor and Fragrance High Production Volume Consortia (FFHPVC) Aromatic Consortium	The Flavor and Fragrance High Production Volume Consortia (FFHPVC) Aromatic Consortium		Cinnamyl Derivatives Category	09/14/2005
Details	Propanal, 2-methyl-2-methylthio-, oxime	Honeywell International Inc.	Honeywell International Inc.	1646-75-9 - Propanal, 2-methyl-2-(methylthio)-, oxime		08/31/2005
Details	Terpenoid Tertiary Alcohols and Related Esters Category	The Flavor and Fragrance High Production Volume Consortia (FFHPVC) Terpene Consortium	The Flavor and Fragrance High Production Volume Consortia; The Terpene Consortia		Terpenoid Tertiary Alcohols and Related Esters Category	09/15/2005

Internet

Standard Query for a Category

The screenshot shows a Microsoft Internet Explorer browser window displaying the EPA HPV Challenge Program Standard Query / Report page. The browser's address bar shows the URL: http://iaspub.epa.gov/opthpv/public_search.html_page. The page title is "Standard Query / Report".

The page content includes a navigation menu on the left with the following items: HPV Challenge Program Home, How to Participate, Who's Participating, Information on HPV Chemicals, HPV Challenge Program Robust Summaries, Test Plans & Comments, Vol. Children's Chemical Eval. Pgm., and Related Websites.

The main content area is titled "Standard Query / Report" and contains the following text:

This query provides for retrieval of HPV Challenge Program submissions that have been made publicly available by EPA.

Select search criteria from one or more of the five selection boxes below. You may either enter all or part of your selection criteria in the text boxes or select an entry from the list below each text box.

After entering your search criteria, press the "Search" button at the bottom of this page. For best results, use the "Previous Page" button provided throughout the database rather than your browser back button. Use the "Reset" button to clear the screen.

If you enter more than one criterion (e.g., Chemical and Sponsor Name), the results will include submissions that match ALL the criteria.

The "Chemical Selection" section contains the following text:

Enter a full or partial CAS number or chemical name within the text box or select a CAS number/chemical name from the list below.

Chemical (CAS No. - Chemical Name) :

Select a Chemical

100-01-6	Benzenamine, 4-nitro-
100-02-7	Phenol, 4-nitro-
100-18-5	Benzene, 1,4-bis(1-methylethyl)-

The "AND" section contains the following text:

Category Selection

Enter a full or partial category name within the text box or select a category name for the list below.

Category Name : [C6-C10 Aliphatic Aldehydes and Carboxylic Acids Cat

The browser's status bar at the bottom shows "Done" and "Internet".

Category Detail Query Results

The screenshot shows a Microsoft Internet Explorer browser window displaying the EPA HPVIS (Hazardous Priority Volatile Inorganic Substances) web application. The address bar shows the URL: http://iaspub.epa.gov/opthpv/public_search.publiclist#submission. The page title is "Information System (HPVIS) > Detail Query Results".

The main content area is titled "Detail Query Results" and includes three buttons: "<<< Previous", "Export to XML", and "View Entire Dataset". Below these buttons, a message states: "Click on the links below to jump to a specific section:" followed by a list of links:

- [Submission Information](#)
- [Attachments](#)
- [Submitter Information](#)
- [Sponsor's/Consortium Information](#)
- [Chemical Category Information](#)
- [Endpoint Information](#)
- [Submit Comments](#)

The "Submission Information" section is expanded, showing:

Submission Information
Submission ID : 24959771 **Submission Name :** C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category
AR Number :

The "View Submission Attachment(s)" section is also expanded, listing several attachments with a "Top" link:

- [3-8-2005-c13033tl](#) [Top](#)
- [9-20-2004-c13033rr](#)
- [9-20-2004-c13033rt](#)
- [9-20-2004-c13033tl](#)
- [c13033cv](#)
- [c13033rs](#)
- [c13033tp](#)

The "Submitter Information" section is partially visible at the bottom of the screenshot.

Chemicals in Category

EPA - HPVIS - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites Media Print

Links Customize Links Windows Media Windows

Address http://iaspub.epa.gov/oppphpv/public_search.publiclist#submission Go

Category Information [Top](#)

Chemical Category Name : C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category

Chemicals within Category :

Click on the chemical name link to see the tabular data entered for the study.

- [\(111-14-8\) Heptanoic acid](#) This chemical has 59 robust summaries.
- [\(111-71-7\) Heptanal](#) This chemical has 63 robust summaries.
- [\(112-05-0\) Nonanoic acid](#) This chemical has 1 robust summaries.
- [\(112-31-2\) Decanal](#) This chemical has 1 robust summaries.
- [\(118-58-1\) Benzoic acid, 2-hydroxy-, phenylmethyl ester](#) This chemical has 1 robust summaries.
- [\(124-07-2\) Octanoic acid](#) This chemical has 4 robust summaries.
- [\(124-13-0\) Octanal](#) This chemical has 44 robust summaries.
- [\(124-19-6\) Nonanal](#) This chemical has 66 robust summaries.

Endpoint Information [Top](#)

Click on the endpoint link to see the data on a tab page.

Physical-Chemical SIDS

- [Melting Point\(7\)](#)
- [Boiling Point\(21\)](#)
- [Vapor Pressure\(10\)](#)
- [Partition Coefficient\(9\)](#)
- [Water Solubility\(6\)](#)

Fate SIDS

- [Photodegradation\(6\)](#)
- [Stability in Water\(6\)](#)
- [Transport Between Environmental Compartments Fugacity/Dist\(82\)](#)
- [Biodegradation\(9\)](#)

http://iaspub.epa.gov/oppphpv/Public_Search.PublicTabs?section=1&SubmissionID=24959771&epcount=44&epname=null&epdiscp=null&selc Internet

Search for Aldehyde Categories

The screenshot shows the EPA HPVIS web application in a Microsoft Internet Explorer browser window. The address bar shows the URL: http://iaspub.epa.gov/oppt/hpv/hpv_ez.retrieval_list. The page header includes the U.S. Environmental Protection Agency logo and the title "High Production Volume Information System (HPVIS)".

The main content area displays the following information:

- Navigation links: [Recent Additions](#) | [Contact Us](#) | Search: [GO](#)
- Breadcrumbs: [EPA Home](#) > [Prevention Pesticides & Toxic Substances](#) > [Pollution Prevention & Toxics](#) > [High Production Volume \(HPV\) Challenge Program](#) > [High Production Volume Information System \(HPVIS\)](#) > HPVIS Ad hoc Query
- Section Title: **STEP 3: Enter Search Criteria and Organize the Output**
- Query Name: Submission Information [Output Options for Selected Columns](#)

The search criteria table is as follows:

Column Name	Operator Definition	Search Value	Column Display Order	Sort Column	Sort Order	Where Only
CAS Number	Equal to		<input type="checkbox"/>	2	Ascending	<input type="checkbox"/>
Chemical Category Name	Containing	aldehyde	<input type="checkbox"/>	1	Ascending	<input type="checkbox"/>
Ninth Collective Chemical Index Name	Equal to		<input type="checkbox"/>		Ascending	<input type="checkbox"/>

Below the table are buttons for "Search Database", "Get Results in Excel Format", "Reset", and "Previous". At the bottom of the page, there are links for "EPA Home" and "Privacy and Security Notice".

Output – Members of the Category

The screenshot shows a Microsoft Internet Explorer browser window displaying the EPA's High Production Volume Information System (HPVIS) website. The page title is "U.S. Environmental Protection Agency High Production Volume Information System (HPVIS)". The main heading is "HPVIS Ad hoc Query Results" with the query name "All Endpoint Result Information". The page is identified as "Page No. 1". A button labeled "Get Results in Excel Format" is visible. Below the button, the text reads "Chemical Category Name Containing aldehydes and". A table lists chemical categories and their corresponding Ninth Collective Chemical Index Names.

CAS Number	Chemical Category Name	Ninth Collective Chemical Index Name
111-71-7	C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category	Heptanal
111-14-8	C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category	Heptanoic acid
124-19-6	C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category	Nonanal
112-05-0	C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category	Nonanoic acid
124-13-0	C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category	Octanal
124-07-2	C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category	Octanoic acid

Find Phys/Chem Properties Using a CAS Number

Column Name	Operator Definition	Search Value	Column Display Order	Sort Column	Sort Order	W/O
CAS Number	Equal to	111-14-8	1	<input type="checkbox"/>	Ascending	<input type="checkbox"/>
Chemical Category Name	Equal to		3	<input type="checkbox"/>	Ascending	<input type="checkbox"/>
Endpoint Name	Equal to		4	<input type="checkbox"/>	Ascending	<input type="checkbox"/>
Ninth Collective Chemical Index Name	Equal to		2	<input type="checkbox"/>	Ascending	<input type="checkbox"/>
Test Results	Equal to		5	<input type="checkbox"/>	Ascending	<input type="checkbox"/>
Test Substance Result Type	Equal to		9	<input type="checkbox"/>	Ascending	<input type="checkbox"/>
Test Value	Equal to		7	<input type="checkbox"/>	Ascending	<input type="checkbox"/>
Test Value Units	Equal to		8	<input type="checkbox"/>	Ascending	<input type="checkbox"/>
Value Description	Equal to		6	<input type="checkbox"/>	Ascending	<input type="checkbox"/>

Phys/Chem Results for Heptanoic Acid

EPA - HPVIS - Microsoft Internet Explorer

Address: http://iaspub.epa.gov/opthpv/hpv_ez.get_table

Page No. 1

Get Results in Excel Format

CAS Number Equal to 111-14-8

CAS Number	Ninth Collective Chemical Index Name	Chemical Category Name	Endpoint Name	Test Results	Value Description	Test Value	Test Value Units	Test Substance Result Type
111-14-8	Heptanoic acid		BOILING POINT		=	205.5	°C	Measured
111-14-8	Heptanoic acid		BOILING POINT		=	223	°C	Measured
111-14-8	Heptanoic acid		BOILING POINT		=	239.3	°C	Measured
111-14-8	Heptanoic acid		BOILING POINT				°C	Measured
111-14-8	Heptanoic acid		MELTING POINT		=	-8	°C	Measured
111-14-8	Heptanoic acid		MELTING POINT		=	-7.5	°C	Measured
111-14-8	Heptanoic acid		PARTITION COEFFICIENT		=	2.42		
111-14-8	Heptanoic acid		VAPOR PRESSURE		=	.001	kPa	
111-14-8	Heptanoic acid		VAPOR PRESSURE		=	.015	kPa	
111-14-8	Heptanoic acid		WATER SOLUBILITY		=	2419	mg/L	
111-14-8	Heptanoic acid		WATER SOLUBILITY		=	5316	mg/L	

Select A Category Matrix Report

The screenshot shows a Microsoft Internet Explorer browser window displaying the EPA's High Production Volume Information System (HPVIS) website. The browser's address bar shows the URL: http://iaspub.epa.gov/opphpv/far_readacross.search_page. The page header features the U.S. Environmental Protection Agency logo and the text "U.S. Environmental Protection Agency High Production Volume Information System (HPVIS)". Below the header, there is a search bar with a "GO" button and a breadcrumb trail: "EPA Home > Prevention Pesticides & Toxic Substances > Pollution Prevention & Toxics > High Production Volume (HPV) Challenge Program > High Production Volume Information System (HPVIS) > Category Matrix Search". The main heading is "Category Matrix Search". A descriptive paragraph states: "The Category Matrix Report presents results for HPV Challenge Program data that was reported in categories of chemicals. The report is a matrix of the individual chemical members of the category as one axis and the HPVIS endpoints as the other. The intent of the report is to assist users in performing a 'read-across' analysis to estimate values for chemicals in the category without a result reported for a specific endpoint." Below this text is a "Category Selection" section with the instruction "Select a Category Name from the list below." and a label "Category Name :". A dropdown menu is open, showing "C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category" as the selected option. At the bottom of the selection area are three buttons: "Search", "<<< Previous", and "Reset". The browser's status bar at the bottom shows the URL <http://www.epa.gov/> and the "Internet" icon.

Category Matrix Search

The screenshot shows a web browser window titled "EPA - HPVIS - Microsoft Internet Explorer". The address bar contains the URL http://aspub.epa.gov/opthpv/far_readcross.search_page. The page content is titled "Category Matrix Search" and includes a descriptive paragraph: "The Category Matrix Report presents results for HPV Challenge Program data that was reported in categories of chemicals. The report is a matrix of the individual chemical members of the category as one axis and the HPVIS endpoints as the other. The intent of the report is to assist users in performing a 'read-across' analysis to estimate values for chemicals in the category without a result reported for a specific endpoint."

The page features three main sections for user input:

- Category Selection:** A dropdown menu labeled "Category Name" with the selected option "C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category".
- Endpoint Discipline Selection:** A dropdown menu labeled "Endpoint Discipline" with the selected option "Select an Endpoint Discipline".
- Axes selection:** A section titled "Select category matrix display X and Y axes" containing a table and a radio button.

Axes	X	Y
<input checked="" type="radio"/>	CAS Number	Endpoint
<input type="radio"/>	Endpoint	CAS Number

Below the table is a radio button labeled "One CAS Number at a time".

The browser's taskbar at the bottom shows the Start button, several application icons, and the system tray with the time "1:04 PM". The active window title is "EPA - HPVIS - Microsof...".

Phys/Chem Endpoint Matrix

EPA - HPVIS - Netscape Browser

http://aspub.epa.gov/opp/hpv/fer_readacross.controlTable

Category Matrix Report

Category Name : C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category (view chemicals) Endpoint Discipline : Physical-Chemical

Endpoint Name	Melting Point (Z)	Boiling Point (Z1)	Vapor Pressure (1N)	Partition Coefficient (Q)	Water Solubility (6)	Density/Specific Gravity	Viscosity	Surface Tension	Dissociation Constant	Non-Saturated pH	Solubility in Different Media	Granulometry	Flash Point	Fl
111-14-8 Heptanoic acid	= -8 °C Summary View All Results	= 223 °C @ 760 mm Hg Summary View All Results	= .015 kPa @ 25 °C Summary View All Results	= 2.42 Summary	= 5316 mg/L @ 25 °C Summary View All Results									
111-71-7 Heptanal	= -45 °C Summary View All Results	= 153 °C @ 760 mm Hg Summary View All Results	= .47 kPa @ 25 °C Summary View All Results	= 2.23 Summary View All Results	= 2274 mg/L @ 25 °C Summary									
112-05-0 Nonanoic acid			= .0003 kPa @ 25 °C Summary											
112-31-2 Decanal				= 4.8 Summary										
118-58-1 Benzoic acid, 2-hydroxy-, phenylmethyl ester				= 2.42 Summary										
124-07-2 Octanoic acid			= .006 kPa @ 25 °C Summary											
124-13-0 Octanal	= 170 °C @ 760 mm Hg Summary View All Results		= .21 kPa @ 25 °C Summary View All Results	= 2.78 Summary View All Results	= 715 mg/L @ 25 °C Summary									
124-19-6 Nonanal	= 191 °C @ 760 mm Hg Summary View All Results		= .053 kPa @ 20 °C Summary View All Results	= 3.27 Summary View All Results	= 132 mg/L @ 25 °C Summary									

Category Justification :
Chemical Category Order:

(K) indicates Key Study

<<< Previous

Find: Find Next Find Previous Highlight Match case

Done No Full Scan

Start EPA - HPVIS - Netscap... Document1 - Microsoft... Adobe Reader Norton 6:12 AM

Env Fate Endpoint Matrix

EPA - HPVIS - Netscape Browser

http://iaspub.epa.gov/opp/hpv/far_readacross.controlTable

U.S. Environmental Protection Agency

High Production Volume Information System (HPVIS)

Recent Additions | Contact Us Search: GO

EPA Home > Prevention Pesticides & Toxic Substances > Pollution Prevention & Toxics > High Production Volume (HPV) Challenge Program > High Production Volume Information System (HPVIS) > Category Matrix Report

Category Matrix Report

Category Name : C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category ([view chemicals](#)) Endpoint Discipline : Fate

Endpoint Name	Photodegradation (6)	Stability in Water (6)	Transport Between Environmental Compartments Fugacity/Dist (82)	Biodegradation (9)	Stability in Soil	Adsorption/Desorption to Soil	Bioaccumulation	Mode of Degradation in Actual Use	BOD5, COI or BOD5/COI Ratio																													
111-14-8 Heptanoic acid	Half Life: = 18.5 Hours Summary	Summary	Result Desc: Multimedia (Fugacity) Modeling Estimated Distribution and Media Concentration Air=22% Water=39.5% Soil=56% Sediment=0.147%	1 days = 116.5 % Degradation Readily Biodegradable 4 days = 54.5 % Degradation Readily Biodegradable Summary																																		
			<table border="1"> <thead> <tr> <th>Type</th> <th>Emissions (kg/h)</th> <th>Half-life (hr)</th> <th>Mass Distribution (percent)</th> <th>Loss by Reaction (percent)</th> <th>Loss by Advection (percent)</th> </tr> </thead> <tbody> <tr> <td>Air</td> <td></td> <td>37</td> <td>4.37</td> <td></td> <td></td> </tr> <tr> <td>Water</td> <td></td> <td>208</td> <td>39.5</td> <td></td> <td></td> </tr> <tr> <td>Soil</td> <td></td> <td>208</td> <td>56</td> <td></td> <td></td> </tr> <tr> <td>Sediment</td> <td></td> <td>832</td> <td>.147</td> <td></td> <td></td> </tr> </tbody> </table>	Type	Emissions (kg/h)	Half-life (hr)	Mass Distribution (percent)	Loss by Reaction (percent)	Loss by Advection (percent)	Air		37	4.37			Water		208	39.5			Soil		208	56			Sediment		832	.147							
Type	Emissions (kg/h)	Half-life (hr)	Mass Distribution (percent)	Loss by Reaction (percent)	Loss by Advection (percent)																																	
Air		37	4.37																																			
Water		208	39.5																																			
Soil		208	56																																			
Sediment		832	.147																																			
111-71-7 Heptanal	Half Life: = 4.2 Hours Summary	Summary	Result Desc: Multimedia (Fugacity) Modeling Estimated Distribution and Media Concentration Air=3.31% Water=40.5% Soil=56% Sediment=0.132%	28 days = 74 % Degradation Readily Biodegradable 28 days = 53 % Degradation Readily Biodegradable Summary																																		
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Start | EPA - HPVIS - Netscap... | C6-C10 screen shots - Mi... | Adobe Reader | Norton | 6:18 AM

Ecotoxicity Endpoint Matrix

EPA - HPVIS - Netscape Browser

http://iaspub.epa.gov/opp/hpv/far_readacross.controlTable

U.S. Environmental Protection Agency

High Production Volume Information System (HPVIS)

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Category Matrix Report

Category Name : C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category ([view chemicals](#)) Endpoint Discipline : EcoToxicity

Endpoint Name	Acute Toxicity to Aquatic Vertebrates (18)	Acute Toxicity to Aquatic Invertebrates (9)	Acute Toxicity to Aquatic																																																																																										
111-14-8 Heptanoic acid	<p>Measured</p> <table border="1"> <thead> <tr> <th>Exposure Duration</th> <th>Exposure Units</th> <th>Type</th> <th>%</th> <th>Value Desc</th> <th>Mean Value or Lower Mean</th> <th>Upper Mean Value</th> <th>Units</th> <th>Effect Observed</th> <th>Basis for Concentration</th> </tr> </thead> <tbody> <tr> <td>96</td> <td>Hours</td> <td>LC</td> <td>50</td> <td>></td> <td>92</td> <td></td> <td>mg/L</td> <td></td> <td>Nominal</td> </tr> </tbody> </table> <p>Summary View All Results</p>	Exposure Duration	Exposure Units	Type	%	Value Desc	Mean Value or Lower Mean	Upper Mean Value	Units	Effect Observed	Basis for Concentration	96	Hours	LC	50	>	92		mg/L		Nominal	<p>Estimated by Calculation</p> <table border="1"> <thead> <tr> <th>Exposure Duration</th> <th>Exposure Units</th> <th>Type</th> <th>%</th> <th>Value Desc</th> <th>Mean Value or Lower Mean</th> <th>Upper Mean Value</th> <th>Units</th> <th>Effect Observed</th> <th>Basis for Concentration</th> </tr> </thead> <tbody> <tr> <td>48</td> <td>Hours</td> <td>LC</td> <td>50</td> <td>=</td> <td>429</td> <td></td> <td>mg/L</td> <td></td> <td></td> </tr> </tbody> </table> <p>Summary</p>	Exposure Duration	Exposure Units	Type	%	Value Desc	Mean Value or Lower Mean	Upper Mean Value	Units	Effect Observed	Basis for Concentration	48	Hours	LC	50	=	429		mg/L			<p>Estimated by Calculation</p> <table border="1"> <thead> <tr> <th>Exposure Duration</th> <th>Exposure Units</th> <th>Type</th> <th>%</th> <th>Value Desc</th> <th>Mean Value or Lower Mean</th> <th>Upper Mean Value</th> <th>Units</th> <th>Effect Observed</th> <th>Basis for Concentration</th> </tr> </thead> <tbody> <tr> <td>96</td> <td>Hours</td> <td>EC</td> <td>50</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Summary</p>	Exposure Duration	Exposure Units	Type	%	Value Desc	Mean Value or Lower Mean	Upper Mean Value	Units	Effect Observed	Basis for Concentration	96	Hours	EC	50																																				
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112-31-2 Decanal																																																																																													
118-58-1 Benzoic acid, 2-hydroxy-, phenylmethyl ester																																																																																													

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Done

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Norton | No Full Scan | 6:20 AM

Health Effects Endpoint Matrix

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High Production Volume Information System (HPVIS)

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Category Matrix Report

Category Name : C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category ([view chemicals](#)) Endpoint Discipline : Health Effects

Endpoint Name	Acute Toxicity (17)	Repeated-Dose Toxicity (11)	Genetic Toxicity in vivo (6)	Genetic Toxicity in vitro (26)	Reproductive Toxicity (11)																																																																																		
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Done C6-C10 screen shots - Microsoft Word No Full Scan

Start EPA - HPVIS - Netscap... C6-C10 screen shots - Mi... Adobe Reader Norton 6:21 AM

Summary Info from HPVIS

- (111-14-8) Heptanoic acid
 - This chemical has 59 robust summaries.
- (111-71-7) Heptanal
 - This chemical has 63 robust summaries.
- (124-07-2) Octanoic acid
 - This chemical has 4 robust summaries.
- (124-13-0) Octanal
 - This chemical has 44 robust summaries.
- (112-05-0) Nonanoic acid
 - This chemical has 1 robust summaries.
- (124-19-6) Nonanal
 - This chemical has 66 robust summaries.
- (112-31-2) Decanal
 - This chemical has 1 robust summaries.

	Acute Oral Toxicity	Genotox <i>in vitro</i>	Repeated Dose*	Repro/Dev Tox
Heptanal	LD50 > 5 g/kg	Ames (-)	2 week dermal study & several oral studies of related aldehydes	Repro screen (-) Estimate: Dev (-)
Heptanoic acid	LD50 8.4 g/kg	Ames (-)	2 week dermal study, 4 week oral, chronic skin painting	Repro NOEL 200 mg/kg Dev (-)
Octanal	LD50 4.6 g/kg	Ames (-)	90 d feeding of mixture containing C8 - C12 aldehydes	Estimate: Dev (-) Repro (-)
Octanoic acid	LD50 ~ 1.41 g/kg	Ames (-)		Dev (-)
Nonanal	LD50 > 5 g/kg	Ames (-)	2 week dermal study	Estimate: Dev (-) Repro (-)
Nonanoic acid		Ames (-)	2 week dermal study	Dev (-)

Summary

- The HPVIS provides a useful tool for storing and accessing data to construct and support the use of categories in the HPV program
- Well constructed categories are an efficient aid for screening hazard assessments of chemicals

A graphic of a spiral-bound notebook with a brown cover and a light beige page. The spiral binding is on the left side. A thin horizontal line is drawn across the page, just above the main text.

Supplementary slides of other screen shots if needed

Customized ad hoc Query

The screenshot shows a web browser window titled "EPA - HPVIS - Windows Internet Explorer provided by Yahoo!". The address bar contains the URL "http://aspub.epa.gov/opptppv/hpv_ez.html#menu". The page content includes the EPA logo, the title "High Production Volume Information System (HPVIS)", and a search bar. Below the search bar, there are navigation links and a section titled "HPVIS Ad Hoc Query". A paragraph explains that the query allows users to select key data elements from HPVIS to build a tabular report or a CSV file. A list of three steps is provided to generate a query. The first step is "Start by selecting one view to be the focus of your query." Below this, there are two main sections: "Submission Information" and "Endpoint Results". Each section contains a table of links and descriptions.

Submission Information

Submission Information	View information on the submission.
Sponsor Information	View the sponsor and consortium information provided with the submissions.
Submitter Information	View information on the submitter of the submission and endpoint information.

Endpoint Results

All Endpoint Result Information	Search the entire result table for all test results recorded for any Endpoint.
Physical Chemical Endpoints	Search the Physical Chemical Discipline by Endpoint for specific result values related to PChem.
Fate Endpoints	Search the Fate Discipline by Endpoint for specific result values.
EcoTox Endpoints	Search the EcoTox Chemical Discipline by Endpoint for specific result.
Mammalian Health Endpoints	Search the Mammalian Health Discipline by Endpoint for specific result values.
Use and Exposure Endpoints	Search the Use and Exposure Discipline by Endpoint for specific result values.

Physical-Chemical SIDS

Insert the Name Fragment and Specify the Sort for the Output

The screenshot shows the EPA High Production Volume Information System (HPVIS) interface. The page title is "High Production Volume Information System (HPVIS)" and it is part of the U.S. Environmental Protection Agency. The current step is "STEP 3: Enter Search Criteria and Organize the Output".

Query Name: All Endpoint Result Information [Output Options for Selected Columns](#)

Column Name	Operator Definition	Search Value	Column Display Order	Sort Column	Sort Order	Where Only
CAS Number	Equal to		<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ascending	<input type="checkbox"/>
Chemical Category Name	Equal to		<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ascending	<input type="checkbox"/>
Ninth Collective Chemical Index Name	Containing	acid	<input type="checkbox"/>	<input type="checkbox"/>	Ascending	<input type="checkbox"/>

Buttons: Search Database, Get Results in Excel Format, Reset, Previous

Footer: EPA Home | Privacy and Security Notice
Last updated on Sunday, December 3rd, 2006
URL: http://aspub.epa.gov/opptppv/hpv_ez/retrieval_list

Custom Query Results ACID

EPA - HPVIS - Windows Internet Explorer provided by Yahoo!

http://aspub.epa.gov/opphpv/ HPV Ez Get Table

HPV Challenge Program Home
 How to Participate
 Who's Participating
 Information on HPV Chemicals
 HPV Challenge Program Robust Summaries, Test Plans & Comments
 Vol. Children's Chemical Eval. Pgm.
 Related Websites

HPVIS Ad hoc Query Results

Query Name: All Endpoint Result Information

Page No. 1

Get Results in Excel Format

Ninth Collective Chemical Index Name Containing acid

CAS Number	Chemical Category Name	Ninth Collective Chemical Index Name
15214-89-8	AMPS Category	1-Propanesulfonic acid, 2-methyl-2-[(1-oxo-2-propenyl)amino]-
5165-97-9	AMPS Category	1-Propanesulfonic acid, 2-methyl-2-[(1-oxo-2-propenyl)amino]-, monosodium salt
58374-69-9	AMPS Category	2-Acrylamido-2-methylpropane sulfonic acid, ammonium salt
11138-60-6	Aliphatic Esters Category	Decanoic acid, ester with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol octanoate
122-62-3	Aliphatic Esters Category	Decanedioic acid, bis(2-ethylhexyl) ester
126-57-8	Aliphatic Esters Category	Nonanoic acid, 2-ethyl-2-[[[(1-oxonyloxy)methyl]-1,3-propanediyl ester
16958-92-2	Aliphatic Esters Category	Hexanedioic acid, dodecyl ester
29806-73-3	Aliphatic Esters Category	Hexadecanoic acid, 2-ethylhexyl ester
31556-45-3	Aliphatic Esters Category	Octadecanoic acid, tridecyl ester
67762-52-1	Aliphatic Esters Category	Carboxylic acids, C5-9, hexaesters with dipentaerythritol
67762-53-2	Aliphatic Esters Category	Carboxylic acids, C5-9, tetraesters with pentaerythritol
68334-13-4	Aliphatic Esters Category	Fatty acids, tall-oil, 2-ethylhexyl esters
70729-68-9	Aliphatic Esters Category	Heptanoic acid, oxybis(2,1-ethanedioxy-2,1-ethanedioyl) ester
27859-58-1	Alkenyl Succinic Anhydride Category	Butanedioic acid, (tetrapropenyl)-
108419-32-5	Alkyl Acetate C6 - C13 Category	Acetic acid, C7-9-branched alkyl esters, C8-rich
108419-33-6	Alkyl Acetate C6 - C13 Category	Acetic acid, C8-10-branched alkyl esters, C9-rich
108419-34-7	Alkyl Acetate C6 - C13 Category	Acetic acid, C9-11-branched alkyl esters, C10-rich
108419-35-8	Alkyl Acetate C6 - C13 Category	Acetic acid, C11-14-branched alkyl esters, C13-rich
90438-79-2	Alkyl Acetate C6 - C13 Category	Acetic acid, C6-8-branched alkyl esters
1571-33-1	Benzene Phosphorous Dichloride and Phenylphosphinic Acid Category	Phosphonic acid, phenyl-
1779-48-2	Benzene Phosphorous Dichloride and Phenylphosphinic Acid Category	Phosphonic acid, phenyl-
118-58-1	Benzyl Derivatives Category	Benzoic acid, 2-hydroxy-, phenylmethyl ester
119-36-8	Benzyl Derivatives Category	Benzoic acid, 2-hydroxy-, methyl ester
120-51-4	Benzyl Derivatives Category	Benzoic acid, phenylmethyl ester
410-44-4	Benzyl Derivatives Category	Benzoic acid, phenylmethyl ester

Done

Start | HPVIS Screen shots - Mic... | EPA - HPVIS - Window... | Internet | 100% | Norton | 8:36 PM

Search for Members of the Category

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High Production Volume Information System (HPVIS)

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STEP 3: Enter Search Criteria and Organize the Output

Query Name: All Endpoint Result Information [Output Options for Selected Columns](#)

Column Name	Operator Definition	Search Value	Column Display Order	Sort Column	Sort Order	Where Only
CAS Number	Equal to			3	Ascending	<input type="checkbox"/>
Chemical Category Name	Containing	aldehydes and		1	Ascending	<input type="checkbox"/>
Ninth Collective Chemical Index Name	Equal to			2	Ascending	<input type="checkbox"/>

Search Database Get Results in Excel Format Reset Previous

Results for Aldehyde

The screenshot shows a Microsoft Internet Explorer browser window displaying the EPA's High Production Volume Information System (HPVIS) website. The browser's address bar shows the URL: http://iaspub.epa.gov/oppphpv/hpv_ez.get_table. The website header includes the U.S. Environmental Protection Agency logo and the text "High Production Volume Information System (HPVIS)". A search bar is visible with a "GO" button. The main content area displays the title "HPVIS Ad hoc Query Results" and "Query Name: Submission Information". Below this, it indicates "Page No. 1" and provides a button to "Get Results in Excel Format". A table with the following columns is shown: "CAS Number", "Chemical Category Name", and "Ninth Collective Chemical Index Name". The table contains one entry: "C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category". At the bottom of the page, it states "Total number of records returned from your query: 1" and "Number of Records shown on this page: 1 ***".

U.S. Environmental Protection Agency
High Production Volume Information System (HPVIS)

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HPVIS Ad hoc Query Results

Query Name: Submission Information

Page No. 1

Chemical Category Name Containing aldehyde

CAS Number	Chemical Category Name	Ninth Collective Chemical Index Name
	C6-C10 Aliphatic Aldehydes and Carboxylic Acids Category	

Total number of records returned from your query: 1
Number of Records shown on this page: 1 ***

Select Parameters and Output for an Endpoint – Oral LD50

U.S. Environmental Protection Agency
High Production Volume Information System (HPVIS)

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EPA Home > Prevention Pesticides & Toxic Substances > Pollution Prevention & Toxics > High Production Volume (HPV) Challenge Program > High Production Volume Information System (HPVIS) > HPVIS Ad hoc Query

STEP 3: Enter Search Criteria and Organize the Output

Query Name: All Endpoint Result Information Output Options for Selected Columns

Column Name	Operator Definition	Search Value	Column Display Order	Sort Column	Sort Order	Where Only
CAS Number	Equal to		8	<input type="checkbox"/>	Ascending	<input type="checkbox"/>
Chemical Category Name	Equal to		9	<input type="checkbox"/>	Ascending	<input type="checkbox"/>
Concentration Percentage	Equal to	50	3	<input type="checkbox"/>	Ascending	<input type="checkbox"/>
Concentration Result Type	Equal to	LD	2	<input type="checkbox"/>	Ascending	<input type="checkbox"/>
Concentration Units	Equal to		6	<input type="checkbox"/>	Ascending	<input type="checkbox"/>
Concentration Value	Equal to		5	<input type="checkbox"/>	Ascending	<input type="checkbox"/>
Concentration Value Description	Equal to		4	<input type="checkbox"/>	Ascending	<input type="checkbox"/>
Ninth Collective Chemical Index Name	Containing	ester	7	<input type="checkbox"/>	Ascending	<input type="checkbox"/>
Route of Administration	Equal to	Oral	1	<input type="checkbox"/>	Ascending	<input type="checkbox"/>

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[EPA Home](#) | [Privacy and Security Notice](#)
 Last updated on Sunday, December 3rd, 2006
 URL: http://aspub.epa.gov/opptppv/hpv_ez_retrieval_list

Oral LD50 Values for Esters

Netscape Search - Netscape

http://search.netscape.com/ns/boomframe.jsp?query=HPVIS&page=1&offset=0&result_url=redir%3Fsrc%3Dwebsearch%26requestid%3D87f00e57b3244d70%26clickedItemRank%3D1%26userQuery%3C

Search HPVIS

Return to Results | Remove Frame

HPV Challenge Program Home
How to Participate
Who's Participating
Information on HPV Chemicals
HPV Challenge Program Robust Summaries, Test Plans & Comments
Vol. Children's Chemical Eval. Pgm.
Related Websites

HPVIS Ad hoc Query Results

Query Name: All Endpoint Result Information

Page No. 1

Get Results in Excel Format

Concentration Percentage Equal to 50
Concentration Result Type Equal to LD
Ninth Collective Chemical Index Name Containing ester
Route of Administration Equal to Oral

Route of Administration	Concentration Result Type	Concentration Percentage	Concentration Value Description	Concentration Value Units	Ninth Collective Chemical Index Name	CAS Number	Chemical Category Name
Oral	LD	50	>	5000 mg/kg-bw	Resin acids and Rosin acids, Me esters	68186-14-1	Rosin Esters Category
Oral	LD	50	>	2000 mg/kg-bw	Resin acids and Rosin acids, hydrogenated, Me esters	8050-15-5	Rosin Esters Category
Oral	LD	50	>	1000 mg/kg-bw	Resin acids and Rosin acids, esters with pentaerythritol	8050-26-8	Rosin Esters Category
Oral	LD	50	=	1590 mg/kg	Phosphorous acid, triphenyl ester	101-02-0	
Oral	LD	50	=	16000 mg/kg-bw	Carbamodithioic acid, dibutyl-, methylene ester	10254-67-6	
Oral	LD	50	=	8.72 Other	Nonanedioic acid, bis(2-ethylhexyl) ester	103-24-2	
Oral	LD	50	=	8.72 Other	Nonanedioic acid, bis(2-ethylhexyl) ester	103-24-2	
Oral	LD	50	=	50 mg/kg-bw	Acetic acid, chloro-, ethyl ester	105-39-5	
Oral	LD	50	=	180 mg/kg-bw	Acetic acid, chloro-, ethyl ester	105-39-5	
Oral	LD	50	=	235 mg/kg-bw	Acetic acid, chloro-, ethyl ester	105-39-5	
Oral	LD	50	circa	250 mg/kg-bw	Acetic acid, chloro-, ethyl ester	105-39-5	
Oral	LD	50	=	350 mg/kg-bw	Acetic acid, chloro-, ethyl ester	105-39-5	
Oral	LD	50	>=	2 Other	Butanoic acid, 3-oxo-, methyl ester	105-45-3	
Oral	LD	50	=	2.58 Other	Butanoic acid, 3-oxo-, methyl ester	105-45-3	
Oral	LU	50	=	3.37 Other	Butanoic acid, 3-oxo-, methyl ester	105-45-3	

Start | Netscape Search - Ne... | HPVIS Home Page - Micro... | Norton | 9:44 PM

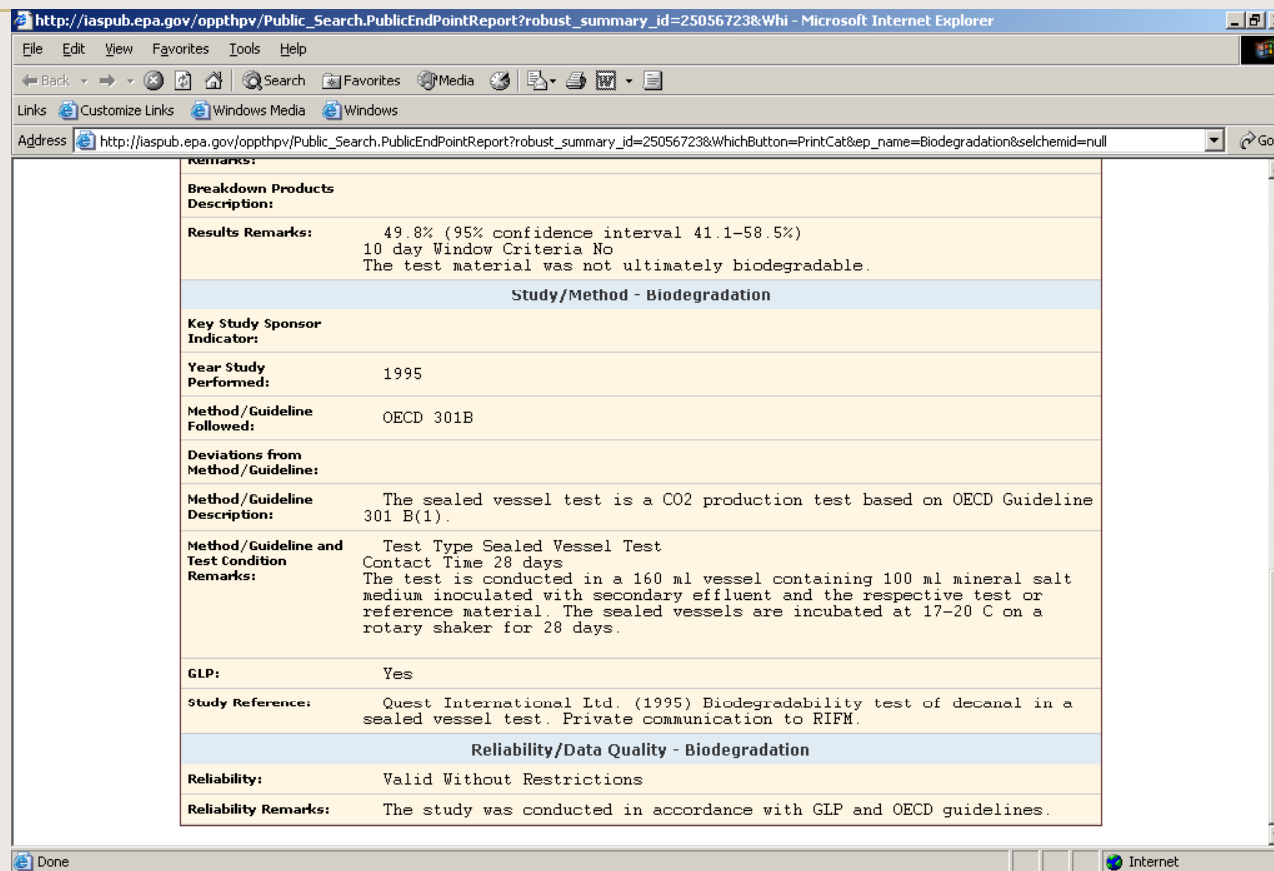
Can View Details of Read Across

The screenshot shows a Microsoft Internet Explorer browser window displaying a public search report. The address bar shows the URL: http://iaspub.epa.gov/opthpv/Public_Search.PublicEndPointReport?robust_summary_id=25145554&WhichButton=PrintCat&ep_name=Biodegradati. The report content is as follows:

Category Chemical Result Type:	Read-Across			
Test Substance Result Type:				
Results - Biodegradation				
Biodegradability Indicator:				
Effect:	Concentration Value	Time in Days	Biodegradation Value	Biodegradation Value Range
Half Life:				
Rate Constant:				
Temperature:				
Incubation Condition:				
Inoculum Type:				
Inoculum Concentration:				
Inoculum Remarks:				
Pre-Exposure Indicator:				
Pre-Exposure Remarks:				
Theoretical Carbon DiOxide:				
Theoretical Oxygen Demand:				
Chemical Oxygen Demand:				
Control Substance Remarks:				
Breakdown Products Description:				
Results Remarks:	See data for CAS RN 111-71-7, 124-19-6, 111-14-8.			

Read across for Octanal Biodegradation

Can Get Details of Any Result



http://iaspub.epa.gov/oppt/hpv/Public_Search.PublicEndPointReport?robust_summary_id=25056723&Whi - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print

Links Customize Links Windows Media Windows

Address http://iaspub.epa.gov/oppt/hpv/Public_Search.PublicEndPointReport?robust_summary_id=25056723&WhichButton=PrintCat&sep_name=Biodegradation&selchemid=null

Remarks:

Breakdown Products Description:	
Results Remarks:	49.8% (95% confidence interval 41.1-58.5%) 10 day Window Criteria No The test material was not ultimately biodegradable.
Study/Method - Biodegradation	
Key Study Sponsor Indicator:	
Year Study Performed:	1995
Method/Guideline Followed:	OECD 301B
Deviations from Method/Guideline:	
Method/Guideline Description:	The sealed vessel test is a CO2 production test based on OECD Guideline 301 B(1).
Method/Guideline and Test Condition Remarks:	Test Type Sealed Vessel Test Contact Time 28 days The test is conducted in a 160 ml vessel containing 100 ml mineral salt medium inoculated with secondary effluent and the respective test or reference material. The sealed vessels are incubated at 17-20 C on a rotary shaker for 28 days.
GLP:	Yes
Study Reference:	Quest International Ltd. (1995) Biodegradability test of decanal in a sealed vessel test. Private communication to RIFM.
Reliability/Data Quality - Biodegradation	
Reliability:	Valid Without Restrictions
Reliability Remarks:	The study was conducted in accordance with GLP and OECD guidelines.

Done Internet

Details of Biodegradation for Nonanal