

# Circular Economy Ontology Network (CEON) - Product Module

## Metadata

**IRI**

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

**Title**

Circular Economy Ontology Network (CEON) - Product Module

**Creator**

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**Contributor**

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- 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/0.2/>

**Version Info**

0.2

**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.

## Classes

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</a> <sup>op</sup>
<b>Restriction</b>	<a href="#">associated with matter</a> <sup>op</sup> <i>exactly</i> 1 <a href="#">Matter composition</a> <sup>c</sup>

## 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 Range Of</b>	<a href="#">associated with product model</a> <sup>op</sup> <a href="#">batch of products</a> <sup>op</sup> <a href="#">modelled by</a> <sup>op</sup>
<b>Restriction</b>	<a href="#">hasComposition</a> <sup>op</sup> some <a href="#">Product model</a> <sup>c</sup> <a href="#">hasComposition</a> <sup>op</sup> some <a href="#">Product model</a> <sup>c</sup>

## 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</a> <sup>op</sup>
<b>Restriction</b>	<a href="#">associated with product model</a> <sup>op</sup> <i>exactly</i> 1 <a href="#">Product composition</a> <sup>c</sup>

## 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="#">has product component</a> <sup>op</sup> <a href="#">modelled by</a> <sup>op</sup>
<b>In Range Of</b>	<a href="#">has product component</a> <sup>op</sup>
<b>Restriction</b>	<a href="#">modelled by</a> <sup>op</sup> <i>exactly</i> 1 <a href="#">Product object</a> <sup>c</sup>

## Object Properties

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

<b>IRI</b>	<a href="http://w3id.org/CE0N/ontology/product/associatedWithMatter">http://w3id.org/CE0N/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</a> <sup>c</sup>
<b>Range</b>	<a href="#">resourceODP:Matter</a>

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

<b>IRI</b>	<a href="http://w3id.org/CE0N/ontology/product/associatedWithProductModel">http://w3id.org/CE0N/ontology/product/associatedWithProductModel</a>
<b>Description</b>	associatedWithProductModel intends to represent the matter to which a product composition information regards to.
<b>Domain</b>	<a href="#">Product composition</a> <sup>c</sup>
<b>Range</b>	<a href="#">Product model</a> <sup>c</sup>

### batch of products<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/ontology/product/batchOfProduct">http://w3id.org/CE0N/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</a> <sup>c</sup>

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

<b>IRI</b>	<a href="http://w3id.org/CE0N/ontology/product/hasComposition">http://w3id.org/CE0N/ontology/product/hasComposition</a>
<b>Description</b>	hasComposition intends to represent that a product model or physical object can have composition information.
<b>Domain</b>	<a href="#">Product model</a> <sup>c</sup> or <a href="#">resourceODP:PhysicalObject</a> <sup>c</sup>
<b>Range</b>	<a href="#">resourceODP:Composition</a>

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

<b>IRI</b>	<a href="http://w3id.org/CE0N/ontology/product/hasProductComponent">http://w3id.org/CE0N/ontology/product/hasProductComponent</a>
<b>Description</b>	hasProductComponent intends to represent that a product can have other product components.
<b>Domain</b>	<a href="#">Product object</a> <sup>c</sup>
<b>Range</b>	<a href="#">Product object</a> <sup>c</sup>

modelled by<sup>op</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/ontology/product/modelledBy">http://w3id.org/CE0N/ontology/product/modelledBy</a>
<b>Description</b>	modelledBy intends to represent that product objects follow particular product models.
<b>Domain</b>	<a href="#">Product object</a> <sup>C</sup>
<b>Range</b>	<a href="#">Product model</a> <sup>C</sup>

## Datatype Properties

Composition quantity<sup>dp</sup>

<b>IRI</b>	<a href="http://w3id.org/CE0N/ontology/product/compositionQuantity">http://w3id.org/CE0N/ontology/product/compositionQuantity</a>
<b>Description</b>	compositionQuantity intends to represent the quantity value of composed elements of a composition. The quantity value can be the number of a element or the percentage of a element.
<b>Domain</b>	<a href="#">resourceODP:Composition</a>
<b>Range</b>	<a href="#">xsd:double</a> <sup>C</sup> or <a href="#">xsd:positiveInteger</a> <sup>C</sup>

## Annotation Properties

contributor<sup>ap</sup>

<b>IRI</b>	<a href="http://purl.org/dc/terms/contributor">http://purl.org/dc/terms/contributor</a>
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created<sup>ap</sup>

<b>IRI</b>	<a href="http://purl.org/dc/terms/created">http://purl.org/dc/terms/created</a>
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creator<sup>ap</sup>

<b>IRI</b>	<a href="http://purl.org/dc/terms/creator">http://purl.org/dc/terms/creator</a>
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description<sup>ap</sup>

<b>IRI</b>	<a href="http://purl.org/dc/terms/description">http://purl.org/dc/terms/description</a>
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license<sup>ap</sup>

<b>IRI</b>	<a href="http://purl.org/dc/terms/license">http://purl.org/dc/terms/license</a>
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title<sup>ap</sup>

<b>IRI</b>	<a href="http://purl.org/dc/terms/title">http://purl.org/dc/terms/title</a>
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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/cpannotationschema.owl#coversRequirements>

## Namespaces

:	<a href="http://w3id.org/CEON/ontology/product/">http://w3id.org/CEON/ontology/product/</a>
dcterms	<a href="http://purl.org/dc/terms/">http://purl.org/dc/terms/</a>
odp	<a href="http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#">http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#</a>
owl	<a href="http://www.w3.org/2002/07/owl#">http://www.w3.org/2002/07/owl#</a>
prov	<a href="http://www.w3.org/ns/prov#">http://www.w3.org/ns/prov#</a>
rdf	<a href="http://www.w3.org/1999/02/22-rdf-syntax-ns#">http://www.w3.org/1999/02/22-rdf-syntax-ns#</a>
rdfs	<a href="http://www.w3.org/2000/01/rdf-schema#">http://www.w3.org/2000/01/rdf-schema#</a>
resourceODP	<a href="http://w3id.org/CEON/ontology/resourceODP/">http://w3id.org/CEON/ontology/resourceODP/</a>
vann	<a href="http://purl.org/vocab/vann/">http://purl.org/vocab/vann/</a>
xsd	<a href="http://www.w3.org/2001/XMLSchema#">http://www.w3.org/2001/XMLSchema#</a>

## Legend

c	Classes
op	Object Properties
dp	Datatype Properties
ap	Annotation Properties