

ENVIRONMENTAL PROTECTION AGENCY



OFFICE OF PESTICIDE PROGRAMS (OPP)

Active Pesticide Project Registration Informational Listing (APPRIL)

REST API Guide

Version 1.0

March 20, 2023

Table of Contents

1 APPRIL REST API – GENERAL INFORMATION 1

2 APPRIL DATABASE STRUCTURE AND FIELD VALUE INFORMATION 3

1 APPRIL REST API – General Information

The APPRIL website is hosted in EPA's public-facing Oracle Application Express (APEX) environment. This environment utilizes Oracle's Oracle REST Data Services product (ORDS) to provide web access to the underlying Oracle database and REST API access.

The functionality provided with ORDs enables APPRIL to require only one API endpoint – <https://ordspub.epa.gov/ords/pesticides/apprilapi/>

The URI without any parameters will attempt to return all records in the APPRIL database. It will default to 500 records and can be increased to a maximum of 10,000 records per call. The results will be in JSON format and will include information at the end including the number of records returned (up to the limit), if any more records are available, the current record limit, and links to fetch the next or previous set of results. **Note:** There are approximately 400,000 Section 3 and distributor product records in the database, approximately 50,000 active products and approximately 20,000 active FIFRA Section 3 products.

This URI can accept a query parameter `?q={<filter conditions>}` in JSON format that will search the APPRIL data and provide the filtered result set in JSON format. Filter conditions can be applied to any of the APPRIL data fields and has the power and flexibility of typical SQL where conditions, including the use of logical operators such as AND, OR. An `$orderby` clause can be included in the query filter to control the sort order of returned results, such as `(....., "$orderby":{"ri_and_dp_num_sort":"asc"})`.

Additional parameters that can be appended to the URI are the `&limit` and `&offset` parameters that will handle pagination and the number of records returned in one API call. The default number of records returned is 500 records and can be modified up to a maximum value of 10,000.

Query filter examples:

Product search:

[https://ordspub.epa.gov/ords/pesticides/apprilapi?q={"reg_num":"3-1"}](https://ordspub.epa.gov/ords/pesticides/apprilapi?q={)

Product Name search:

[https://ordspub.epa.gov/ords/pesticides/apprilapi?q={"product_name":{"\\$instr":"roundup"}}](https://ordspub.epa.gov/ords/pesticides/apprilapi?q={)

Product Name or Alternate Brand Name search:

[https://ordspub.epa.gov/ords/pesticides/apprilapi?q={"\\$or":{"product_name":{"\\$instr":"roundup"}},{"abns":{"\\$instr":"roundup"}}}](https://ordspub.epa.gov/ords/pesticides/apprilapi?q={)

Company search:

[https://ordspub.epa.gov/ords/pesticides/apprilapi?q={"company_num":"3"}](https://ordspub.epa.gov/ords/pesticides/apprilapi?q={)

Company, active products, and FIFRA Section 3 product search:

[https://ordspub.epa.gov/ords/pesticides/apprilapi?q={"company_num":"3","reg_type":"Sec3","status_group":"Active"}](https://ordspub.epa.gov/ords/pesticides/apprilapi?q={)

Ingredient search: (you can search by chemical name, name snippet, PC_Code, or CAS #)

[https://ordspub.epa.gov/ords/pesticides/apprilapi/?q={"ais":{"\\$instr":"atrazine"}}](https://ordspub.epa.gov/ords/pesticides/apprilapi/?q={)

[https://ordspub.epa.gov/ords/pesticides/apprilapi/?q={"ais":{"\\$instr":"080803"}}](https://ordspub.epa.gov/ords/pesticides/apprilapi/?q={)

[https://ordspub.epa.gov/ords/pesticides/apprilapi/?q={"ais":{"\\$instr":"1912-24-9"}}](https://ordspub.epa.gov/ords/pesticides/apprilapi/?q={)

Active Section3 Products to use on Mosquitoes at Wineries:

[https://ordspub.epa.gov/ords/pesticides/apprilapi/?q={"sites":{"\\$instr":"wineries"},"pests":{"\\$instr":"mosq"},"status_group":"Active","reg_type":"Sec3"}](https://ordspub.epa.gov/ords/pesticides/apprilapi/?q={)

Products Registered in 2023:

[https://ordspub.epa.gov/ords/pesticides/apprilapi/?q={"first_reg_dt":{"\\$gte":{"\\$date":"2023-01-01T00:00:00Z"}}}](https://ordspub.epa.gov/ords/pesticides/apprilapi/?q={)

Detailed information on the required syntax and operators along with additional samples can be found in the following Oracle documentation:

<https://docs.oracle.com/en/database/oracle/oracle-rest-data-services/22.4/orddg/developing-REST-applications.html#GUID-091748F8-3D14-402B-9310-25E6A9116B47>

<https://docs.oracle.com/en/database/oracle/simple-oracle-document-access/adsdi/soda-filter-specifications-reference.html#GUID-8DDB51EB-D80F-4476-9ABF-D6860C6214D1>

The formatting of the JSON document to be used as the query filter can be validated at

<https://jsonlint.com>.

The screenshot shows the JSONLint website interface. At the top, there's a navigation bar with the JSONLint logo and a 'Try the New Pro' button. Below the navigation bar, the main content area displays a JSON document:

```
1 {  
2   "company_num": "3"  
3 }
```

 Below the JSON document, there are two buttons: 'Validate JSON' and 'Clear'. To the right of these buttons is a 'Support JSONLint for \$2/Month' button. Below the buttons, the 'Results' section shows a green box with the text 'Valid JSON'.

2 APPRIL Database Structure and Field Value Information

The APPRIL database consists of the following fields:

	COLUMN_NAME	DATA_TYPE
1	REG_NUM	VARCHAR2 (30)
2	REG_TYPE	VARCHAR2 (10)
3	PRODUCT_NAME	VARCHAR2 (4000)
4	COMPANY_NUM	NUMBER (6)
5	COMPANY_NAME	VARCHAR2 (4000)
6	FIRST_REG_DT	DATE
7	STATUS	VARCHAR2 (50)
8	STATUS_DESC	VARCHAR2 (100)
9	STATUS_GROUP	VARCHAR2 (100)
10	STATUS_DT	DATE
11	USE_TYPE	VARCHAR2 (30)
12	SIGNAL_WORD	VARCHAR2 (20)
13	RUP_FLAG	VARCHAR2 (2)
14	RUP_REASON	VARCHAR2 (1000)
15	PESTICIDE_TYPE	VARCHAR2 (100)
16	PEST_CAT	VARCHAR2 (2000)
17	PHYS_FORM	VARCHAR2 (400)
18	AIS	CLOB
19	PESTS	CLOB
20	SITES	CLOB
21	TEAM	VARCHAR2 (200)
22	PM_EMAIL	VARCHAR2 (100)
23	RI_AND_DP_NUM_SORT	VARCHAR2 (20)
24	USE_PATTERN	VARCHAR2 (2500)
25	TRANSFER_HISTORY	VARCHAR2 (500)
26	ABNS	CLOB
27	ME_TOO_FLAG	VARCHAR2 (1)
28	ME_TOO_REFS	VARCHAR2 (250)
29	MAX_LABEL_DT	DATE
30	LABEL_DATES	VARCHAR2 (4000)
31	LABEL_NAMES	VARCHAR2 (4000)

Relational information for each product is concatenated into comma-separated text or CLOB fields and are searchable.

Sample APPRIL Record:

REG_NUM	45385-76
REG_TYPE	Sec3
PRODUCT_NAME	Cenol Mill Spray
COMPANY_NUM	45385
COMPANY_NAME	Ctx-Cenol, Inc.
FIRST_REG_DT	21-APR-89
STATUS	Registered
STATUS_DESC	Active - Registered
STATUS_GROUP	Active
STATUS_DT	21-APR-89
USE_TYPE	End Use
SIGNAL_WORD	Caution
RUP_FLAG	N
RUP_REASON	
PESTICIDE_TYPE	Conventional Chemical
PEST_CAT	Insecticide, Miticide
PHYS_FORM	Ready-to-Use Solution
AIS	Piperonyl butoxide (067501/51-03-6) - (2%), Pyrethrins (069001/8003-34-7) - (.5%),
PESTS	Angoumois Grain Moth, Angoumois Grain Moth (Adult), Ants, Cadelle, Cadelle (Adult), Carpet Beetle, Confused Flour Beetle, Confused Flour Beetle (Adult), Crawling Insects, Dermestid
SITES	Bakeries, Bottling Plants, Breweries, Candy Factories, Canneries, Dairy Plants, Eating Establishments (Indoor Edible), Flour Mills, Food Handling Equipment, Food Marketing/Stores
TEAM	Registration Division, Risk Management Team 4
PM_EMAIL	fertich.elizabeth@epa.gov
RLAND_DP_NUM_SORT	04538500076
USE_PATTERN	Indoor food use
TRANSFER_HISTORY	419-164 (04/21/1989) -> 45385-76
ABNS	Cenol Mill Spray (Primary Name)
ME_TOO_FLAG	
ME_TOO_REFS	
MAX_LABEL_DT	11-AUG-15
LABEL_DATES	08/11/2015, 02/06/2009, 07/03/2003, 06/28/1994, 05/30/1990
LABEL_NAMES	045385-00076-20150811.pdf, 045385-00076-20090206.pdf, 045385-00076-20030703.pdf, 045385-00076-19940628.pdf, 045385-00076-19900530.pdf

Field Descriptions:

Reg_Num (Varchar2) – Product registration number: Section 3 format – 999999-99999, distributor product format – 999999-999999-999999.

Reg_Type (Varchar2) – Type of product: Sec3 – Section 3 product, DP – Distributor product

Product Name (Varchar2) – Product name

Company_Num (Number) – Company Number

Company_Name (Varchar2) – Company Name

First_Reg_Dt (Date) – Date the product was registered

Status (Varchar2) – Product Status:

STATUS
1 Canceled
2 Conditionally Registered
3 Conditionally Reregistered
4 Registered
5 Reinstated
6 Reregistered

Status_Desc (varchar2) – Status description:

STATUS_DESC
1 Active - Conditionally Registered
2 Active - Conditionally Reregistered
3 Active - Registered
4 Active - Reinstated
5 Active - Reregistered
6 Inactive - Cancelled

Status_Group (varchar2):

STATUS_GROUP
1 Active
2 Inactive

Status_Dt (Date) – Date of latest action taken regarding the product.

Use_Type (Varchar2) – Product use type:

USE_TYPE
1 End Use
2 Manufacturing Use
3 Unknown
4 (null)

Signal_Word (Varchar2) – Denotes warnings related to product

SIGNAL_WORD
1 Caution
2 Danger
3 None
4 Warning
5 (null)

RUP_Flag (Varchar2) – Restricted Use Product Flag: (Y/N)

RUP_Reason (Varchar2) – Restricted Use Reason:

⚙ RUP_REASON
1 Additional evidence contained in field studies, use history, accident data, monitoring data, or other pertinent evidence indicates serious hazard to man or the envi
2 All other uses
3 All other uses ,Human Hazard
4 All products for outdoor use
5 Causes significant subchronic toxicity, chronic toxicity, or delayed toxic effects on man
6 Causes significant subchronic, chronic, or delayed toxic effects on man
7 Contains acute avian or mammalian oral LD50 of 50 mg/kg or less
8 Contains acute dermal LD50 of 2000 mg/kg or less
9 Contains acute inhalation LC50 of 0.05 mg/liter or less
10 Contains acute inhalation LC50 of 0.5 mg/liter or less
11 Contains acute oral LD50 of 50 mg/kg or less
12 Corrosive to the eye or causes corneal involvement or irritation persisting > 21 days
13 Corrosive to the skin
14 Corrosive to the skin or causes severe irritation
15 Granular products
16 Hazard to non-target species
17 Hazard to non-target species ,Additional evidence contained in field studies, use history, accident data, monitoring data, or other pertinent evidence indicates sei
18 Hazard to non-target species ,Other evidence
19 Human Hazard
20 Human Hazard ,All products for outdoor use
21 Human Hazard ,Birds - Application results in residue levels equal to or exceeding 1/5 of the avian subacute dietary LC50
22 Human Hazard ,Hazard to non-target species
23 Human Hazard ,Hazard to non-target species ,Other evidence
24 Human Hazard ,Other evidence
25 In water - Application results in residues equal to or exceeding 1/10 of the acute LC50 for non-target aquatic organisms likely to be exposed
26 In water - Application results in residues equal to or exceeding 1/10 of the acute LC50 for non-target aquatic organisms likely to be exposed ,Non-target organisms
27 Intended to be applied in such a manner that significant exposure to birds or mammals may occur.
28 Non-target organisms - Direct or indirect exposure causes significant mortality or effects on the physiology, growth, population levels, or reproduction rates of su
29 Other evidence
30 Residential and institutional uses
31 Residential and institutional uses ,Hazard to non-target species
32 Residential and institutional uses ,Other evidence
33 (null)

Pesticide_Type (Varchar2):

⚙ PESTICIDE_TYPE
1 Antimicrobial
2 Biochemical
3 Conventional Chemical
4 Microbial
5 Plant-Incorp. Protectant
6 (null)

Pest_Cat (Varchar2) – Pesticide Category - Comma separated list of categories attributed to the product:

ACARICIDE
 ALGAECIDE
 ALGICIDE
 ANTIBIOTIC
 ANTIFOULANT
 ANTIFOULING
 ANTIMICROBIAL
 ATTRACTANT
 AVICIDE
 BACTERIOCIDE
 BACTERIOCIDE/BACTERIOSTAT
 BACTERIOSTAT
 BIOCHEMICAL PESTICIDE
 BIOCID
 CHEMOSTERILANT
 CONTRACEPTIVE
 DEFOLIANT
 DESICCANT
 DISINFECTANT
 EMULSIFIER
 FEEDING DEPRESSANT
 FEEDING STIMULANT

FERTILIZER
FIRE RETARDANT
FUMIGANT
FUNGICIDE
FUNGICIDE AND NEMATOCIDE
FUNGICIDE/FUNGISTAT
FUNGISTAT
HERBICIDE
HERBICIDE AQUATIC
HERBICIDE TERRESTRIAL
INDUSTRIAL CHEMICAL
INSECT GROWTH REGULATOR
INSECTICIDE
INSECTICIDE SYNERGIST
INTRASTATE
MATING DISRUPTANT
MECHANICAL
MEDICAL WASTE TREATMENT
MICROBIAL PESTICIDE
MICROBICIDE
MICROBICIDE/MICROBISTAT
MICROBISTAT
MITICIDE
MOLLUSCICIDE
MOLLUSCICIDE AND TADPOLE SHRIMP
NEMATOCIDE
NONVIABLE MICROBIAL/TRANSGENIC PLANT
PLANT GROWTH REGULATOR
PLANT GROWTH STIMULANT
POISON, MULTIPLE DOSE
POISON, SINGLE DOSE
REGULATOR
REPELLENT
REPELLENT OR FEEDING DEPRESSANT
RODENTICIDE
SANITIZER
SEX ATTRACTANT
SEX ATTRACTANT OR FEEDING STIMULANT
SLIMACIDE
SLIMACIDES
SOIL FUMIGANT
SPORICIDE
STERILIZER
TADPOLE SHRIMPICIDE
TERMITICIDE
TUBERCULOCIDE
VIRUCIDE
WATER PURIFIER BACTERIACIDAL
WATER PURIFIER BACTERIASTATIC
WATER PURIFIER BACTERIOSTAT

Phys_Form (Varchar2) – Physical form of product:

Crystalline
Crystalline, Dust
Crystalline, Ready-to-Use Solution
Crystalline, Technical Chemical
Dust
Dust, Emulsifiable Concentrate
Dust, Granular
Emulsifiable Concentrate
Emulsifiable Concentrate, Flowable Concentrate
Emulsifiable Concentrate, Formulation Intermediate

Emulsifiable Concentrate, Granular
Emulsifiable Concentrate, Impregnated Materials
Emulsifiable Concentrate, Pressurized Liquid
Emulsifiable Concentrate, Soluble Concentrate
Emulsifiable Concentrate, Soluble Concentrate, Soluble Concentrate/Solid
Emulsifiable Concentrate, Soluble Concentrate/Solid, Wettable Powder
Emulsifiable Concentrate, Technical Chemical
Emulsifiable Concentrate, Water Dispersible Granule
Emulsifiable Concentrate, Water Soluble Packaging
Emulsifiable Concentrate, Wettable Powder
Flowable Concentrate
Flowable Concentrate, Formulation Intermediate
Flowable Concentrate, Granular
Flowable Concentrate, Soluble Concentrate
Flowable Concentrate, Soluble Concentrate, Technical Chemical
Flowable Concentrate, Wettable Powder
Formulation Intermediate
Formulation Intermediate, Formulation Unidentified
Formulation Intermediate, Ready-to-Use Solution
Formulation Intermediate, Soluble Concentrate
Formulation Intermediate, Technical Chemical
Formulation Intermediate, Water Soluble Packaging
Formulation Intermediate, Wettable Powder
Formulation Unidentified
Formulation Unidentified, Granular
Granular
Granular, Impregnated Materials
Granular, Microencapsulated
Granular, Pelleted/Tableted
Granular, Ready-to-Use Solution
Granular, Water Dispersible Granule
Granular, Wettable Powder
Impregnated Materials
Impregnated Materials, Ready-to-Use Solution
Invert-Emulsifiable Conc.
Microencapsulated
Microencapsulated, Soluble Concentrate
Oils (no added pesticide)
Oils (no added pesticide), Ready-to-Use Solution
Pelleted/Tableted
Pelleted/Tableted, Ready-to-Use Solution
Pelleted/Tableted, Soluble Concentrate/Solid
Pelleted/Tableted, Water Soluble Packaging
Pressurized Dust
Pressurized Dust, Pressurized Liquid
Pressurized Gas
Pressurized Gas, Pressurized Liquid
Pressurized Gas, Technical Chemical
Pressurized Liquid
Pressurized Liquid, Ready-to-Use Solution
Ready-to-Use Solution
Ready-to-Use Solution, Soluble Concentrate
Ready-to-Use Solution, Soluble Concentrate/Solid
Ready-to-Use Solution, Technical Chemical
Solid Agar
Solid Agar, Soluble Concentrate
Soluble Concentrate
Soluble Concentrate, Soluble Concentrate/Solid
Soluble Concentrate, Technical Chemical
Soluble Concentrate, Water Dispersible Granule
Soluble Concentrate, Water Soluble Packaging
Soluble Concentrate/Solid
Soluble Concentrate/Solid, Technical Chemical
Soluble Concentrate/Solid, Water Dispersible Granule
Technical Chemical
Technical Chemical, Water Dispersible Granule

Water Dispersible Granule
 Water Dispersible Granule, Water Soluble Packaging
 Water Soluble Packaging
 Water Soluble Packaging, Wettable Powder
 Wettable Powder
 Wettable Powder, Wettable Powder/Dust
 Wettable Powder/Dust

Als (CLOB) – Comma separated list of active ingredients in product, including chemical name, PC_Code, CAS #, and formulation percentage

Pests (CLOB) Comma separated list of pests that the product is allowed to treat.

List of Pests: <https://www.epa.gov/pesticides/epa-finalizes-updates-list-pests-significant-health-impProductortance>

Sites (CLOB) Comma separated list of sites where the product is allowed to be applied.

List of Sites: <https://www.epa.gov/pesticide-registration/pesticide-use-site-index>

Team (Varchar2) – Product Registration Team information

PM_Email (Varchar2) - Product Manager email address

RI_AND_DP_NUM_SORT (Varchar2) – use this field to properly sort results by the registration number

Use_Pattern (Varchar2) - Comma separated list of use patterns allowed for product.

Agricultural premises and equipment
 Antifouling coatings
 Aquatic areas
 Aquatic food crop
 Aquatic non-food residential
 Aquatic nonfood crop
 Aquatic nonfood industrial use
 Aquatic nonfood outdoor use
 Commercial, institutional and industrial premises and equipment
 Food handling/storage establishments premises and equipment
 Forestry use
 Greenhouse food crop
 Greenhouse nonfood crop
 High Exposure Antimicrobial
 Human drinking water systems
 Indoor food use
 Indoor medical use
 Indoor nonfood use
 Indoor use
 Industrial processes and water systems - not once through
 Industrial processes and water systems - once through
 Low Exposure Antimicrobial
 Materials preservatives
 Medical premises and equipment
 Occupational Use Conventional Chemical
 Residential
 Residential Indoor use
 Residential Use Conventional Chemical
 Residential and public access premises
 Residential outdoor use
 Swimming pools
 Terrestrial feed crop

Terrestrial food crop
Terrestrial nonfood crop
Wood preservatives

Transfer_History (Varchar2) – Chronological list of previous product numbers and transfer dates

ABNs – Alternate brand names (CLOB) – Comma separated list of alternate names assigned to product

Me_Too_Flag (Varchar2) – Flag specifying if the product is classified as a “Me-too”, a product that is substantially similar to another product

Me_Too_Ref (Varchar2) – Comma separated list of “parent” products that the “me-too” designation refers to

Max_Label_Date (Date) – Date of the latest label submitted to the EPA for the product

Label_Dates (Varchar2) – Comma separated list of dates for all Section 3 product labels submitted/accepted by the EPA

Label_Names (Varchar2) – Comma separated list of file names of the Section 3 product labels (pdfs) submitted/accepted by the EPA (format: 000003-00001-20210309.pdf). The actual files can be displayed and downloaded by prepending https://www3.epa.gov/pesticides/chem_search/ppls/ to a file name. For example: https://www3.epa.gov/pesticides/chem_search/ppls/000003-00001-20210309.pdf

If you have any questions regarding the use of the APPRIL system, you can submit them to APPRIL_Support@epa.gov. Questions regarding data-related issues can be directed to the appropriate product manager.