

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 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/CE0N/ontology/material/Celulose>

Sub Class Of [ChemicalElement^C](#)

Chemical Element^C

IRI <http://w3id.org/CE0N/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/CE0N/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/CE0N/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/CE0N/ontology/material/Chromium>

Sub Class Of [ChemicalElement^C](#)

Copper^C

IRI <http://w3id.org/CE0N/ontology/material/Copper>

Sub Class Of [ChemicalElement^C](#)

Dysprosium^C

IRI <http://w3id.org/CE0N/ontology/material/Dysprosium>

Sub Class Of [ChemicalElement^C](#)

Iron^C

IRI <http://w3id.org/CE0N/ontology/material/Iron>

Sub Class Of [ChemicalElement^C](#)

Magnesium^C

IRI <http://w3id.org/CE0N/ontology/material/Magnesium>

Sub Class Of [ChemicalElement^C](#)

Manganese^C

IRI <http://w3id.org/CE0N/ontology/material/Manganese>

Sub Class Of [ChemicalElement^C](#)

Material^C

IRI <http://w3id.org/CE0N/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/CE0N/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/CE0N/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/CE0N/ontology/material/Neodymium>

Sub Class Of [ChemicalElement^C](#)

Nickel^C

IRI <http://w3id.org/CE0N/ontology/material/Nickel>

Sub Class Of [ChemicalElement^C](#)

Niobium^C

IRI <http://w3id.org/CE0N/ontology/material/Niobium>

Sub Class Of [ChemicalElement^C](#)

Silicon^C

IRI <http://w3id.org/CE0N/ontology/material/Silicon>

Sub Class Of [ChemicalElement^C](#)

Titanium^C

IRI <http://w3id.org/CE0N/ontology/material/Titanium>

Sub Class Of [ChemicalElement^C](#)

Zinc^C

IRI <http://w3id.org/CE0N/ontology/material/Zinc>

Sub Class Of [ChemicalElement^C](#)

Constituent^C

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

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

Matter^C

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

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

Object Properties

has chemical entity^{op}

IRI <http://w3id.org/CE0N/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/CE0N/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/CE0N/ontology/material/AnonymousFormula>

Description AnonymousFormula represents that a molecular entity has the anonymous formula in a string.

Descriptive Formula^{dp}

IRI <http://w3id.org/CE0N/ontology/material/DescriptiveFormula>

Description DescriptiveFormula represents that a molecular entity has the descriptive formula in a string.

Hill Formula^{dp}

IRI <http://w3id.org/CE0N/ontology/material/HillFormula>

Description HillFormula represents that a composition has the hill formula in a string.

Reduced Chemical Formula^{dp}

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

:

<http://w3id.org/CE0N/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/CE0N/ontology/resourceODP/>

vann

<http://purl.org/vocab/vann/>

Legend

c	Classes
op	Object Properties
dp	Datatype Properties
ap	Annotation Properties