

Circular Economy Ontology Network (CEON) - Material Module

Metadata

IRI

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

Title

Circular Economy Ontology Network (CEON) - Material Module

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Version Iri

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

Version Info

0.3

Preferred Namespace Prefix

material

Preferred Namespace Uri

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

Description

The Material 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-ResourceType-4, C3-3, E1-3, E2-4, E5-2, T1-1, T10-2.

In addition to requirements covered by imported ODPs, covers the following requirements from Onto-DESIDE D3.2: CE5-2, C3-3, E1-3, E2-4, E5-2, T1-1, T10-2.

Classes

Aluminum^c

IRI

<http://w3id.org/CEON/ontology/material/Aluminum>

Sub Class Of

[ChemicalElement^c](#)

Boron^c

IRI

<http://w3id.org/CEON/ontology/material/Boron>

Sub Class Of

[ChemicalElement^c](#)

Celulose^c

IRI	http://w3id.org/CEON/ontology/material/Celulose
Sub Class Of	ChemicalElement^c

Chemical Element^c

IRI	http://w3id.org/CEON/ontology/material/ChemicalElement
Sub Class Of	Chemical substance^c
Super Class Of	Aluminum^c Boron^c Celulose^c Chromium^c Copper^c Dysprosium^c Iron^c Magnesium^c Manganese^c Neodymium^c Nickel^c Niobium^c Silicon^c Titanium^c Zinc^c

Chemical entity^c

IRI	http://w3id.org/CEON/ontology/material/ChemicalEntity
Description	A chemical entity is an abstraction of entities that can compose matter. For instance, a chemical entity can be a molecular entity or a chemical substance.
Sub Class Of	resourceODP:Matter^c
In Range Of	has chemical entity^{op}
Super Class Of	Chemical substance^c Molecular entity^c

Chemical substance^c

IRI	http://w3id.org/CEON/ontology/material/ChemicalSubstance
Description	A chemical substance is made up of a collection of molecular entities.
Sub Class Of	Chemical entity^c
Super Class Of	ChemicalElement^c

Chromium^c

IRI <http://w3id.org/CEON/ontology/material/Chromium>

Sub Class Of [ChemicalElement^c](#)

Copper^c

IRI <http://w3id.org/CEON/ontology/material/Copper>

Sub Class Of [ChemicalElement^c](#)

Dysprosium^c

IRI <http://w3id.org/CEON/ontology/material/Dysprosium>

Sub Class Of [ChemicalElement^c](#)

Iron^c

IRI <http://w3id.org/CEON/ontology/material/Iron>

Sub Class Of [ChemicalElement^c](#)

Magnesium^c

IRI <http://w3id.org/CEON/ontology/material/Magnesium>

Sub Class Of [ChemicalElement^c](#)

Manganese^c

IRI <http://w3id.org/CEON/ontology/material/Manganese>

Sub Class Of [ChemicalElement^c](#)

Material^c

IRI <http://w3id.org/CEON/ontology/material/Material>

Description Material as a sub-concept of Matter, can be a substance or a collection of substance which a physical object is composed of.

Sub Class Of [resourceODP:Matter^c](#)

In Domain Of [has chemical entity^{op}](#)
[has material component^{op}](#)

Restriction [has chemical entity^{op}](#) some [Material^c](#)

Material component^c

IRI	http://w3id.org/CEON/ontology/material/MaterialComponent
Description	A material component is a part of a material.
Sub Class Of	resourceODP:Constituent^c
In Range Of	has material component^{op}

Molecular entity^c

IRI	http://w3id.org/CEON/ontology/material/MolecularEntity
Description	A molecular entity means a singular/distinguishable entity. It can be for instance, atom, ion.
Sub Class Of	Chemical entity^c

Neodymium^c

IRI	http://w3id.org/CEON/ontology/material/Neodymium
Sub Class Of	ChemicalElement^c

Nickel^c

IRI	http://w3id.org/CEON/ontology/material/Nickel
Sub Class Of	ChemicalElement^c

Niobium^c

IRI	http://w3id.org/CEON/ontology/material/Niobium
Sub Class Of	ChemicalElement^c

Silicon^c

IRI	http://w3id.org/CEON/ontology/material/Silicon
Sub Class Of	ChemicalElement^c

Titanium^c

IRI	http://w3id.org/CEON/ontology/material/Titanium
Sub Class Of	ChemicalElement^c

Zinc^c

IRI <http://w3id.org/CEON/ontology/material/Zinc>

Sub Class Of [ChemicalElement^c](#)

Constituent^c

IRI <http://w3id.org/CEON/ontology/resourceODP/Constituent>

Super Class Of [Material component^c](#)

Matter^c

IRI <http://w3id.org/CEON/ontology/resourceODP/Matter>

Super Class Of [Chemical entity^c](#)
[Material^c](#)

Object Properties

has chemical entity^{op}

IRI <http://w3id.org/CEON/ontology/material/hasChemicalEntity>

Description hasChemicalEntity intends to represent that a material can have a collection of chemical entities.

Domain [Material^c](#)

Range [Chemical entity^c](#)

has material component^{op}

IRI <http://w3id.org/CEON/ontology/material/hasMaterialComponent>

Description hasMaterialComponent intends to represent that a material can have a collection of components.

Domain [Material^c](#)

Range [Material component^c](#)

Datatype Properties

Anonymous Formula ^{dp}	
IRI	http://w3id.org/CEON/ontology/material/AnonymousFormula
Description	AnonymousFormula represents that a molecular entity has the anonymous formula in a string.
Descriptive Formula ^{dp}	
IRI	http://w3id.org/CEON/ontology/material/DescriptiveFormula
Description	DescriptiveFormula represents that a molecular entity has the descriptive formula in a string.
Hill Formula ^{dp}	
IRI	http://w3id.org/CEON/ontology/material/HillFormula
Description	HillFormula represents that a composition has the hill formula in a string.
Reduced Chemical Formula ^{dp}	
IRI	http://w3id.org/CEON/ontology/material/ReducedChemicalFormula
Description	ReducedChemicalFormula represents that a molecular entity has the reduced chemical formula in a string.

Annotation Properties

description ^{ap}	
IRI	http://purl.org/dc/elements/1.1/description

Namespaces

:

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

dc <http://purl.org/dc/elements/1.1/>

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/>

Legend

c	Classes
op	Object Properties
dp	Datatype Properties
ap	Annotation Properties