



GS1 US Data Hub® View/Use API Developer Portal User Guide

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Table of Contents

<u>API Tools (OpenAPI, Odata)</u>	3
<u>GS1 US APIs</u>	4
<u>GS1 US Data Hub Developer Portal Home Page</u>	6
<u>Profile Screen</u>	7
<u>API Screen</u>	8
<u>API “Try It” and Search Functionality</u>	9
<u>Usage Analytics</u>	12
<u>Browser Considerations</u>	13
<u>Appendix A – Sample Product API Results</u>	14
<u>Appendix B – Sample Location API Results</u>	16
<u>Appendix C – Sample Company API Results</u>	20
<u>Appendix D – Error Messages</u>	21
<u>Glossary of Terms</u>	22

API Tools

GS1 US APIs operate under the OpenAPI (or Odata) standards. Information and tools associated with these platforms can be accessed directly from the managing organizations as outlined below.

OpenAPI Information and Tools

The OpenAPI Specification is a community-driven open specification within the OpenAPI Initiative, a Linux Foundation Collaborative Project. OpenAPI documents describe an API's services and are represented in either YAML or JSON formats. These documents may either be produced and served statically or be generated dynamically from an application.

A list of known tools that implement the 3.0.0 specification of OpenAPI can be found at the URL below:

<https://github.com/OAI/OpenAPI-Specification/blob/master/IMPLEMENTATIONS.md>

A list of issues, presented as a Users Forum, with the current specification of OpenAPI can be found at the URL below. This is an excellent resource for developers in identifying and addressing problems that they may have with the structure and behavior of their API(s). Note that this site also contains general notifications about meetings and activities of the community:

<https://github.com/OAI/OpenAPI-Specification/issues>

OData Information and Tools

OData is an [ISO/IEC approved, OASIS standard](#) that defines a set of best practices for building and consuming RESTful APIs.

A set of code libraries for OData can be found at the URL below:

<https://www.odata.org/libraries/>

A list of issues, presented as a Users Forum, with the current specification of OpenAPI can be found at the URL below. This is an excellent resource for developers in identifying and addressing problems that they may have with the structure and behavior of their API(s). Note that this site also contains general notifications about meetings and activities of the community:

GS1 US APIs

Product

GS1 US Product API is based on the OpenAPI standard. GS1 US is currently supporting 3 versions of this API, with V5 and V6 being maintained in support of legacy API users. The Product API is a search API and is currently restricted to Data Hub View/Use subscriptions.

[Product API - v5](#)

[Product API - v6](#)

[Product API - v7](#)

Product Search of the GS1 Registry Platform

Data Hub | Product View/Use and Web API subscribers can run GTIN searches through the Global GS1 Registry Platform through a separate end-point from their Data Hub searches. The Request URL (end-point) can be found on the Product API page of the Data Hub Developers Portal by selecting the "Get GTIN from GRP" option.

The screenshot shows the GS1 US Product API interface. At the top, there is a 'Select API' dropdown menu set to 'v7'. Below this, there is a search bar for 'Search operations' and a dropdown for 'API definition' with a 'Changelog' link. The main content area is titled 'Get products by GTIN' and includes a 'Try it' button. Underneath, there is a 'Group by tag' toggle switch. A list of endpoints is shown: a 'POST' endpoint 'Get products by GTIN' and a 'GET' endpoint 'Search multiple produ...'. A red box highlights the 'Request' section for the 'POST' endpoint, which contains the URL: `https://api.stage.gs1us.org/product/v7/Products/v7/GetProductsByGTIN`.

Location

GS1 US Location APIs are REST-based APIs. GS1 US currently supports a search API for Data Hub View/Use subscriptions (Location-API).

[Location API - v4](#)

Company

GS1 US Data Hub | Company API is based on the OData standard. The Company API is a search API and is restricted to Data Hub View/Use subscriptions.

Note: V2 and V3 of the API will be deprecated in mid-late 2024. V4 should be used for any new implementations.

Company API - v4

Search for License Information by Company Name, Prefix, GTIN and GLN

GS1 US Licenses - Get All - v1

Downloads a compressed snapshot of all licenses from GS1 US.

Details on the search terms available for filtering searches on GS1 US APIs can be identified by reviewing the API result examples shown in Appendix A, Appendix B, and Appendix C of this guide.

GS1 US Data Hub Developer Portal Home Page

Home Page Overview

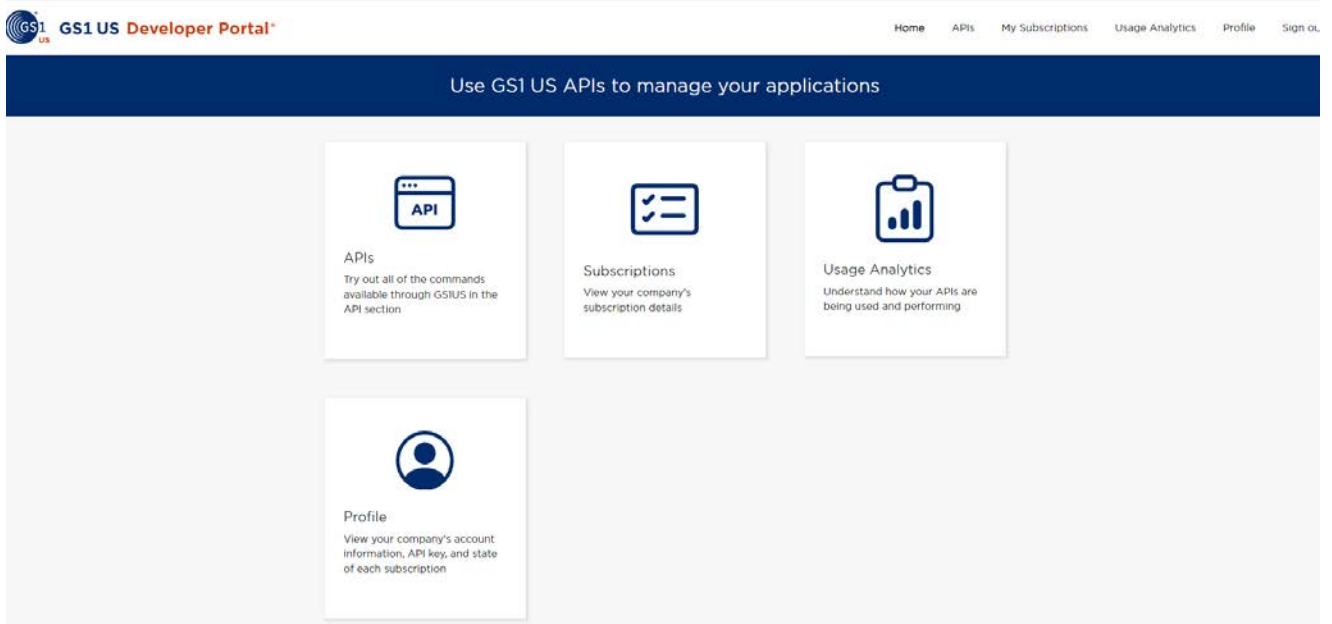
GS1 US Data Hub Developer Portal operates under the Azure API Management capabilities. The Developer Portal provides you with a way to test your APIs, check usage, and manage your subscriptions.

Use the tile menu to navigate within the Developer's Portal.

Contact GS1 US if you need support:

For API Administration: direct your questions to datahub@gs1us.org

For API Technical Questions: direct your questions to the datahubapi@gs1us.org mailbox



Profile Screen

The Profile screen provides information specific to your account and subscription details by GS1 US Data Hub subscription (Product, Company, Location, My Location) and status (Active, Inactive). This page allows you to customize the name of your API subscription, as well as display or regenerate primary and secondary keys.

User profile

Account details

Email: api@gs1us.org
First name: GS1 US Enterprises 1
Last name: 10528392
Registration date: 02/01/2019

Change name

Change password

Subscriptions

Subscription details		Product	State
Name	company-subscription	Company	Active
Primary key	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	Rename Show Regenerate	
Secondary key	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	Show Regenerate	


API Screen

On the API screen, you can view a listing of your currently defined applications, categorized by Company, Location, MyLocation and Product.

Click a version to hyperlink to the detail screen.

Each application has an access application identifier and an access application key.

APIs

 Search APIs

Group by tag



Name	Description	Type
Company API - v2		REST
Company API - v3		REST
GRP - GetAll - v1	Downloads a compressed snapshot of all GTIN data from the GS1 Registry Platform (GRP).	REST
GS1 US Licenses - Get All - v1	Downloads a compressed snapshot of all licenses from GS1 US.	REST
Location API - v4		REST
MyProduct - v1		REST

API “Try It” and Search Functionality

Before you invest in building your API, use the “Try It” feature on any API calls. With Try It, you can send an HTTP request interactively using the API Reference and immediately see the returned HTTP Response on the Developer Portal screen. The following pages provide highlights of each call.

Searches using the API may be performed using ODATA. Screen shots of OpenAPI searches are included at the end of this document. More information regarding the Odata specifications can be found at www.odata.org

“Try It”

Follow the steps below for all of the API References.

Select API v6

Search operations [Changelog](#)

1

Find a single product

Search for a Global Trade Item Number (GTIN) within the Product Database.

All Products returned have the status of In Use.

GET Find a single product

GET Get GTIN from GRP

GET Search multiple produ...

2

Parameters

Value is required.

+ Add parameter

HTTP request

GET https://api.gs1us.org/product/v6/Products/v6/{gtin} HTTP/1.1

Cache-Control: no-cache
ApiKey:

3

4


Body Raw Binary

Sample request body

- 1 Click the “Try IT” button to test your search sample using OpenAPI.
- 2 Enter a properly formatted value (GTIN, GLN, etc.) as required under **Parameters** for GET commands.
- 3 Click the Send button
- 4 **POST** commands require that identifier strings be entered under **Body** in place of the “string” text

Request Filters for Product API

Follow the steps below for all of the API References.



Group by tag

1 **POST** Get products by GTIN

GET Search multiple produ...

Search multiple products, OpenAPI search

All below are possible filters with 'exact, range and wild cards' matches. Each filter is treated as addit (aka "and" filter)

Exact Matches

- GTIN
- GTINStatus
- Industry
- GlobalProductCategory
- PackagingLevel

Range Filter

- ModifiedDateStartFrom - Inclusive using yyyy-MM-ddTHH:mm:ssZ format
- ModifiedDatePriorTo - Exclusive using yyyy-MM-ddTHH:mm:ssZ format

Wild Card Matches (Contains)

- CompanyName
- BrandName - Matches both BrandName and BrandName2
- ProductDescription - Matches both ProductDescription and ProductDescription2
- LabelDescription
- TargetMarket
- Prefix

Products

Request

GET `https://api.stage.gs1us.org/product/v7/Products/v7/Search[?CompanyName]&BrandName][&LabelDescription][&ProductDescription][>IN][>INStatus][&Industry][&TargetMarket][&GlobalProductClassification][&PackagingLevel][&ModifiedDateStartFrom][&ModifiedDatePriorTo][&SortField][&SortType][&PageSize][&Page]`

2 Request parameters

Name	In	Required	Type	Example
CompanyName	query	false	string	John Doe Chocolate
BrandName	query	false	string	JD Chocolate

1 Selecting the appropriate API operation will expand the request URL, parameters, headers, etc.

2 This example displays the request parameters for a multiple product search. Examples are included.

Note: Filter parameters are case sensitive

Usage Analytics

The Usage tab allows you to filter by date range, API type (product) and the operation (Get, Post).

Reports

Last hour

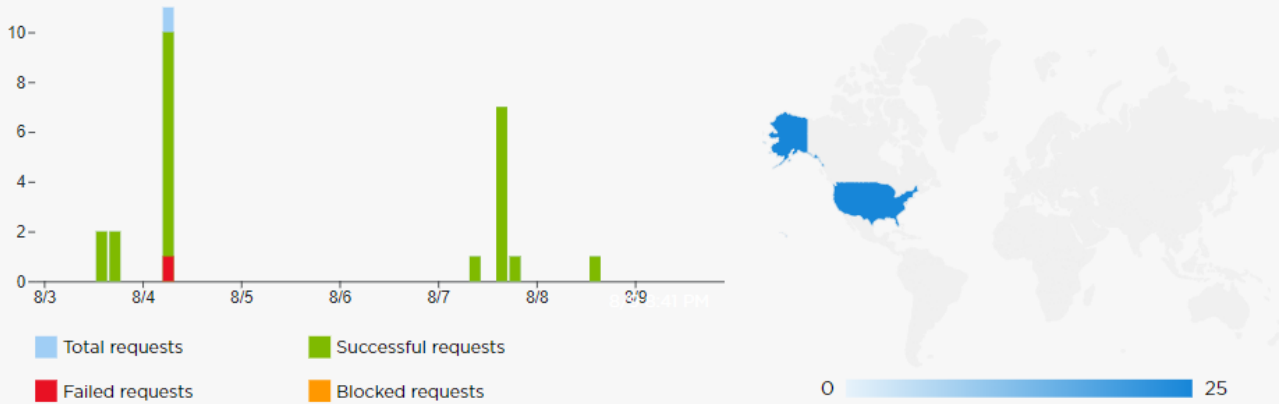
Today

Last 7 days

Last 30 days

Last 90 days

API calls



- 1 Select Time Period using the buttons at the top of the page
- 2 Data on total API Calls and their result, Data Transferred, and API response times is displayed.
- 3 Statistics for successful, blocked and failed calls are displayed for each API and API Operation. These stats count the number of times your application has sent a request to the Data Hub API.

APIs

API	Successful calls	Blocked calls	Failed calls	Other calls	Total calls	Response time	Bandwidth
Product API	18	0	1	0	19	416 ms	31 Kb
Location API	5	0	0	3	8	17 s	11 Kb

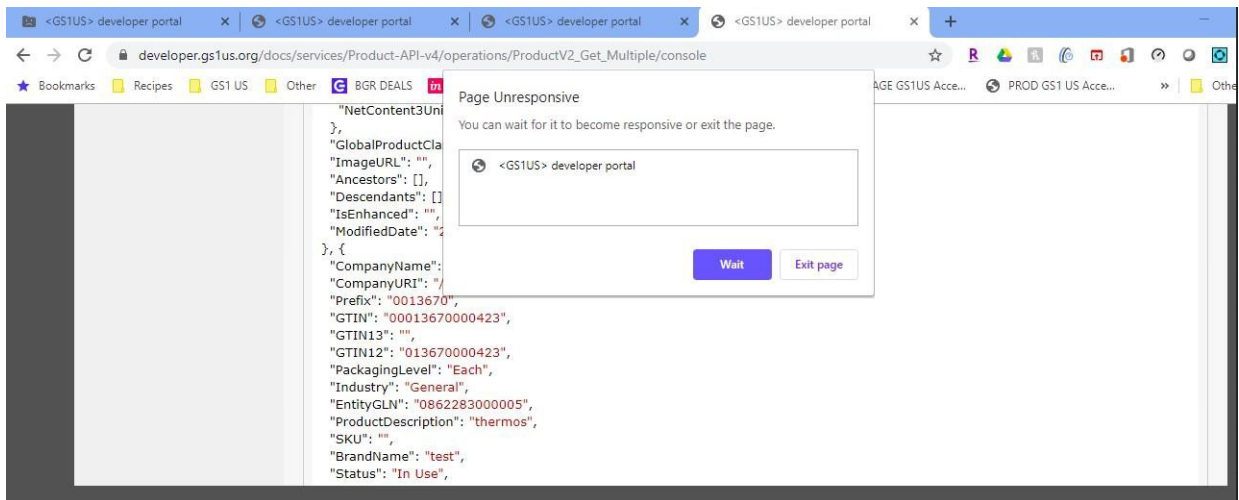
Browser Considerations

Warnings/Issues (Chrome Browser)

There is a known limitation within the Google Chrome browser for searches beyond a 1000 record limit. This issue will result in a page freeze for Data Hub API users who run their searches through the Developers Portal and who are using the Chrome browser.

The issue does not restrict any API searches performed outside of the platform and is a browser restriction (not a Data Hub platform restriction). API searches of greater than 1000 records operate properly within the Developer's Portal for all other Browsers (note that IE is not supported by Data Hub).

The browser limitation results in the frozen state pictured below.



Appendix A: Sample Product API Search Results

```
{
  "products": [
    {
      "gtin": "00816471025448",
      "brandName": [
        {
          "language": "en",
          "value": "Jane's Syrup Company"
        }
      ],
      "productDescription": [
        {
          "language": "en",
          "value": "Maple Syrup"
        }
      ],
      "dateUpdated": "2023-08-07T06:54:44.5370000Z",
      "isComplete": false,
      "gtinRecordStatus": "Active",
      "gs1licence": {
        "licenceKey": "081647102",
        "licenceType": "GCP",
        "licenceStatus": "ACTIVE",
        "licenseeName": "Medical Devices R Us",
        "licenseeGLN": "0816471020009",
        "licensingMO": {
          "moGLN": "0614141000005",
          "moName": "GS1 US"
        },
        "primaryMO": {
          "moGLN": "0614141000005",
          "moName": "GS1 US"
        },
        "address": {
          "streetAddress": {
            "language": "en",
            "value": "1009 Owl Pl"
          },
          "addressLocality": {
            "language": "en",
            "value": "Cherry Hill"
          },
          "countryCode": "US",
          "postOfficeBoxNumber": "",
          "addressRegion": {
            "language": "en",
            "value": "NJ"
          },
          "postalCode": "08003",

```

Appendix A: Sample Product API Search Results

```
    "countrySubdivisionCode": "US-NJ"
  },
  "dateCreated": "2016-05-12T21:04:27Z",
  "dateUpdated": "2019-10-08T16:30:57Z"
},
"gtin12": "816471025448",
"packagingLevel": "Each",
"industry": "CPG",
"entityGLN": "0816471020009",
"isVariable": false,
"isPurchasable": true,
"dimensions": {
  "height": 8.0,
  "width": 4.0,
  "depth": 2.0,
  "dimensionMeasure": "Inches"
},
"weight": {
  "grossWeight": 18.0,
  "netWeight": 17.0,
  "weightMeasure": "Ounces"
},
"ancestors": [
  "10816471025445",
  "20816471025442"
]
}
]
```

Appendix B: Sample Location API Search Results

```
{
  "companyName": "string",
  "state": "DRAFT",
  "industry": ["Consumer Packaged Goods",
  "Foodservice", "Apparel"],
  "supplyChainRole": ["Manufacturer", "Solution
  Provider", "Wholesaler/Distributor"],
  "glnTypes": {
    "legalEntity": {
      "glnStatus": "ACTIVE",
      "contactPoint": {
        "telephone": "+1 800 237 6832",
        "email": "info@example.com"
      },
      "name2": "Some Other Name",
      "replacesGLN": ["0814141000009"],
      "corporateRelationship": ["string"],
      "businessSector": "Aerospace Defense -
  Commercial Aircraft Manufacturing",
      "classOfTrade1": "NFP",
      "classOfTrade2": "IN",
      "classOfTrade3": "AD",
      "businessAttributes": ["Business Type", "Ship
  To/Sold To"],
      "organizationRole": ["GROWER", "PACKER"],
      "address": {
        "streetAddress": {
          "language": "fr",
          "value": "Avenue Louise 326"
        },
        "streetAddressLine2": {
          "language": "fr",
          "value": "Blue Tower"
        },
        "addressSuburb": {
          "language": "fr",
          "value": "IXELLES"
        },
        "addressLocality": {
          "language": "fr",
          "value": "BRUXELLES"
        },
        "addressRegion": {
          "language": "fr",
          "value": "Région de Bruxelles-Capitale"
        }
      },
      "postalCode": "B-1050",
      "countryCode": "BE",
      "countrySubdivisionCode": "BE-BRU",
      "postalName": {
        "language": "fr",
        "value": "GS1 AISBL - Global Office"
      }
    },
    "additionalOrganizationID": {
      "organizationID": "Foundation for Organic Ag",
      "organizationID_Type": "IFOA"
    },
    "organizationFormationDate": "19991231",
    "organizationTerminationDate": "20500101",
    "parentOrganization": {
      "gln": "string",
      "glnType": "LEGAL_ENTITY"
    },
    "organizationName": {
      "language": "en",
      "value": "Example Value"
    }
  },
  "fixedPhysicalLocation": {
    "glnStatus": "ACTIVE",
    "contactPoint": {
      "telephone": "+1 800 237 6832",
      "email": "info@example.com"
    },
    "name2": "Some Other Name",
    "replacesGLN": ["0814141000009"],
    "corporateRelationship": ["string"],
    "businessSector": "Aerospace Defense -
  Commercial Aircraft Manufacturing",
    "classOfTrade1": "NFP",
    "classOfTrade2": "IN",
    "classOfTrade3": "AD",
    "businessAttributes": ["Business Type", "Ship
  To/Sold To"],
    "locationRole": ["GROWER", "PACKER"],
    "additionalLocationID": {
      "locationID": "BRSJQ",
      "locationID_Type": "UN_LOCODE"
    }
  }
}
```


Appendix B: Sample Location API Search Results

```
"digitalLocation": {
  "glnStatus": "ACTIVE",
  "contactPoint": {
    "telephone": "+1 800 237 6832",
    "email": "info@example.com"
  },
  "name2": "Some Other Name",
  "replacesGLN": ["0814141000009"],
  "corporateRelationship": ["string"],
  "businessSector": "Aerospace Defense -
Commercial Aircraft Manufacturing",
  "classOfTrade1": "NFP",
  "classOfTrade2": "IN",
  "classOfTrade3": "AD",
  "businessAttributes": ["Business Type", "Ship
To/Sold To"],
  "locationRole": ["GROWER", "PACKER"],
  "additionalLocationID": {
    "locationID": "BRSJQ",
    "locationID_Type": "UN_LOCODE"
  },
  "locationOpeningDate": "19991231",
  "locationFinalClosureDate": "20000101",
  "digitalLocationName": {
    "language": "en-US",
    "value": "Static IP address associated with a
place like no other"
  },
  "digitalAddress": "127.0.0.1"
},
"function": {
  "glnStatus": "ACTIVE",
  "contactPoint": {
    "telephone": "+1 800 237 6832",
    "email": "info@example.com"
  },
  "name2": "Some Other Name",
  "replacesGLN": ["0814141000009"],
  "corporateRelationship": ["string"],
  "businessSector": "Aerospace Defense -
Commercial Aircraft Manufacturing",
  "classOfTrade1": "NFP",
  "classOfTrade2": "IN",
  "classOfTrade3": "AD",
  "businessAttributes": ["Business Type", "Ship
To/Sold To"],
  "organizationRole": ["GROWER", "PACKER"],
  "address": {
    "streetAddress": {
      "language": "fr",
      "value": "Avenue Louise 326"
    },
    "streetAddressLine2": {
      "language": "fr",
      "value": "Blue Tower"
    },
    "addressSuburb": {
      "language": "fr",
      "value": "IXELLES"
    },
    "addressLocality": {
      "language": "fr",
      "value": "BRUXELLES"
    },
    "addressRegion": {
      "language": "fr",
      "value": "Région de Bruxelles-Capitale"
    },
    "postalCode": "B-1050",
    "countryCode": "BE",
    "countrySubdivisionCode": "BE-BRU",
    "postalName": {
      "language": "fr",
      "value": "GS1 AISBL - Global Office"
    }
  },
  "additionalOrganizationID": {
    "organizationID": "Foundation for Organic Ag",
    "organizationID_Type": "IFOA"
  },
  "organizationFormationDate": "19991231",
  "organizationTerminationDate": "20500101",
  "parentOrganization": {
    "gln": "string",
    "glnType": "LEGAL_ENTITY"
  },
  "department": {
    "language": "en-US",
    "value": "AgriCorp BV - Finance"
  }, {
    "language": "nl-NL",
    "value": "AgriCorp BV - Financiën"
  }
}
```

Appendix B: Sample Location API Search Results

```
},  
  "comment": "The thorough use of internal documentation  
is one of the most-overlooked ways of improving software  
quality and speeding implementation.",  
  "modifiedDateTime": "1999-12-31T11:59:59Z",  
  "modifiedBy": "HappyDataHubUser@example.com",  
  "dateUSPSVerified": "string",  
  "gln": "string",  
  "prefix": "string",  
  "parentGln": "string"  
}
```

Appendix C: Sample Company API Search Results

```
"data": [{
  "gsrn": "101234500105283920",
  "upcCompanyPrefix": "850022878",
  "licenceKey": "0850022878",
  "licenceType": "GCP",
  "companyAccount": "10528392",
  "licenseeName": "GS1 Demo Account 1, INC.",
  "licenseeGln": "0814141000009",
  "licenceStatus": "Active",
  "primaryMO": {
    "moGLN": "0614141000005",
    "moName": "GS1 US"
  },
  "licensingMO": {
    "moGLN": "0614141000005",
    "moName": "GS1 US"
  },
  "address": {
    "streetAddress": {
      "language": "en",
      "value": "300 Charles Ewing Blvd"
    },
    "addressLocality": {
      "language": "en",
      "value": "Ewing"
    },
    "countryCode": "US",
    "countrySubdivisionCode": "US-NJ",
    "addressRegion": {
      "language": "en",
      "value": "NJ"
    },
    "postalCode": "08628-3400"
  },
  "dateCreated": "2021-03-31T01:47:52Z",
  "dateUpdated": "2021-03-31T01:47:52Z",
  "gtin": "00850022878077"
}]
```

Appendix D: Error Messages

GS1 US error messaging for API services generally follow REST HTTP Status Code standards using the below table.

HTTP Status Code	Description
200 OK	Successful.
201 Created	Created.
400 Bad Request	Bad input parameter. Error message should indicate which one and why.
401 Unauthorized	The client passed in the invalid Auth token. Client should refresh the token and then try again.
403 Forbidden	Customer doesn't exist. Application not registered. Application try to access to properties not belong to an App.
404 Not Found	Resource not found.
405 Method Not Allowed	The resource doesn't support the specified HTTP verb.
409 Conflict	Conflict.
412 Precondition Failed	Precondition failed.
500 Internal Server Error	Servers are not working as expected. The request is probably valid but needs to be requested again later.
503 Service Unavailable	Service Unavailable.

Glossary of Terms

Business Terms

BrandName: Indicates the name of the product line used with consumers

Entity GLN: A GLN that uniquely identifies a company that has a business relationship with GS1 US or another GS1 Member Organization. A single entity GLN can be associated with other GLNs or with one or more GS1 Company Prefixes.

GLN: Global Location Numbers are used to identify parties to business transactions; functional groups within a company; or real, physical “places” that might ship, receive, process, or hold inventories.

GS1 Company Prefix: The GS1 Company Prefix is at the heart of the GS1 system of identifiers. It forms the base for a family of identifiers that are globally unique and can be used for a host of different applications. GS1 assigns GS1 Company Prefixes to entities that administer the allocation of GS1 System identification numbers. GS1 Company Prefixes are between 7 and 11 digits in length. The GS1 Company Prefix is located on your prefix certificate, and it begins with a zero “0.”

GTIN: Global Trade Item Numbers uniquely identify trade items at all item and package levels, ensuring that they are always identified correctly anywhere in the world. Each trade item that is different from another is allocated a separate, unique GTIN. GTINs are encountered most frequently at retail point of sale and on inner packs, cases, and pallets of products in a distribution/warehouse environment. They are commonly used on purchase orders and in delivery and payment documents.

SKU: (Stock Keeping Unit) Internal company identifier

Target Market: Designated market of sale for the product

U.P.C. Company Prefix: A special representation of a GS1 Company Prefix, it is only used to create GTIN-12, Coupon-12, RCN-12, and VMN-12, which are encoded in a UPC-A Bar Code. This prefix is used specifically for creating a GTIN-12 for items that cross the point of sale. U.P.C. Company Prefixes are between 6 and 10 digits in length.

Technical Terms

AI: Application Identifier. AIs identify the meaning and format of data within a barcode.

API: Application Programming Interface. The API provided by GS1 US in the form of a web service exposing GS1 US certified data to licensed parties. GS1 US is the API provider. The licensed parties are the API consumers. API consumers create the end user product or service that retrieves GS1 US certified data in real-time, seamlessly integrated into licensed parties' business applications.

APIM: API Management. Tools to help publish APIs to external, partner, and employee developers securely and at scale.

EAN: International Article Number, European Article Number. Barcode encoding 13 digit number for retail point-of-sale.

EDI: Electronic Data Interchange. EDI enables the computer-to-computer exchange of business documents between companies using a standardized format.

GDSN: Global Data Synchronization Network. An Internet-based, interconnected network of interoperable data pools and the GS1 Global Registry® that enables companies to exchange standardized and synchronized supply chain data and accurate product information

GRP: GS1 Registry Platform. A "primary node" of authoritative data about all GS1 identifiers on the web.

JSON: JavaScript Object Notation. JSON is the Internet media type returned by the API provider within the HTTP response.

REST: Representational State Transfer: This has emerged as a predominant web API design model.