

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 Info	0.5
Prior Version	0.4
Preferred Namespace Prefix	ceon-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 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

Location^c

IRI <http://w3id.org/CEON/ontology/location/Location>

Super Class Of

[AssemblyLocation^c](#)
[ManufactureLocation^c](#)
[OriginLocation^c](#)
[ProductionLocation^c](#)
[SupplierLocation^c](#)

Process^c

IRI <http://w3id.org/CEON/ontology/processODP/Process>

Assembly Location^c

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

Sub Class Of [^c](http://w3id.org/CEON/ontology/location/Location)

In Domain Of [countryOfAssembly^{dp}](#)

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

Restriction
[^{dp} max 1](http://w3id.org/CEON/ontology/location/hasCity) [AssemblyLocation^c](#)
[^{dp} max 1](http://w3id.org/CEON/ontology/location/hasPostalCode)
[AssemblyLocation^c](#)
[^{dp} max 1](http://w3id.org/CEON/ontology/location/hasStreetAddress)
[AssemblyLocation^c](#)
[countryOfAssembly^{dp} max 1](#) [AssemblyLocation^c](#)

Compliance^c

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

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

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

Super Class Of
[ISOCompliance^c](#)
[REACHCompliance^c](#)
[RoHSCompliance^c](#)

Composition^C

IRI	http://w3id.org/CEON/ontology/product/Composition
Sub Class Of	actorODP:ResourceParticipation
In Domain Of	compositionOf ^{op} compositionQuantity ^{dp}
In Range Of	hasComposition ^{op}
Super Class Of	MatterComposition ^C ProductComposition ^C ProductObjectComposition ^C

Iso Compliance^C

IRI	http://w3id.org/CEON/ontology/product/ISOCompliance
Sub Class Of	Compliance ^C

Item^C

IRI	http://w3id.org/CEON/ontology/product/Item
Sub Class Of	resourceODP:PhysicalObject ^C
In Domain Of	hasProductObjectComponent ^{op} modelledBy ^{op}
In Range Of	associatedWithProductObject ^{op} hasProductObjectComponent ^{op}
Restriction	modelledBy ^{op} <i>exactly</i> 1 Item ^C

Manufacture Location^C

IRI	http://w3id.org/CEON/ontology/product/ManufactureLocation
Sub Class Of	http://w3id.org/CEON/ontology/location/Location ^C
In Domain Of	countryOfManufacture ^{dp}
In Range Of	hasManufacturerLocation ^{op}
Restriction	http://w3id.org/CEON/ontology/location/hasCity ^{dp} <i>max</i> 1 ManufactureLocation ^C http://w3id.org/CEON/ontology/location/hasPostalCode ^{dp} <i>max</i> 1 ManufactureLocation ^C http://w3id.org/CEON/ontology/location/hasStreetAddress ^{dp} <i>max</i> 1 ManufactureLocation ^C countryOfManufacture ^{dp} <i>max</i> 1 ManufactureLocation ^C

Matter Composition^C

IRI	http://w3id.org/CEON/ontology/product/MatterComposition
Sub Class Of	Composition^C
In Domain Of	associatedWithMatter^{op}
Restriction	associatedWithMatter^{op} <i>exactly</i> 1 MatterComposition^C

Origin Location^C

IRI	http://w3id.org/CEON/ontology/product/OriginLocation
Sub Class Of	http://w3id.org/CEON/ontology/location/Location^C
In Domain Of	countryOfOrigin^{dp}
In Range Of	hasOriginLocation^{op}
Restriction	http://w3id.org/CEON/ontology/location/hasCity^{dp} <i>max</i> 1 OriginLocation^C http://w3id.org/CEON/ontology/location/hasPostalCode^{dp} <i>max</i> 1 OriginLocation^C http://w3id.org/CEON/ontology/location/hasStreetAddress^{dp} <i>max</i> 1 OriginLocation^C countryOfOrigin^{dp} <i>max</i> 1 OriginLocation^C

Product^C

IRI	http://w3id.org/CEON/ontology/product/Product
Is Defined By	ISO 59004:2024 -3.2.2 product
Sub Class Of	Solution^C resourceODP:Resource
In Domain Of	hasProductComponent^{op}
In Range Of	associatedWithProductModel^{op} batchOfProduct^{op} hasProductComponent^{op} modelledBy^{op}
Restriction	hasComposition^{op} some Product^C hasComposition^{op} some Product^C hasAssemblyLocation^{op} only Product^C hasManufacturerLocation^{op} only Product^C hasOriginLocation^{op} only Product^C

Product Composition^C

IRI	http://w3id.org/CEON/ontology/product/ProductComposition
Sub Class Of	Composition ^C
In Domain Of	associatedWithProductModel ^{op}
Restriction	associatedWithProductModel ^{op} <i>exactly</i> 1 ProductComposition ^C

Product Object Composition^C

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

Production Location^C

IRI	http://w3id.org/CEON/ontology/product/ProductionLocation
Sub Class Of	http://w3id.org/CEON/ontology/location/Location ^C
In Domain Of	countryOfProduction ^{dp} productionSite ^{dp}
Restriction	http://w3id.org/CEON/ontology/location/hasCity ^{dp} <i>max</i> 1 ProductionLocation ^C http://w3id.org/CEON/ontology/location/hasPostalCode ^{dp} <i>max</i> 1 ProductionLocation ^C http://w3id.org/CEON/ontology/location/hasStreetAddress ^{dp} <i>max</i> 1 ProductionLocation ^C countryOfProduction ^{dp} <i>max</i> 1 ProductionLocation ^C productionSite ^{dp} <i>max</i> 1 ProductionLocation ^C

Reach Compliance^C

IRI	http://w3id.org/CEON/ontology/product/REACHCompliance
Sub Class Of	Compliance ^C
Equivalentclass	complianceWith ^{op} value REACH ^C

Regulation^C

IRI	http://w3id.org/CEON/ontology/product/Regulation
Named Individuals	REACH ⁿⁱ RoHS ⁿⁱ

Ro Hs Compliance^C

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

Sub Class Of [Compliance^C](#)

Equivalentclass [complianceWith^{op}](#) value [RoHS^C](#)

Solution^C

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

Is Defined By ISO 59004:2024 - 3.2.1 solution

Super Class Of [Product^C](#)

Supplier Location^C

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

Sub Class Of [http://w3id.org/CE0N/ontology/location/Location^C](http://w3id.org/CE0N/ontology/location/Location)

Batch Of Objects^C

IRI <http://w3id.org/CE0N/ontology/resource0DP/BatchOf0bjects>

In Domain Of [batchOfProduct^{op}](#)

Restriction [batchOfProduct^{op}](#) *exactly* 1 [resource0DP:BatchOfObjects^C](#)

Matter^C

IRI <http://w3id.org/CE0N/ontology/resource0DP/Matter>

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

Physical Object^C

IRI <http://w3id.org/CE0N/ontology/resource0DP/PhysicalObject>

Super Class Of [Item^C](#)

Object Properties

has location^{op}

IRI <http://w3id.org/CE0N/ontology/location/hasLocation>

Super Property Of

- [hasAssemblyLocation](#)^{op}
- [hasManufacturerLocation](#)^{op}
- [hasOriginLocation](#)^{op}

associated with matter^{op}

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

Domain [MatterComposition](#)^c

Range [resourceODP:Matter](#)^c

associated with product model^{op}

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

Domain [ProductComposition](#)^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 product^{op}

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

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
Domain	Composition ^c
Range	Product ^c or resourceODP:Matter ^c or Item ^c

has assembly location^{op}

IRI	http://w3id.org/CEON/ontology/product/hasAssemblyLocation
Sub Property Of	http://w3id.org/CEON/ontology/location/hasLocation ^{op}
Domain	Item ^c or Product ^c
Range	AssemblyLocation ^c

has compliance^{op}

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

has composition^{op}

IRI	http://w3id.org/CEON/ontology/product/hasComposition
Domain	resourceODP:PhysicalObject ^c or Product ^c
Range	Composition ^c

has manufacturer location^{op}

IRI	http://w3id.org/CEON/ontology/product/hasManufacturerLocation
Sub Property Of	http://w3id.org/CEON/ontology/location/hasLocation ^{op}
Domain	Product ^c or Item ^c
Range	ManufactureLocation ^c

has origin location^{op}

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

Sub Property Of <http://w3id.org/CEON/ontology/location/hasLocation>^{op}

Domain [Product](#)^c or [Item](#)^c

Range [OriginLocation](#)^c

has product component^{op}

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

Domain [Product](#)^c

Range [Product](#)^c

has product object component^{op}

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

Domain [Item](#)^c

Range [Item](#)^c

modelled by^{op}

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

Domain [Item](#)^c

Range [Product](#)^c

Datatype Properties

has city^{dp}

IRI <http://w3id.org/CEON/ontology/location/hasCity>

Sub Property Of [topDataProperty](#)^{dp}

has country^{dp}

IRI <http://w3id.org/CEON/ontology/location/hasCountry>

Super Property Of

- [countryOfAssembly](#)^{dp}
- [countryOfManufacture](#)^{dp}
- [countryOfOrigin](#)^{dp}
- [countryOfProduction](#)^{dp}

has postal code^{dp}

IRI <http://w3id.org/CEON/ontology/location/hasPostalCode>

Sub Property Of [topDataProperty](#)^{dp}

has street address^{dp}

IRI <http://w3id.org/CEON/ontology/location/hasStreetAddress>

Sub Property Of [topDataProperty](#)^{dp}

composition quantity^{dp}

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

Domain [Composition](#)^c

Range [xsd:double](#)

country of assembly^{dp}

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

Sub Property Of <http://w3id.org/CEON/ontology/location/hasCountry>^{dp}

Domain [AssemblyLocation](#)^c

Range [xsd:string](#)

country of manufacture^{dp}

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

Sub Property Of <http://w3id.org/CEON/ontology/location/hasCountry>^{dp}

Domain [ManufactureLocation](#)^c

Range [xsd:string](#)

country of origin^{dp}

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

Sub Property Of <http://w3id.org/CEON/ontology/location/hasCountry>^{dp}

Domain [OriginLocation](#)^c

Range [xsd:string](#)

country of production^{dp}

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

Sub Property Of <http://w3id.org/CEON/ontology/location/hasCountry>^{dp}

Domain [ProductionLocation](#)^c

Range [xsd:string](#)

has brand^{dp}

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

Range [xsd:string](#)

has certificate^{dp}

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

Domain [Compliance](#)^c

has global trade item number^{dp}

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

Range [xsd:string](#)

has product name^{dp}

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

Range [xsd:string](#)

production site^{dp}

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

Domain [ProductionLocation](#)^c

Range [xsd:string](#)

Namespaces

:

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

actorODP

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

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