

Circular Economy Ontology Network (CEON) - Product Module

Metadata

IRI

<http://w3id.org/CEON/ontology/product/>

Title

Circular Economy Ontology Network (CEON) - Product Module

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Version Iri

<http://w3id.org/CEON/ontology/product/0.4/>

Version Info

0.4

Preferred Namespace Prefix

product

Preferred Namespace Uri

<http://w3id.org/CEON/ontology/product/>

Description

The Product module of CEON (Circular Economy Ontology Network).

Covers Requirements

- In addition to requirements covered by imported ODPs, covers the following requirements from Onto-DESIDE D3.1: CVN-Resource-2, CVN-ResrouceType-4, C11-2, C12-1, C13-3, E2-1, T8-3.
- In addition to requirements covered by imported ODPs, covers the following requirements from Onto-DESIDE D2.3: CE5-2, C11-2, C12-1, C13-3, E2-1, T8-3.

Classes

Actor ^C	
IRI	http://w3id.org/CEON/ontology/actorODP/Actor
Resource Relation ^C	
IRI	http://w3id.org/CEON/ontology/actorODP/ResourceRelation
Super Class Of	resourceODP:Composition^C
Process ^C	
IRI	http://w3id.org/CEON/ontology/processODP/Process

Compliance^c

IRI <http://w3id.org/CE0N/ontology/product/Compliance>

In Domain Of [complianceWith](#)^{op}
[hasCertificate](#)^{dp}

In Range Of [hasCompliance](#)^{op}

Item^c

IRI <http://w3id.org/CE0N/ontology/product/Item>

Description An item is a physical object put into a market for sale, i.e. corresponding to an individual of a product. The item can be a thing that grows naturally or produced through some chemical or manufacturing processes.

Sub Class Of [resourceODP:PhysicalObject](#)^c

In Domain Of [hasProductObjectComponent](#)^{op}
[modelled by](#)^{op}

In Range Of [associatedWithProductObject](#)^{op}
[hasProductObjectComponent](#)^{op}

Restriction [modelled by](#)^{op} *exactly* 1 [Item](#)^c

Matter composition^c

IRI <http://w3id.org/CE0N/ontology/product/MatterComposition>

Description A product composition is the composed information of a product in terms of a specific component, in which such a component is also a matter.

Sub Class Of [resourceODP:Composition](#)^c

In Domain Of [associated with matter](#)^{op}

Restriction [associated with matter](#)^{op} *exactly* 1 [Matter composition](#)^c

Product^C

IRI <http://w3id.org/CE0N/ontology/product/Product>

Is Defined By ISO 59004:2024 -3.2.2 product

Description Physical-based object designed for or utilized with a purpose. A product can be, for example: goods of any type; hardware (e.g. engine mechanical part, spare parts, consumables); electrical or electronic hardware devices or components (e.g. computers, communication equipment and sensors); processed materials (e.g. lubricant, cement).
Represents the common sense notion of a product, i.e. the abstract notion of a product type, which is a model that is used for manufacturing items of that product.

Sub Class Of [Solution^C](#)

In Domain Of [has_product_component^{OP}](#)

In Range Of [associated_with_product_model^{OP}](#)
[batch_of_products^{OP}](#)
[has_product_component^{OP}](#)
[modelled_by^{OP}](#)

Restriction [hasComposition^{OP}](#) some [Product^C](#)
[hasComposition^{OP}](#) some [Product^C](#)

Product composition^C

IRI <http://w3id.org/CE0N/ontology/product/ProductComposition>

Description A product composition is the composed information of a product in terms of a specific component, in which such a component is also a product.

Sub Class Of [resourceODP:Composition^C](#)

In Domain Of [associated_with_product_model^{OP}](#)

Restriction [associated_with_product_model^{OP}](#) *exactly* 1 [Product composition^C](#)

Product Object Composition^C

IRI <http://w3id.org/CE0N/ontology/product/ProductObjectComposition>

Sub Class Of [resourceODP:Composition^C](#)

In Domain Of [associatedWithProductObject^{OP}](#)

Restriction [associatedWithProductObject^{OP}](#) *exactly* 1 [ProductObjectComposition^C](#)

Solution^c

IRI	http://w3id.org/CE0N/ontology/product/Solution
Is Defined By	ISO 59004:2024 - 3.2.1 solution
Description	Product or service, or a combination thereof, that fulfils a need of an interested party.
Super Class Of	Product^c

Batch Of Objects^c

IRI	http://w3id.org/CE0N/ontology/resourceODP/BatchOfObjects
In Domain Of	batch of products^{op}
Restriction	batch of products^{op} <i>exactly</i> 1 resourceODP:BatchOfObjects^c

Composition^c

IRI	http://w3id.org/CE0N/ontology/resourceODP/Composition
Sub Class Of	actorODP:ResourceRelation^c
In Domain Of	compositionOf^{op} Composition quantity^{dp}
In Range Of	hasComposition^{op}
Super Class Of	Matter composition^c Product composition^c ProductObjectComposition^c

Matter^c

IRI	http://w3id.org/CE0N/ontology/resourceODP/Matter
In Range Of	associated with matter^{op}

Physical Object^c

IRI	http://w3id.org/CE0N/ontology/resourceODP/PhysicalObject
Super Class Of	Item^c

Object Properties

associated with matter^{op}

IRI	http://w3id.org/CE0N/ontology/product/associatedWithMatter
Description	associatedWithMatter intends to represent the matter to which a matter composition information regards to.
Domain	Matter composition ^c
Range	resourceODP:Matter ^c

associated with product model^{op}

IRI	http://w3id.org/CE0N/ontology/product/associatedWithProductModel
Description	associatedWithProductModel intends to represent the product model to which a product composition information regards to.
Domain	Product composition ^c
Range	Product ^c

associated with product object^{op}

IRI	http://w3id.org/CE0N/ontology/product/associatedWithProductObject
Sub Property Of	topObjectProperty ^{op}
Domain	ProductObjectComposition ^c
Range	Item ^c

batch of products^{op}

IRI	http://w3id.org/CE0N/ontology/product/batchOfProduct
Description	batchOfProduct intends to represent what is the model product of a batch of objects.
Domain	resourceODP:BatchOfObjects ^c
Range	Product ^c

compliance with^{op}

IRI	http://w3id.org/CE0N/ontology/product/complianceWith
Domain	Compliance ^c

composition of^{op}

IRI <http://w3id.org/CE0N/ontology/product/compositionOf>

Domain [resourceODP:Composition](#)^c

Range [Product](#)^c or [resourceODP:Matter](#)^c or [Item](#)^c

has compliance^{op}

IRI <http://w3id.org/CE0N/ontology/product/hasCompliance>

Domain [Item](#)^c or [actorODP:Actor](#)^c or [Product](#)^c or <http://w3id.org/CE0N/ontology/processODP/Process>^c

Range [Compliance](#)^c

has composition^{op}

IRI <http://w3id.org/CE0N/ontology/product/hasComposition>

Description hasComposition intends to represent that a product model or physical object can have composition information.

Domain [Product](#)^c or [resourceODP:PhysicalObject](#)^c

Range [resourceODP:Composition](#)^c

has product component^{op}

IRI <http://w3id.org/CE0N/ontology/product/hasProductComponent>

Description hasProductComponent intends to represent that a product can have other product components.

Domain [Product](#)^c

Range [Product](#)^c

has product object component^{op}

IRI <http://w3id.org/CE0N/ontology/product/hasProductObjectComponent>

Domain [Item](#)^c

Range [Item](#)^c

modelled by^{dp}

IRI	http://w3id.org/CE0N/ontology/product/modelledBy
Description	modelledBy intends to represent that product objects follow particular product models.
Domain	Item ^c
Range	Product ^c

Datatype Properties

Composition quantity^{dp}

IRI	http://w3id.org/CE0N/ontology/product/compositionQuantity
Domain	resourceODP:Composition ^c
Range	xsd:double

country of assembly^{dp}

IRI	http://w3id.org/CE0N/ontology/product/countryOfAssembly
Sub Property Of	locationOfAssembly ^{dp}

country of manufacture^{dp}

IRI	http://w3id.org/CE0N/ontology/product/countryOfManufacture
Sub Property Of	locationOfManufacture ^{dp}

country of origin^{dp}

IRI	http://w3id.org/CE0N/ontology/product/countryOfOrigin
Sub Property Of	locationOfOrigin ^{dp}

has certificate^{dp}

IRI	http://w3id.org/CE0N/ontology/product/hasCertificate
Domain	Compliance ^c

location of assembly^{dp}

IRI	http://w3id.org/CE0N/ontology/product/locationOfAssembly
Super Property Of	countryOfAssembly ^{dp}
Domain	Item ^c or Product ^c
Range	xsd:string

location of manufacture^{dp}

IRI	http://w3id.org/CE0N/ontology/product/locationOfManufacture
Super Property Of	countryOfManufacture ^{dp}
Domain	Item ^c or Product ^c
Range	xsd:string

location of origin^{dp}

IRI	http://w3id.org/CE0N/ontology/product/locationOfOrigin
Super Property Of	countryOfOrigin ^{dp}
Domain	Product ^c or Item ^c
Range	xsd:string

Annotation Properties

contributor^{ap}

IRI	http://purl.org/dc/terms/contributor
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created^{ap}

IRI	http://purl.org/dc/terms/created
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creator^{ap}

IRI	http://purl.org/dc/terms/creator
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description^{ap}

IRI	http://purl.org/dc/terms/description
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license^{ap}

IRI	http://purl.org/dc/terms/license
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title^{ap}

IRI <http://purl.org/dc/terms/title>

preferred namespace prefix^{ap}

IRI <http://purl.org/vocab/vann/preferredNamespacePrefix>

preferred namespace uri^{ap}

IRI <http://purl.org/vocab/vann/preferredNamespaceUri>

covers requirements^{ap}

IRI <http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#coversRequirements>

Namespaces

:

<http://w3id.org/CEON/ontology/product/>

actorODP <http://w3id.org/CEON/ontology/actor0DP/>

dcterms <http://purl.org/dc/terms/>

odp <http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#>

owl <http://www.w3.org/2002/07/owl#>

prov <http://www.w3.org/ns/prov#>

rdf <http://www.w3.org/1999/02/22-rdf-syntax-ns#>

rdfs <http://www.w3.org/2000/01/rdf-schema#>

resourceODP <http://w3id.org/CEON/ontology/resource0DP/>

vann <http://purl.org/vocab/vann/>

xsd <http://www.w3.org/2001/XMLSchema#>

Legend

c	Classes
op	Object Properties
dp	Datatype Properties
ap	Annotation Properties