

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/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