

Product API - Quick Reference

Endpoint Summary

Units

Method	Endpoint	Description
GET	/api/products/units/	List all units
POST	/api/products/units/	Create unit
GET	/api/products/units/{id}/	Get unit details
PATCH	/api/products/units/{id}/	Update unit
DELETE	/api/products/units/{id}/	Delete unit
GET	/api/products/units/statistics/	Unit statistics

Products

Method	Endpoint	Description
GET	/api/products/products/	List all products
POST	/api/products/products/	Create product
GET	/api/products/products/{id}/	Get product details
PATCH	/api/products/products/{id}/	Update product
DELETE	/api/products/products/{id}/	Delete product
GET	/api/products/products/{id}/variants/	Get product variants
POST	/api/products/products/{id}/add_variant/	Add variant to product
GET	/api/products/products/statistics/	Product statistics
GET	/api/products/products/catalog/	Complete catalog

Product Variants

Method	Endpoint	Description
GET	<code>/api/products/variants/</code>	List all variants
POST	<code>/api/products/variants/</code>	Create variant
GET	<code>/api/products/variants/{id}/</code>	Get variant details
PATCH	<code>/api/products/variants/{id}/</code>	Update variant
DELETE	<code>/api/products/variants/{id}/</code>	Delete variant
GET	<code>/api/products/variants/by_type/?type=X</code>	Variants by type
GET	<code>/api/products/variants/by_product/?product_id=X</code>	Variants by product
GET	<code>/api/products/variants/search_by_size/?min=X&max=Y</code>	Search by size
GET	<code>/api/products/variants/statistics/</code>	Variant statistics
POST	<code>/api/products/variants/bulk_create/</code>	Bulk create variants

Filtering & Search

Products

`?search=lpg` # Search by name/description
`?ordering=name` # Order by name

Variants

`?product=1` # Filter by product ID
`?variant_type=DOMESTIC` # Filter by type
`?unit=1` # Filter by unit ID
`?search=14.2` # Search by code/name
`?ordering=size` # Order by size

Variant Types

- `DOMESTIC` - Domestic use
- `COMMERCIAL` - Commercial use
- `INDUSTRIAL` - Industrial use
- `OTHER` - Other types

Common Queries

Get all domestic LPG cylinders

bash

GET `/api/products/variants/?variant_type=DOMESTIC&search=lpg`

Get cylinders between 10-20 kg

```
bash
```

```
GET /api/products/variants/search_by_size/?min_size=10&max_size=20
```

Get complete product catalog

```
bash
```

```
GET /api/products/products/catalog/
```

Get all variants for a product

```
bash
```

```
GET /api/products/products/1/variants/
```

Sample Data

Create Complete Product Setup

json

// 1. Create unit

POST /api/products/units/

```
{
  "short_name": "kg",
  "description": "Kilogram"
}
```

// 2. Create product

POST /api/products/products/

```
{
  "name": "LPG Gas Cylinder",
  "description": "LPG cylinders for various uses"
}
```

// 3. Create variant

POST /api/products/variants/

```
{
  "product_code": "LPG-14.2-DOM",
  "name": "14.2 kg Domestic",
  "product": 1,
  "unit": 1,
  "size": 14.2,
  "variant_type": "DOMESTIC"
}
```

Response Formats

List Response (Paginated)

json

```
{
  "count": 100,
  "next": "http://...?page=2",
  "previous": null,
  "results": [...]
}
```

Statistics Response

json

```
{
  "total_products": 5,
  "total_variants": 25,
  "top_products_by_variants": [...],
  "variants_by_type": {...}
}
```

Catalog Response

json

```
{
  "total_products": 3,
  "catalog": [
    {
      "id": 1,
      "name": "LPG Gas Cylinder",
      "description": "...",
      "variants": [...]
    }
  ]
}
```

Error Codes

- `200 OK` - Success
- `201 Created` - Resource created
- `400 Bad Request` - Invalid data
- `404 Not Found` - Resource not found
- `500 Internal Server Error` - Server error

Files Created

1. `/products/serializers.py` - All serializers
2. `/products/views.py` - All viewsets
3. `/products/urls.py` - URL configuration

Features Implemented

- ✓ Unit management (CRUD + statistics)
- ✓ Product management (CRUD + statistics + catalog)
- ✓ Variant management (CRUD + advanced filtering)
- ✓ Search by type, product, size range
- ✓ Bulk operations
- ✓ Comprehensive validation
- ✓ Optimized queries (select_related, prefetch_related)
- ✓ Pagination support
- ✓ Different serializers for list/detail/create operations
- ✓ Statistics endpoints
- ✓ Complete documentation