TM Forum Specification

Product Catalog Management Conformance Profile

TMF620B

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Introduction - API description

This document is the REST API Conformance for the Product Catalog API TMF620. The Product Catalog API allows defining product catalog entities such as offerings and specifications, creating pricing for offerings, and transferring information between catalogs.

Resource Model Conformance

API Mandatory Resources

The following table indicates the mandatory resources for this API.

Resource Name	Comment
ProductOffering	
ProductOfferingPrice	
ProductSpecification	

General Notes on Resource Attribute Conformance

There are three situations that could occur for an attribute:

- Mandatory attribute,

- Mandatory attribute if the optional parent attribute is present,

- Non-mandatory/Optional attribute. Those are all the other attributes not mentioned in the following subsections. Please refer to the corresponding API REST Specification for more details.

- The tables in the subsections below indicate which attributes are mandatory including mandatory when an optional parent is present.

- Where a resource is an input into an API (e.g. POST, PATCH), Mandatory means that the attribute value must be supplied by the API consumer in the input (and must not be blank or null).

- Where a resource is an output from an API (e.g. GET, POST), Mandatory means that the attribute value must be supplied by the API provider in the output (and must not be blank or null).

- For a sub-resource that is not an array, Mandatory (cardinality 1..1) means that the sub-resource must be present, while Optional (cardinality 0..1) means that the sub-resource may be absent. Mandatory and Optional on the sub-resource attributes apply to the sub-resource if present.

- For a sub-resource that is an array, Mandatory (cardinality 1..**) means that at least one sub-resource must be present in the array, while Optional (cardinality 0..**.**) means that the array may be absent. Mandatory and Optional on the sub-resource attributes apply to each of the sub-resources if present.

In this table are listed all mandatory attributes. A mandatory attribute MUST be retrieved in resource representation when no attribute selection is used (e.g. GET /../{id}) without any attribute selection

When an attribute is listed with an indentation (in second column) it means this attribute is mandatory if root (parent) attribute is present.

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ProductOffering Resource Mandatory Attributes

Mandatory attribute when parent is present	Rule
href	M Mandatory in response messages.
id	M Mandatory in request and response messages, except for POST request.
lastUpdate	M mandatory in response messages.
lifecycleStatus	M mandatory in response messages.
name	M Mandatory in request and response messages, except for PATCH request.
@type	M
agreement (if present)	Array of AgreementRef.
href	M if present mandatory in response messages.
id	M if present.
@referredType	M if present.
@type	M if present.
allowedAction (if present)	Array of AllowedProductAction.
action	M
@type	M if present.
allowedAction.channel (if present)	Array of ChannelRef.
href	M if present mandatory in response messages.

Mandatory attribute when parent is present	Rule
id	M if present.
@referredType	M if present.
@type	M if present.
attachment (if present)	Array of AttachmentRefOrValue.
attachmentType	M if present and is a value.
href	M mandatory on out messages if present and is a reference.
id	M if present and is a reference.
mimeType	M if present and is a value.
@referredType	M if present and is a reference.
@type	M if present.
attachment.size (if present)	
amount	M if present.
units	M if present.
bundledGroupProductOffering (if present)	If isBundle is true then either bundledProductOffering or BundledGroupProductOffering or both must have entries.
bundledProductOffering	M if present.
bundledGroupProductOffering.bundledProductOffering	if present.

Mandatory attribute when parent is present	Rule
href	M if present mandatory in response messages.
id	M if present.
name	M if present mandatory in response messages.
@referredType	M if present.
@type	M if present.
bundledGroupProductOffering.bundledProductOffering.bundledProductOfferingOption (if present)	
numberRelOfferDefault	M if present.
numberRelOfferLowerLimit	M if present.
numberRelOfferUpperLimit	M if present.
@type	M if present.
name	M if present mandatory in response messages.
@type	M if present.
bundledGroupProductOffering.bundledGroupProductOfferingOption (if present)	if present.
numberRelOfferLowerLimit	M if present.
numberRelOfferUpperLimit	M if present.

Mandatory attribute when parent is present	Rule
@type	M if present.
bundledProductOffering (if present)	Array of BundledProductOffering. If isBundle is true then either bundledProductOffering or BundledGroupProductOffering or both must have entries. See conditions for BundledProductOffering at bundledGroupProductOffering.bundled ProductOffering.
bundledProductOffering.bundledProductOfferingOption	M if present. See conditions for BundledProductOfferingOption at bundledGroupProductOffering.bundled ProductOffering.bundledProductOfferin gOption.
category (if present)	Array of CategoryRef.
href	M if present mandatory in response messages.
id	M if present.
name	M if present mandatory in response messages.
@referredType	M if present.
@type	M if present.
channel (if present)	Array of ChannelRef. See conditions for ChannelRef at allowedAction.channel.
externalIdentifier (if present)	
id	M
@type	M
marketSegment (if present)	Array of MarketSegmentRef.

Mandatory attribute when parent is present	Rule
href	M if present mandatory in response messages.
id	M if present.
@referredType	M if present.
@type	M if present.
place (if present)	Array of PlaceRef.
href	M if present mandatory in response messages.
id	M if present.
@referredType	M if present.
@type	M if present.
policy (if present)	
href	M if present mandatory in response messages.
id	M if present.
@referredType	M if present.
@type	M if present.
prodSpecCharValueUse (if present)	Array of ProductSpecificationCharacteristicValueUse.

Mandatory attribute when parent is present	Rule
id	M if present.
name	M if present.
productSpecCharacteristicValue	M Array of CharacteristicValueSpecification - there must be at least one value in this array.
prodSpecCharValueUse.productSpecCharacteristicValue	Array of CharacteristicValueSpecification - there must be at least one value in this array.
valueType	M if present.
@type	M if present.
valueType	M if present.
@type	M if present.
prodSpecCharValueUse.productSpecification (if present)	
href	M if present mandatory in response messages.
id	M if present.
name	M if present mandatory in response messages.
@referredType	M if present.
@type	M if present.
prodSpecCharValueUse.productSpecification.targetProduct Schema (if present)	

Mandatory attribute when parent is present	Rule
@schemaLocation	M if present.
@type	M if present.
productOfferingCharacteristic (if present)	Array of ProductOfferingCharacteristic.
id	M if present.
name	M if present.
valueType	M if present.
@type	M if present.
productOfferingCharacteristic.charSpecRelationship (if present)	
name	M
parentSpecificationId	M
relationshipType	M
@type	M if present.
productOfferingCharacteristic.characteristicValueSpecification (if present)	See conditions for CharacteristicValueSpecification at prodSpecCharValueUse.productSpecCharacteristicValue.
productOfferingPrice (if present)	Array of ProductOfferingPriceRefOrValue.
href	M if present mandatory in response messages.
id	M if present.
lastUpdate	M
lifecycleStatus	M

Mandatory attribute when parent is present	Rule
name	M if present mandatory in response messages.
priceType	M
@referredType	M if present and is reference.
@type	M if present.
productOfferingPrice.bundledPopRelationship (if present)	
href	M if present mandatory in response messages.
id	M if present.
@referredType	M if present.
@type	M if present.
productOfferingPrice.externalIdentifier (if present)	See conditions for ExternalIdentifier at externalIdentifier.
productOfferingPrice.place (if present)	See conditions for PlaceRef at place.
productOfferingPrice.policy (if present)	See conditions for PolicyRef at policy.
productOfferingPrice.popRelationship (if present)	
href	M if present mandatory in response messages.
id	M if present.
relationshipType	M
@referredType	M if present.
@type	M if present.

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Mandatory attribute when parent is present	Rule
productOfferingPrice.price (if present)	
unit	M if present.
value	M if present.
productOfferingPrice.pricingLogicAlgorithm (if present)	
href	M if present mandatory in response messages.
id	if present
@type	M if present.
productOfferingPrice.prodSpecCharValueUse (if present)	See conditions for ProductSpecificationCharacteristicValueUse at prodSpecCharValueUse.
productOfferingPrice.prodSpecCharValueUse.productSpecCharacteristicValue	M if containing class is present there must be at least one value in this array. See conditions for CharacteristicValueSpecification at prodSpecCharValueUse.productSpecCharacteristicValue.
productOfferingPrice.prodSpecCharValueUse.productSpecification (if present)	See conditions for ProductSpecificationRef at prodSpecCharValueUse.productSpecification.
productOfferingPrice.prodSpecCharValueUse.productSpecification.targetProductSchema (if present)	See conditions for TargetProductSchema at prodSpecCharValueUse.productSpecification.targetProductSchema.
productOfferingPrice.productOfferingTerm (if present)	
name	M
@type	M if present.
productOfferingPrice.productOfferingTerm.duration (if present)	
amount	M if present.

Mandatory attribute when parent is present	Rule
units	M if present.
productOfferingPrice.tax (if present)	
@type	M if present.
productOfferingPrice.tax.taxAmount (if present)	See conditions for Money at productOfferingPrice.price.
productOfferingPrice.unitOfMeasure (if present)	See conditions for Quantity at attachment.size.
productOfferingRelationship (if present)	Array of ProductOfferingRelationship.
href	M if present mandatory in response messages.
id	M if present.
relationshipType	M
@referredType	M if present.
@type	M if present.
productOfferingTerm (if present)	Array of ProductOfferingTerm. See conditions for ProductOfferingTerm at productOfferingPrice.productOfferingTerm.
productOfferingTerm.duration (if present)	See conditions for Duration at productOfferingPrice.productOfferingTerm.duration.
productSpecification (if present)	If isBundle is false this must be populated. See conditions for ProductSpecificationRef at prodSpecCharValueUse.productSpecification.
productSpecification.targetProductSchema (if present)	See conditions for TargetProductSchema at prodSpecCharValueUse.productSpecification.targetProductSchema.
resourceCandidate (if present)	

Mandatory attribute when parent is present	Rule
href	M if present mandatory in response messages.
id	M if present.
@referredType	M if present.
@type	M if present.
serviceCandidate (if present)	
href	M if present mandatory in response messages.
id	M if present.
@referredType	M if present.
@type	M if present.
serviceLevelAgreement (if present)	
href	M if present mandatory in response messages.
id	M if present.
@referredType	M if present.
@type	M if present.

ProductOfferingPrice Resource Mandatory Attributes

Mandatory attribute when parent is present	Rule
href	M Mandatory in response messages.
id	M Mandatory in request and response messages, except for POST request.
lastUpdate	M mandatory in response messages.
lifecycleStatus	M mandatory in response messages.
name	M Mandatory in request and response messages, except for PATCH request.
priceType	M if isBundle is false this must be populated, if isBundle is true it need not be populated.
@type	M
bundledPopRelationship (if present)	Array of BundledProductOfferingPriceRelationship.
href	M if present mandatory in response messages.
id	M if present.
@referredType	M if present.
@type	M if present.
externalIdentifier (if present)	
id	M
@type	M
place (if present)	Array of PlaceRef.

Mandatory attribute when parent is present	Rule
href	M if present mandatory in response messages.
id	M if present.
@referredType	M if present.
@type	M if present.
policy (if present)	
href	M if present mandatory in response messages.
id	M if present.
@referredType	M if present.
@type	M if present.
popRelationship (if present)	Array of ProductOfferingPriceRelationship.
href	M if present mandatory in response messages.
id	M if present.
relationshipType	M
@referredType	M if present.
@type	M if present.
price (if present)	

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Mandatory attribute when parent is present	Rule
unit	M if present.
value	M if present.
pricingLogicAlgorithm (if present)	Array of PricingLogicAlgorithm.
href	M if present mandatory in response messages.
id	M if present.
@type	M if present.
prodSpecCharValueUse (if present)	Array of ProductSpecificationCharacteristicValueUse.
name	M if present.
valueType	M
@type	M if present.
prodSpecCharValueUse.productSpecCharacteristicValue (if present)	Array of CharacteristicValueSpecification.
valueType	M
@type	M if present.
prodSpecCharValueUse.productSpecification (if present)	
href	M if present mandatory in response messages.
id	M if present.

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Mandatory attribute when parent is present	Rule
name	M if present mandatory in response messages.
@referredType	M if present.
@type	M if present.
prodSpecCharValueUse.productSpecification.targetProduct Schema (if present)	
@schemaLocation	M
@type	M if present.
productOfferingTerm (if present)	Array of ProductOfferingTerm.
name	M
@type	M if present.
productOfferingTerm.duration (if present)	
amount	M if present.
units	M if present.
tax (if present)	Array of TaxItem.
taxAmount	M if present. See conditions for Money at price.
tax.taxAmount	M if present. See conditions for Money at price.
@type	M if present.
unitOfMeasure (if present)	
amount	M if present.

Mandatory attribute when parent is present	Rule
units	M if present.

ProductSpecification Resource Mandatory Attributes

Mandatory attribute when parent is present	Rule
href	M Mandatory in response messages.
id	M Mandatory in request and response messages, except for POST request.
lastUpdate	M mandatory in response messages.
lifecycleStatus	M mandatory in response messages.
name	M Mandatory in request and response messages, except for PATCH request.
@type	M
attachment (if present)	Array of AttachmentRefOrValue.
attachmentType	M if present and is a value.
href	M mandatory on out messages if present and is a reference.
id	M if present and is a reference.
mimeType	M if present and is a value.
@referredType	M if present and is a reference.
@type	M if present.

Mandatory attribute when parent is present	Rule
attachment.size (if present)	
amount	M if present.
units	M if present.
bundledProductSpecification (if present)	Array of BundledProductSpecification.
href	M if present mandatory in response messages.
id	M if present.
name	M if present mandatory in response messages.
@type	M if present.
category (if present)	Array of CategoryRef.
href	M if present mandatory in response messages.
id	M if present.
name	M if present mandatory in response messages.
@referredType	M if present.
@type	M if present.
externalIdentifier (if present)	
id	M
@type	M
intentSpecification (if present)	

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Mandatory attribute when parent is present	Rule
href	M if present mandatory in response messages.
id	M if present.
@referredType	M if present.
@type	M if present.
policy (if present)	
href	M if present mandatory in response messages.
id	M if present.
@referredType	M if present.
@type	M if present.
productSpecCharacteristic (if present)	Array of ProductSpecificationCharacteristic.
name	M if present.
valueType	M
@type	M if present.
productSpecCharacteristic.charSpecRelationship (if present)	
name	M
parentSpecificationId	M
relationshipType	M
@type	M if present.

Mandatory attribute when parent is present	Rule
productSpecCharacteristic.characteristicValueSpecification (if present)	
@type	M if present.
productSpecificationRelationship (if present)	Array of ProductSpecificationRelationship.
href	M if present mandatory in response messages.
id	M if present.
relationshipType	M
@referredType	M if present.
@type	M if present.
productSpecificationRelationship.characteristic (if present)	Array of ProductSpecificationCharacteristic. See conditions for CharacteristicSpecification at productSpecCharacteristic.
productSpecificationRelationship.characteristic.charSpecRelationship (if present)	See conditions for CharacteristicSpecificationRelationship at productSpecCharacteristic.charSpecRelationship.
productSpecificationRelationship.characteristic.characteristicValueSpecification (if present)	See conditions for CharacteristicValueSpecification at productSpecCharacteristic.characteristicValueSpecification.
relatedParty (if present)	Array of RelatedPartyOrPartyRole.
partyOrPartyRole	M if present.
relatedParty.partyOrPartyRole	if present.
href	M if present mandatory in response messages.

Mandatory attribute when parent is present		Rule
	id	M if present.
	@referredType	M if present.
	@type	M if present.
	role	M if present.
	@type	M if present.
resourceSpecification (if present)		Array of ResourceSpecificationRef.
	href	M if present mandatory in response messages.
	id	M if present.
	name	M if present mandatory in response messages.
	@referredType	M if present.
	@type	M if present.
serviceSpecification (if present)		Array of ServiceSpecificationRef.
	href	M if present mandatory in response messages.
	id	M if present.
	name	M if present mandatory in response messages.

Mandatory attribute when parent is present	Rule
@referredType	M if present.
@type	M if present.
targetProductSchema (if present)	
@schemaLocation	M
@type	M if present.

Notification Model Conformance

There are no mandatory notifications for this API.

API Operations Conformance

For every single resource the following tables includes mandatory operations.

ProductOffering Mandatory Operations

The following table indicates which ones are mandatory for the ProductOffering resource:

Uniform API Operation	Comment
GET	
POST	
DELETE	
PATCH	

ProductOfferingPrice Mandatory Operations

The following table indicates which ones are mandatory for the ProductOfferingPrice resource:

Uniform API Operation	Comment
GET	
POST	
DELETE	
PATCH	

ProductSpecification Mandatory Operations

The following table indicates which ones are mandatory for the ProductSpecification resource:

Uniform API Operation	Comment
GET	
POST	
DELETE	
PATCH	

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API GET Operation Conformance

All the GET operations in this API share the same status code pattern.

GET	Mandatory/Optional
Response Status Code 200 if successful	M
Response Status Code 404 if not found	M

Definitions for Filter

The following definitions apply to all the GET operations:

- Filtered Search: A filtered search can be applied using query parameters to obtain only the resources that meet the criteria defined by the filtering parameters included in the query request. Several elements can be applied to the filtered search. In that case logic, a logical AND is applied to combine the criteria (e.g.:?severity=<value>&status=<value>).

- Attribute selection (Limiting Response Data): In order to limit which attributes are included in the response, the GET request can include the ?fields= query parameter. Only those attributes whose names are supplied in this parameter will be returned. Attribute selection capabilities are the same for collections retrieval and individual resource queries.

- Level: The filtering and attribute selection can apply to the top level properties (attributes) and subproperties. The tables below show which attributes need to be supported in top-level or contained resources.

GET /productOffering?fields=…&{filtering}

List or find ProductOffering objects.

Attribute selection is mandatory for all first level attributes except for the href attribute. Filtering on sub-resources is optional for all compliance levels

GET /productOffering/{id}?fields=…&{filtering}

This operation retrieves a ProductOffering entity. Attribute selection enabled for all first level attributes.

Attribute selection is mandatory for all first level attributes except for the href attribute. Filtering on sub-resources is optional for all compliance levels

GET /productOfferingPrice?fields=…&{filtering}

List or find ProductOfferingPrice objects.

Attribute selection is mandatory for all first level attributes except for the href attribute. Filtering on sub-resources is optional for all compliance levels

GET /productOfferingPrice/{id}?fields=…&{filtering}

This operation retrieves a ProductOfferingPrice entity. Attribute selection enabled for all first level attributes.

Attribute selection is mandatory for all first level attributes except for the href attribute. Filtering on sub-resources is optional for all compliance levels

GET /productSpecification?fields=…&{filtering}

List or find ProductSpecification objects.

Attribute selection is mandatory for all first level attributes except for the href attribute. Filtering on sub-resources is optional for all compliance levels

GET /productSpecification/{id}?fields=…&{filtering}

This operation retrieves a ProductSpecification entity. Attribute selection enabled for all first level attributes.

Attribute selection is mandatory for all first level attributes except for the href attribute. Filtering on sub-resources is optional for all compliance levels

API POST Operation Conformance

All the POST operations in this API share the same status code pattern.

POST	Mandatory/Optional
Status Code 201 if resource created	M

POST /productOffering?fields=…&{filtering}

This operation creates a ProductOffering entity.

The following table provides the list of mandatory attributes when creating an instance of the ProductOffering resource, including any possible rule, conditions and applicable default values.

Mandatory Attribute	Rule
lastUpdate	
lifecycleStatus	
name	
@type	

POST /productOfferingPrice?fields=…&{filtering}

This operation creates a ProductOfferingPrice entity.

The following table provides the list of mandatory attributes when creating an instance of the ProductOfferingPrice resource, including any possible rule, conditions and applicable default values.

Mandatory Attribute	Rule
lastUpdate	
lifecycleStatus	
name	
priceType	
@type	

POST /productSpecification?fields=…&{filtering}

This operation creates a ProductSpecification entity.

The following table provides the list of mandatory attributes when creating an instance of the ProductSpecification resource, including any possible rule, conditions and applicable default values.

Mandatory Attribute	Rule
lastUpdate	
lifecycleStatus	
name	
@type	

API PATCH Operation Conformance

All the PATCH operations in this API share the same status code pattern.

The mandatory application context is JSON Merge.

PATCH	Mandatory/Optional
Status Code 200 if resource modified	M

PATCH /productOffering/{id}?fields=…&{filtering}

This operation updates partially a ProductOffering entity.

Non Patchable Attribute	Rule
href	
id	
lastUpdate	
@baseType	@baseType is immutable
@schemaLocation	@schemaLocation is immutable
@type	@type is immutable

Patchable Attribute	Rule
agreement	
allowedAction	
attachment	
bundledGroupProductOffering	
bundledProductOffering	
category	
channel	
description	
externalIdentifier	
isBundle	
isSellable	
lifecycleStatus	
marketSegment	
name	
place	
policy	

Patchable Attribute	Rule
prodSpecCharValueUse	
productOfferingCharacteristic	
productOfferingPrice	
productOfferingRelationship	
productOfferingTerm	
productSpecification	
resourceCandidate	
serviceCandidate	
serviceLevelAgreement	
statusReason	
validFor	
version	

PATCH /productOfferingPrice/{id}?fields=…&{filtering}

This operation updates partially a ProductOfferingPrice entity.

Non Patchable Attribute	Rule
href	
id	
lastUpdate	
@baseType	@baseType is immutable
@schemaLocation	@schemaLocation is immutable
@type	@type is immutable

Patchable Attribute	Rule
bundledPopRelationship	
description	
externalIdentifier	
isBundle	
lifecycleStatus	
name	
percentage	
place	
policy	
popRelationship	

Patchable Attribute	Rule
price	
priceType	
pricingLogicAlgorithm	
prodSpecCharValueUse	
productOfferingTerm	
recurringChargePeriodLength	
recurringChargePeriodType	
tax	
unitOfMeasure	
validFor	
version	

PATCH /productSpecification/{id}?fields=…&{filtering}

This operation updates partially a ProductSpecification entity.

Non Patchable Attribute	Rule
href	
id	
lastUpdate	
@baseType	@baseType is immutable
@schemaLocation	@schemaLocation is immutable
@type	@type is immutable

Patchable Attribute	Rule
attachment	
brand	
bundledProductSpecification	
category	
description	
externalIdentifier	
intentSpecification	
isBundle	
lifecycleStatus	
name	
policy	

Patchable Attribute	Rule
productNumber	
productSpecCharacteristic	
productSpecificationRelationship	
relatedParty	
resourceSpecification	
serviceSpecification	
targetProductSchema	
validFor	
version	

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API DELETE Operation Conformance

All the DELETE operations in this API share the same status code pattern.

DELETE	Mandatory/Optional
Status Code 204 if resource deleted	M

DELETE /productOffering/{id}

This operation deletes a ProductOffering entity.

DELETE /productOfferingPrice/{id}

This operation deletes a ProductOfferingPrice entity.

DELETE /productSpecification/{id}

This operation deletes a ProductSpecification entity.

Acknowledgements

Release History

Release Number	Date	Release led by:	Description

Version History

Version Number	Date	Modified by	Description

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