

# 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/0.2/>

### 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-DESIDER D3.1: CVN-Resource-2, CVN-ResourceType-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/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</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/CEON/ontology/product/associatedWithProductModel">http://w3id.org/CEON/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/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</a> <sup>c</sup>

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

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/product/hasComposition">http://w3id.org/CEON/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/CEON/ontology/product/hasProductComponent">http://w3id.org/CEON/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/CEON/ontology/product/modelledBy">http://w3id.org/CEON/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>	
IRI	<a href="http://w3id.org/CEON/ontology/product/compositionQuantity">http://w3id.org/CEON/ontology/product/compositionQuantity</a>
Description	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.
Domain	<a href="#">resourceODP:Composition</a>
Range	<a href="#">xsd:positiveInteger</a> <sup>c</sup> or <a href="#">xsd:double</a> <sup>c</sup>

## Annotation Properties

contributor <sup>ap</sup>	
IRI	<a href="http://purl.org/dc/terms/contributor">http://purl.org/dc/terms/contributor</a>
created <sup>ap</sup>	
IRI	<a href="http://purl.org/dc/terms/created">http://purl.org/dc/terms/created</a>
creator <sup>ap</sup>	
IRI	<a href="http://purl.org/dc/terms/creator">http://purl.org/dc/terms/creator</a>
description <sup>ap</sup>	
IRI	<a href="http://purl.org/dc/terms/description">http://purl.org/dc/terms/description</a>
license <sup>ap</sup>	
IRI	<a href="http://purl.org/dc/terms/license">http://purl.org/dc/terms/license</a>
title <sup>ap</sup>	
IRI	<a href="http://purl.org/dc/terms/title">http://purl.org/dc/terms/title</a>

preferred namespace prefix <sup>ap</sup>	
IRI	<a href="http://purl.org/vocab/vann/preferredNamespacePrefix">http://purl.org/vocab/vann/preferredNamespacePrefix</a>
preferred namespace uri <sup>ap</sup>	
IRI	<a href="http://purl.org/vocab/vann/preferredNamespaceUri">http://purl.org/vocab/vann/preferredNamespaceUri</a>
covers requirements <sup>ap</sup>	
IRI	<a href="http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#coversRequirements">http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#coversRequirements</a>

## Namespaces

:

<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

<sup>c</sup>

Classes

<sup>op</sup>

Object Properties

<sup>dp</sup>

Datatype Properties

<sup>ap</sup>

Annotation Properties