

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	https://creativecommons.org/licenses/by/4.0/
Version Iri	http://w3id.org/CEON/ontology/product/0.5/
Version Info	0.5
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	<p>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.</p> <p>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.</p>

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/CEON/ontology/processODP/Process

Assembly Location^C

IRI	http://w3id.org/CEON/ontology/product/AssemblyLocation
Sub Class Of	http://w3id.org/CEON/ontology/location/Location
In Domain Of	countryOfAssembly^{dp}
In Range Of	hasAssemblyLocation^{op}
Restriction	http://w3id.org/CEON/ontology/location/hasCity_max 1 AssemblyLocation^C http://w3id.org/CEON/ontology/location/hasPostalCode_max 1 AssemblyLocation^C http://w3id.org/CEON/ontology/location/hasStreetAddress_max 1 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

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
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

Manufacture Location^C

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

Matter composition^C

IRI	http://w3id.org/CEON/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} <i>exactly</i> 1 Matter composition ^C

Origin Location^C

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

Product^C

IRI	http://w3id.org/CE0N/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 resourceODP:Resource
<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 hasAssemblyLocation^{OP} only Product^C hasManufacturerLocation^{OP} only Product^C hasOriginLocation^{OP} only Product^C

Product composition^C

IRI	http://w3id.org/CE0N/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/CE0N/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

Production Location^C

IRI	http://w3id.org/CEON/ontology/product/ProductionLocation
Sub Class Of	http://w3id.org/CEON/ontology/location/Location
In Domain Of	countryOfProduction ^{dp} productionSiteName ^{dp}
Restriction	http://w3id.org/CEON/ontology/location/hasCity <i>max</i> 1 ProductionLocation ^C http://w3id.org/CEON/ontology/location/hasPostalCode <i>max</i> 1 ProductionLocation ^C http://w3id.org/CEON/ontology/location/hasStreetAddress <i>max</i> 1 ProductionLocation ^C countryOfProduction ^{dp} <i>max</i> 1 ProductionLocation ^C productionSiteName ^{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/CEON/ontology/product/RoHSCompliance
Sub Class Of	Compliance ^C
Equivalentclass	complianceWith ^{op} value RoHS ^C

Solution^C

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

Supplier Location^C

IRI	http://w3id.org/CEON/ontology/product/SupplierLocation
<u>Sub Class Of</u>	http://w3id.org/CEON/ontology/location/Location

Batch Of Objects^C

IRI	http://w3id.org/CEON/ontology/resourceODP/BatchOf0bjects
<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/CEON/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/CEON/ontology/resourceODP/Matter
<u>In Range Of</u>	associated with matter ^{op}

Physical Object^C

IRI	http://w3id.org/CEON/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
Domain	resourceODP:Composition ^c
Range	Product ^c or Item ^c or resourceODP:Matter ^c

has assembly location^{op}

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

has compliance^{op}

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

has composition^{op}

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 ^c or resourceODP:PhysicalObject ^c
Range	resourceODP:Composition ^c

has manufacturer location^{op}

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

has origin location^{op}

IRI	http://w3id.org/CE0N/ontology/product/hasOriginLocation
Sub Property Of	http://w3id.org/CE0N/ontology/location/hasLocation
Domain	Item ^c or Product ^c
Range	OriginLocation ^c

has product component^{op}

IRI	http://w3id.org/CE0N/ontology/product/hasProductComponent
Description	hasProductComponent intends to represent that a product can have other product components.
Domain	Product ^c
Range	Product ^c

has product object component^{op}

IRI	http://w3id.org/CE0N/ontology/product/hasProductObjectComponent
Domain	Item ^c
Range	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/CEON/ontology/product/country0fAssembly
Sub Property Of	http://w3id.org/CEON/ontology/location/hasCountry
Domain	AssemblyLocation^c
Range	xsd:string

country of manufacture^{dp}

IRI	http://w3id.org/CEON/ontology/product/country0fManufacture
Sub Property Of	http://w3id.org/CEON/ontology/location/hasCountry
Domain	ManufactureLocation^c
Range	xsd:string

country of origin^{dp}

IRI	http://w3id.org/CEON/ontology/product/country0fOrigin
Sub Property Of	http://w3id.org/CEON/ontology/location/hasCountry
Domain	OriginLocation^c
Range	xsd:string

country of production^{dp}

IRI	http://w3id.org/CEON/ontology/product/country0fProduction
Sub Property Of	http://w3id.org/CEON/ontology/location/hasCountry
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/CE0N/ontology/product/hasGlobalTradeItemNumber>

Range [xsd:string](#)

has product name^{dp}

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

Range [xsd:string](#)

production site name^{dp}

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

Domain [ProductionLocation^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/CEON/ontology/product/
actorODP	http://w3id.org/CEON/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/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