

Circular Economy Ontology Network (CEON) - Product Module

Metadata

IRI

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

Title

Circular Economy Ontology Network (CEON) - Product Module

Creator

Huanyu Li

Contributor

Eva Blomqvist

Mikael Lindecrantz

Robin Keskisärkkä

Date Created

2023-03-16

License

<https://creativecommons.org/licenses/by/4.0/>

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-ResourceType-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 D3.2: 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/CE0N/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/CEON/ontology/product/Product
<u>Is Defined By</u>	ISO 59004:2024 -3.2.2 product
<u>Description</u>	<p>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).</p> <p>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.</p>
<u>Sub Class Of</u>	Solution^C
<u>In Domain Of</u>	has product component^{OP}
<u>In Range Of</u>	associated with product model^{OP} batch of products^{OP} has product component^{OP} modelled by^{OP}
<u>Restriction</u>	hasComposition^{OP} some Product^C hasComposition^{OP} some Product^C

Product composition^C

IRI	http://w3id.org/CEON/ontology/product/ProductComposition
<u>Description</u>	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.
<u>Sub Class Of</u>	resourceODP:Composition^C
<u>In Domain Of</u>	associated with product model^{OP}
<u>Restriction</u>	associated with product model^{OP} <i>exactly</i> 1 Product composition^C

Product Object Composition^C

IRI	http://w3id.org/CEON/ontology/product/ProductObjectComposition
<u>Sub Class Of</u>	resourceODP:Composition^C
<u>In Domain Of</u>	associatedWithProductObject^{OP}
<u>Restriction</u>	associatedWithProductObject^{OP} <i>exactly</i> 1 ProductObjectComposition^C

Solution^c

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

Batch Of Objects^c

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

Composition^c

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

Matter^c

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

Physical Object^c

IRI	http://w3id.org/CE0N/ontology/resourceODP/PhysicalObject
<u>Super Class Of</u>	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/CEON/ontology/product/compositionOf
<u>Domain</u>	resourceODP:Composition ^C
<u>Range</u>	Product ^C or Item ^C or resourceODP:Matter ^C

has compliance^{op}

IRI	http://w3id.org/CEON/ontology/product/hasCompliance
<u>Domain</u>	Item ^C or actorODP:Actor ^C or Product ^C or http://w3id.org/CEON/ontology/processODP/Process ^C
<u>Range</u>	Compliance ^C

has composition^{op}

IRI	http://w3id.org/CEON/ontology/product/hasComposition
<u>Description</u>	hasComposition intends to represent that a product model or physical object can have composition information.
<u>Domain</u>	Product ^C or resourceODP:PhysicalObject ^C
<u>Range</u>	resourceODP:Composition ^C

has product component^{op}

IRI	http://w3id.org/CEON/ontology/product/hasProductComponent
<u>Description</u>	hasProductComponent intends to represent that a product can have other product components.
<u>Domain</u>	Product ^C
<u>Range</u>	Product ^C

has product object component^{op}

IRI	http://w3id.org/CEON/ontology/product/hasProductObjectComponent
<u>Domain</u>	Item ^C
<u>Range</u>	Item ^C

modelled by^{op}

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>

created^{ap}

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

creator^{ap}

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

description^{ap}

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

license ^{ap}	
IRI	http://purl.org/dc/terms/license
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/cannotation-schema.owl#coversRequirements

Namespaces

:	http://w3id.org/CE0N/ontology/product/
actorODP	http://w3id.org/CE0N/ontology/actorODP/
dcterms	http://purl.org/dc/terms/
odp	http://www.ontologydesignpatterns.org/schemas/cannotationschema.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/CE0N/ontology/resourceODP/
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