

# 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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### License

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### Version Iri

<http://w3id.org/CEON/ontology/product/0.3/>

### Version Info

0.3

### 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-ResouceType-4, C11-2, C12-1, C13-3, E2-1, T8-3.

## Classes

<b>Actor</b> <sup>c</sup>
<b>IRI</b> <a href="http://w3id.org/CEON/ontology/actorODP/Actor">http://w3id.org/CEON/ontology/actorODP/Actor</a>
<b>Resource Relation</b> <sup>c</sup>
<b>IRI</b> <a href="http://w3id.org/CEON/ontology/actorODP/ResourceRelation">http://w3id.org/CEON/ontology/actorODP/ResourceRelation</a>
<b>Super Class Of</b> <a href="#">resourceODP:Composition</a>
<b>Process</b> <sup>c</sup>
<b>IRI</b> <a href="http://w3id.org/CEON/ontology/processODP/Process">http://w3id.org/CEON/ontology/processODP/Process</a>

## Compliance<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/product/Compliance">http://w3id.org/CEON/ontology/product/Compliance</a>
<b>In Domain Of</b>	<a href="#">complianceWith<sup>op</sup></a> <a href="#">hasCertificate<sup>dp</sup></a>
<b>In Range Of</b>	<a href="#">hasCompliance<sup>op</sup></a>

## Matter composition<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/product/MatterComposition">http://w3id.org/CEON/ontology/product/MatterComposition</a>
<b>Description</b>	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.
<b>Sub Class Of</b>	<a href="#">resourceODP:Composition</a>
<b>In Domain Of</b>	<a href="#">associated with matter<sup>op</sup></a>
<b>Restriction</b>	<a href="#">associated with matter<sup>op</sup></a> <i>exactly</i> 1 <a href="#">Matter composition<sup>c</sup></a>

## Product model<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/product/Product">http://w3id.org/CEON/ontology/product/Product</a>
<b>Description</b>	Represents the common sense notion of a product, i.e. the abstract notion of a product type or product model, which is a model that is used for manufacturing products.
<b>In Domain Of</b>	<a href="#">has product component<sup>op</sup></a>
<b>In Range Of</b>	<a href="#">associated with product model<sup>op</sup></a> <a href="#">batch of products<sup>op</sup></a> <a href="#">has product component<sup>op</sup></a> <a href="#">modelled by<sup>op</sup></a>
<b>Restriction</b>	<a href="#">hasComposition<sup>op</sup></a> some <a href="#">Product model<sup>c</sup></a> <a href="#">hasComposition<sup>op</sup></a> some <a href="#">Product model<sup>c</sup></a>

## Product composition<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/product/ProductComposition">http://w3id.org/CEON/ontology/product/ProductComposition</a>
<b>Description</b>	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.
<b>Sub Class Of</b>	<a href="#">resourceODP:Composition</a>
<b>In Domain Of</b>	<a href="#">associated with product model<sup>op</sup></a>
<b>Restriction</b>	<a href="#">associated with product model<sup>op</sup></a> <i>exactly</i> 1 <a href="#">Product composition<sup>c</sup></a>

## Product object<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/product/ProductObject">http://w3id.org/CEON/ontology/product/ProductObject</a>
<b>Description</b>	A product object is a physical object put into a market for sale, i.e. corresponding to the notion of an item, which conforms to the abstract idea of a product model. The product can be a thing that grows naturally or produced through some chemical or manufacturing processes.
<b>Sub Class Of</b>	<a href="#">resourceODP:PhysicalObject</a>
<b>In Domain Of</b>	<a href="#">hasProductObjectComponent<sup>op</sup></a> <a href="#">modelled by<sup>op</sup></a>
<b>In Range Of</b>	<a href="#">associatedWithProductObject<sup>op</sup></a> <a href="#">hasProductObjectComponent<sup>op</sup></a>
<b>Restriction</b>	<a href="#">modelled by<sup>op</sup></a> exactly 1 <a href="#">Product object<sup>c</sup></a>

## Product Object Composition<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/product/ProductObjectComposition">http://w3id.org/CEON/ontology/product/ProductObjectComposition</a>
<b>Sub Class Of</b>	<a href="#">resourceODP:Composition</a>
<b>In Domain Of</b>	<a href="#">associatedWithProductObject<sup>op</sup></a>
<b>Restriction</b>	<a href="#">associatedWithProductObject<sup>op</sup></a> exactly 1 <a href="#">ProductObjectComposition<sup>c</sup></a>

## Object Properties

### associated with matter<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/product/associatedWithMatter">http://w3id.org/CEON/ontology/product/associatedWithMatter</a>
<b>Description</b>	associatedWithMatter intends to represent the matter to which a matter composition information regards to.
<b>Domain</b>	<a href="#">Matter composition<sup>c</sup></a>
<b>Range</b>	<a href="#">resourceODP:Matter</a>

### associated with product model<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/product/associatedWithProductModel">http://w3id.org/CEON/ontology/product/associatedWithProductModel</a>
<b>Description</b>	associatedWithProductModel intends to represent the product model to which a product composition information regards to.
<b>Domain</b>	<a href="#">Product composition<sup>c</sup></a>
<b>Range</b>	<a href="#">Product model<sup>c</sup></a>

associated with product object<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/product/associatedWithProduct">http://w3id.org/CEON/ontology/product/associatedWithProduct</a>
<b>Sub Property Of</b>	<a href="#">topObjectProperty<sup>op</sup></a>
<b>Domain</b>	<a href="#">ProductObjectComposition<sup>c</sup></a>
<b>Range</b>	<a href="#">Product object<sup>c</sup></a>

batch of products<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/product/batchOfProduct">http://w3id.org/CEON/ontology/product/batchOfProduct</a>
<b>Description</b>	batchOfProduct intends to represent what is the model product of a batch of objects.
<b>Domain</b>	<a href="#">resourceODP:BatchOfObjects</a>
<b>Range</b>	<a href="#">Product model<sup>c</sup></a>

compliance with<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/product/complianceWith">http://w3id.org/CEON/ontology/product/complianceWith</a>
<b>Domain</b>	<a href="#">Compliance<sup>c</sup></a>

composition of<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/product/compositionOf">http://w3id.org/CEON/ontology/product/compositionOf</a>
<b>Domain</b>	<a href="#">resourceODP:Composition</a>
<b>Range</b>	<a href="#">resourceODP:Matter<sup>c</sup> or Product object<sup>c</sup> or Product model<sup>c</sup></a>

has compliance<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/product/hasCompliance">http://w3id.org/CEON/ontology/product/hasCompliance</a>
<b>Domain</b>	<a href="#">Product model<sup>c</sup> or http://w3id.org/CEON/ontology/processODP/Process<sup>c</sup> or Product object<sup>c</sup> or actorODP:Actor<sup>c</sup></a>
<b>Range</b>	<a href="#">Compliance<sup>c</sup></a>

## has composition<sup>op</sup>

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

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

**Domain** [Product model<sup>c</sup>](#) or [resourceODP:PhysicalObject<sup>c</sup>](#)

**Range** [resourceODP:Composition](#)

## has product component<sup>op</sup>

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

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

**Domain** [Product model<sup>c</sup>](#)

**Range** [Product model<sup>c</sup>](#)

## has product object component<sup>op</sup>

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

**Domain** [Product object<sup>c</sup>](#)

**Range** [Product object<sup>c</sup>](#)

## modelled by<sup>op</sup>

**IRI** <http://w3id.org/CEON/ontology/product/modelledBy>

**Description** modelledBy intends to represent that product objects follow particular product models.

**Domain** [Product object<sup>c</sup>](#)

**Range** [Product model<sup>c</sup>](#)

## Datatype Properties

Composition quantity <sup>dp</sup>
<b>IRI</b> <a href="http://w3id.org/CEON/ontology/product/compositionQuantity">http://w3id.org/CEON/ontology/product/compositionQuantity</a>
<b>Domain</b> <a href="#">resourceODP:Composition</a>
<b>Range</b> <a href="#">xsd:double</a>
country of assembly <sup>dp</sup>
<b>IRI</b> <a href="http://w3id.org/CEON/ontology/product/countryOfAssembly">http://w3id.org/CEON/ontology/product/countryOfAssembly</a>
<b>Sub Property Of</b> <a href="#">locationOfAssembly<sup>dp</sup></a>
country of manufacture <sup>dp</sup>
<b>IRI</b> <a href="http://w3id.org/CEON/ontology/product/countryOfManufacture">http://w3id.org/CEON/ontology/product/countryOfManufacture</a>
<b>Sub Property Of</b> <a href="#">locationOfManufacture<sup>dp</sup></a>
country of origin <sup>dp</sup>
<b>IRI</b> <a href="http://w3id.org/CEON/ontology/product/countryOfOrigin">http://w3id.org/CEON/ontology/product/countryOfOrigin</a>
<b>Sub Property Of</b> <a href="#">locationOfOrigin<sup>dp</sup></a>
has certificate <sup>dp</sup>
<b>IRI</b> <a href="http://w3id.org/CEON/ontology/product/hasCertificate">http://w3id.org/CEON/ontology/product/hasCertificate</a>
<b>Domain</b> <a href="#">Compliance<sup>c</sup></a>
location of assembly <sup>dp</sup>
<b>IRI</b> <a href="http://w3id.org/CEON/ontology/product/locationOfAssembly">http://w3id.org/CEON/ontology/product/locationOfAssembly</a>
<b>Super Property Of</b> <a href="#">countryOfAssembly<sup>dp</sup></a>
<b>Domain</b> <a href="#">Product model<sup>c</sup> or Product object<sup>c</sup></a>
<b>Range</b> <a href="#">xsd:string</a>

## location of manufacture<sup>dp</sup>

**IRI** <http://w3id.org/CEON/ontology/product/locationOfManufacture>

**Super Property Of** [countryOfManufacture<sup>dp</sup>](#)

**Domain** [Product model<sup>c</sup>](#) or [Product object<sup>c</sup>](#)

**Range** [xsd:string](#)

## location of origin<sup>dp</sup>

**IRI** <http://w3id.org/CEON/ontology/product/locationOfOrigin>

**Super Property Of** [countryOfOrigin<sup>dp</sup>](#)

**Domain** [Product object<sup>c</sup>](#) or [Product model<sup>c</sup>](#)

**Range** [xsd:string](#)

## Annotation Properties

### contributor<sup>ap</sup>

**IRI** <http://purl.org/dc/terms/contributor>

### created<sup>ap</sup>

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

### creator<sup>ap</sup>

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

### description<sup>ap</sup>

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

### license<sup>ap</sup>

**IRI** <http://purl.org/dc/terms/license>

### title<sup>ap</sup>

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

preferred namespace prefix<sup>ap</sup>

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

preferred namespace uri<sup>ap</sup>

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

covers requirements<sup>ap</sup>

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

## Namespaces

:

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