

NLM Pillbox API documentation

Pillbox beta API v2 documentation (updated 2011.09.27)

Pillbox and the data provided by this API are currently under development and are not intended for clinical use. This data is presented as part of a research and development effort. Images provided are not part of the FDA Structured Product Label and have not been verified by the manufacturer/labeler.

The Pillbox beta API v2 is RESTful. Output is XML.

All calls require an API key. Contact pillbox@mail.nih.gov to request a key or offer feedback. The number of keys will be limited during the API beta.

What's new in v2

- Additional data elements (inactive ingredients, DEA schedule, drug label author)
- New search parameters (imprint, inactive ingredients, DEA schedule, drug label author, lower_limit)
- Pagination - In situations where a query returns more than 200 records, Pillbox's API returns the first 200 records. Subsequent records must be requested by using the <lower_limit> parameter.

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1. Base URL

<http://pillbox.nlm.nih.gov/PHP/pillboxAPIService.php?>

2. Parameter

Input

key – Security key (required for API access)

shape – FDA SPL code for shape of pill (see definition below)

color – FDA SPL code for color of pill (see definition below)

score – Numeric value for FDA score value for pill (see definition below)

size – Numeric value (whole number) for size in mm of pill. Search +/- 2 mm

ingredient – Name of active ingredient. Currently only one ingredient may be searched in each call. There is currently no spellchecker.

prodcode -- FDA 9-digit Product Code in dashed format, consisting of Labeler Code (5 digits) and Product Segment (4 digits), with leading zeros padded. See [\[FDA National Drug Code Directory\]](http://www.fda.gov/Drugs/InformationOnDrugs/ucm142438.htm) for more information.

has_image – If 0, no image. If 1, image exists.

imprint – Alphanumeric text appearing on a pill. Search terms are substring matched (i.e., searching for "23" would return the following matches "0123" "2345" "1234"). Wildcards and Boolean operators are not supported. Multiple terms should be separated by %20.

dea – DEA schedule (see definition below)

author – Drug label author

inactive – Inactive ingredients, also known as excipients. See [FDA Inactive Ingredients Database](#) for additional information.

lower_limit – selects lower limit of range of records returned (see Pagination)

Return

Pills - Start/end tag for API return

pill - Start/end tag for an individual record

disclaimer - Important information regarding status/use of data and images

record_count - Total number of records matching query. Only the first 200 records are returned. (see Pagination)

SPL_ID - Identification variable. No longer utilized. Will be removed in subsequent release.

PRODUCT_CODE - FDA 9-digit Product Code in dashed format, consisting of Labeler Code (5 digits) and Product Segment (4 digits), with leading zeros padded. See [FDA National Drug Code Directory](#) for more information. (PRODUCT_CODE/NDC9 duplication is currently being evaluated.)

NDC9 - FDA 9-digit Product Code in dashed format, consisting of Labeler Code (5 digits) and Product Segment (4 digits), with leading zeros padded. See [\[FDA National Drug Code Directory\]](http://www.fda.gov/Drugs/InformationOnDrugs/ucm142438.htm) for more information. (PRODUCT_CODE/NDC9 duplication is currently being evaluated.)

SPLCOLOR - FDA SPL code for color of pill (see definition below)

SPLIMPRINT - Alphanumeric text appearing on a pill.

SPLSHAPE - FDA SPL code for shape of pill (see definition below)

SPLSIZE - Numeric value for size in mm of pill. Values contain 2 decimal places. These are rarely used.

SPLSCORE - Numeric value for FDA score value for pill (see definition below)

RXCUI - RXCUI number from [RxNorm](#)

RXTTY - RXTTY value from [RxNorm](#)

RXSTRING - RXSTRING from [RxNorm](#) or SPL_STRENGTH from SPL XML file (when RXSTRING is not available). A concatenated field containing drug name, dosage, dosage unit, and dosage form (i.e. Chlorzoxazone 500 MG Oral Tablet)

INGREDIENTS - Drug name in the <http://www.nlm.nih.gov/research/umls/rxnorm/overview.html> standardized vocabulary. This field contains does not contain branded drug names.

HAS_IMAGE - If 0, no image. If 1, image exists.

image_id - Image filename, if image exists. (see Section 7. Image URIs)

SETID - SETID from FDA SPL XML file (filename of the drug label XML file)

DEA_SCHEDULE_CODE - DEA schedule (see definition below)

AUTHOR - Drug label author

SPL_INACTIVE_ING - Inactive ingredients, also known as excipients. See [FDA Inactive Ingredients Database](#) for additional information.

3. Parameter definitions

Shape

FDA form and submission requirements for [shape](#).

FDA SPL codes for [shape](#).

Values and codes for **shape**.

BULLET C48335

CAPSULE C48336

CLOVER C48337

DIAMOND C48338

DOUBLE CIRCLE C48339

FREEFORM C48340

GEAR C48341

HEPTAGON (7 sided) C48342

HEXAGON (6 sided) C48343

OCTAGON (8 sided) C48344

OVAL C48345

PENTAGON (5 sided) C48346

RECTANGLE C48347

ROUND C48348

SEMI-CIRCLE C48349

SQUARE C48350

TEAR C48351

TRAPEZOID C48352

TRIANGLE C48353

Color

FDA form and submission requirements for [color](#).

FDA SPL codes for [color](#).

Values and codes for **color**.

BLACK C48323

BLUE C48333

BROWN C48332

GRAY C48324

GREEN C48329

ORANGE C48331

PINK C48328

PURPLE C48327

RED C48326

TURQUOISE C48334

WHITE C48325

YELLOW C48330

Score

FDA form and submission requirements for [score](#).

[from above link]

Description: A characteristic of an oral solid dosage form of a medicinal product, specifying the number of equal pieces that the solid dosage form can be divided into using score line(s).

Example: One score line creating two equal pieces is given a value of 2, two parallel score lines creating three equal pieces is given a value of 3.

Constraints: Whether three parallel score lines create four equal pieces or two intersecting score lines create two equal pieces using one score line and four equal pieces using both score lines, both have the scoring value of 4. Solid dosage forms that are not scored are given a value of 1. Solid dosage forms that can only be divided into unequal pieces are given a null-value with nullFlavor other (OTH).

Size

FDA form and submission requirements for [size](#).

[from above link]

Description; A characteristic of an oral solid dosage form of a medicinal product, specifying the longest single dimension of the solid dosage form as a physical quantity in the dimension of length (e.g., 3 mm).

Example: SPLSIZE for a rectangular shaped tablet is the length and SPLSIZE for a round shaped tablet is the diameter.

Constraints: The length is always in millimeters and should be rounded to the nearest whole millimeter.

DEA Schedule

FDA form and submission requirements for [DEA Schedule](#).

Values and codes for **DEA schedule**.

CI C48672

CII C48675

CIII C48676

CIV C48677

CV C48679

4. Pagination

In situations where a query returns more than 200 records, Pillbox's API returns the first 200 records. Subsequent records must be requested by using the `<lower_limit>` parameter.

5. Example API calls

Search for round, white pills containing "aspirin" as an ingredient.

[http://pillbox.nlm.nih.gov/PHP/pillboxAPIService.php?key=\(API_key\)&shape=C48348&color=C48325&ingredient=aspirin](http://pillbox.nlm.nih.gov/PHP/pillboxAPIService.php?key=(API_key)&shape=C48348&color=C48325&ingredient=aspirin)

Search for pill with FDA Product Code 0078-0176.

[http://pillbox.nlm.nih.gov/PHP/pillboxAPIService.php?prodcode=0078-0176&key=\(API_key\)](http://pillbox.nlm.nih.gov/PHP/pillboxAPIService.php?prodcode=0078-0176&key=(API_key))

Search for round, green pills, 15 mm (+/- 2mm) in size.

[http://pillbox.nlm.nih.gov/PHP/pillboxAPIService.php?shape=C48348&color=C48329&size=15&key=\(API_key\)](http://pillbox.nlm.nih.gov/PHP/pillboxAPIService.php?shape=C48348&color=C48329&size=15&key=(API_key))

6. Example output (XML)

[http://pillbox.nlm.nih.gov/PHP/pillboxAPIService.php?shape=C48348&color=C48329&size=15&key=\(API_key\)](http://pillbox.nlm.nih.gov/PHP/pillboxAPIService.php?shape=C48348&color=C48329&size=15&key=(API_key))

<Pills>

<disclaimer>Pillbox and the data provided by this API are currently under development and are not intended for clinical use. This data is presented as part of a research and development effort. Images provided are not part of the FDA Structured Product Label and have not been verified by the manufacturer/labeler.</disclaimer>

<record_count>2</record_count>

<pill>

<SPL_ID>0</SPL_ID>

<PRODUCT_CODE>0135-0076</PRODUCT_CODE>

<NDC9>001350076</NDC9>

<SPLCOLOR>C48329</SPLCOLOR>

<SPLIMPRINT>TUMS</SPLIMPRINT>

<SPLSHAPE>C48348</SPLSHAPE>

<SPLSIZE>16.00</SPLSIZE>

<SPLSCORE>1</SPLSCORE>

<RXCUI></RXCUI>

<RXTTY></RXTTY>

<RXSTRING>TUMS (CALCIUM CARBONATE 750 mg) </RXSTRING>

<INGREDIENTS></INGREDIENTS>

<HAS_IMAGE></HAS_IMAGE>

<image_id></image_id>

<SETID>593a0494-d669-4bcf-8412-b92645b2d76c</SETID>

<DEA_SCHEDULE_CODE></DEA_SCHEDULE_CODE>

<AUTHOR>GlaxoSmithKline"Consumer"Healthcare"LP</AUTHOR>

<SPL_INACTIVE_ING>SUCROSE"/"STARCH,"CORN"/"TALC"/"MINERAL"OIL"/"SODIUM"POLYMETAPHOSPHATE"/"FD&C"YELLOW"NO."5

</pill>

<pill>

<SPL_ID>0</SPL_ID>

<PRODUCT_CODE>68387-375</PRODUCT_CODE>

<NDC9>683870375</NDC9>

<SPLCOLOR>C48329</SPLCOLOR>

<SPLIMPRINT>555;585;Barr</SPLIMPRINT>

```
<SPLSHAPE>C48348</SPLSHAPE>
<SPLSIZE>17.00</SPLSIZE>
<SPLSCORE>2</SPLSCORE>
<RXCUI>197502</RXCUI>
<RXTTY>SCD</RXTTY>
<RXSTRING>Chlorzoxazone 500 MG Oral Tablet</RXSTRING>
<INGREDIENTS>Chlorzoxazone</INGREDIENTS>
<HAS_IMAGE></HAS_IMAGE>
<image_id></image_id>
<SETID>5af155d7-3780-435b-9a87-0ce01f1ed6ec</SETID>
<DEA_SCHEDULE_CODE></DEA_SCHEDULE_CODE>
<AUTHOR>Keltman"Pharmaceuticals"Inc.</AUTHOR>
<SPL_INACTIVE_ING>COLLOIDAL"SILICON"DIOXIDE"/"CROSCARMELLOSE"SODIUM"/"DOCUSATE"SODIUM"/"ANHYDROUS"LACTOSE
</pill>
</Pills>
```

7. Image URIs

Images are available in four sizes and are not returned with output. Images use the following URIs and `<image_id>` suffixes.

super_small – 91 x 65 (this image size is currently .png)

http://pillbox.nlm.nih.gov/assets/super_small/<image_id>ss.png

small – 161 x 115

http://pillbox.nlm.nih.gov/assets/small/<image_id>sm.jpg

medium – 448 x 320

http://pillbox.nlm.nih.gov/assets/medium/<image_id>md.jpg

large – 840 x 600

http://pillbox.nlm.nih.gov/assets/large/<image_id>lg.jpg

Examples:

http://pillbox.nlm.nih.gov/assets/super_small/000551ss.png

<http://pillbox.nlm.nih.gov/assets/small/000551sm.jpg>

<http://pillbox.nlm.nih.gov/assets/medium/000551md.jpg>

<http://pillbox.nlm.nih.gov/assets/large/000551lg.jpg>

8. Known limitations/issues

- Images are available for only ~1,000 records of the ~10,000 in Pillbox.
- Images do not have consistent aspect ratio.
- Images do not have unified image type (both .png and .jpg are currently used).
- `<AUTHOR>` and `<SPL_INACTIVE_ING>` fields contain double quotation marks (") in place of spaces.

9. Upcoming API upgrades

Schema upgrades

- Discrete dosage and dose unit fields (ex: dosage = 500, dosage_unit = MG). Field name have not yet been assigned.
- Replace double quotation marks (") with spaces in <AUTHOR> and <SPL_IMACTIVE_ING> fields.
- Remove <SPL_ID> from schema.

Pillbox and the API will soon leave beta. Once in production, API keys will not be required, but will be accepted in calls for 180 days. Image types and availability will be affected. Additional details will be provided before the production launch.