Circular Economy Ontology Network (CEON) - Material Module

Metadata

IRI

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

Title

Circular Economy Ontology Network (CEON) - Material Module

Creator

Huanyu Li

Contributor

Eva Blomqvist

Mikael Lindecrantz

Robin Keskisärkkä

Date Created

2023-03-16

License

https://creativecommons.org/licenses/by/4.0/

Version Iri

http://w3id.org/CEON/ontology/material/0.2/

Version Info

0.2

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.

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

:

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