

# Circular Economy Ontology Network (CEON) - Electronics Module

## Metadata

### IRI

<http://w3id.org/CEON/demo/electronics/>

### Title

Circular Economy Ontology Network (CEON) - Electronics Module

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### License

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### Version Iri

<http://w3id.org/CEON/demo/electronics/0.1/>

### Version Info

0.1

### Preferred Namespace Uri

<http://w3id.org/CEON/demo/electronics/>

### Description

The Electronics module of CEON (Circular Economy Ontology Network).

## Classes

### Derived Unit<sup>c</sup>

#### IRI

<http://qudt.org/schema/qudt/DerivedUnit>

#### Is Defined By

<http://qudt.org/2.1/schema/qudt>

#### Description

A DerivedUnit is a type specification for units that are derived from other units.

#### Sub Class Of

<http://qudt.org/schema/qudt/Unit>

#### Named Individuals

[pascal second](#)<sup>ni</sup>

### Actinoids Metal<sup>c</sup>

#### IRI

<http://w3id.org/CEON/demo/electronics/ActinoidsMetal>

#### Sub Class Of

[MetalMaterial](#)<sup>c</sup>

### Adhesive Material<sup>c</sup>

#### IRI

<http://w3id.org/CEON/demo/electronics/AdhesiveMaterial>

#### Sub Class Of

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

## Alkali Metal<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/AlkaliMetal>

**Sub Class Of** [MetalMaterial<sup>C</sup>](#)

## Alkaline Earth Metal<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/AlkalineEarthMetal>

**Sub Class Of** [MetalMaterial<sup>C</sup>](#)

## Aluminum Dome Tweeter<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/AluminumDomeTweeter>

**Sub Class Of** [ElectronicsProduct<sup>C</sup>](#)

## Bromide Material<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/BromideMaterial>

**Sub Class Of** <http://w3id.org/CEON/ontology/material/Material>

## Catalyst Material<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/CatalystMaterial>

**Sub Class Of** <http://w3id.org/CEON/ontology/material/Material>

## Core Material<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/CoreMaterial>

**Sub Class Of** <http://w3id.org/CEON/ontology/material/Material>

## Coupling Cone<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/CouplingCone>

**Sub Class Of** [ElectronicsProduct<sup>C</sup>](#)

## Damper<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/Damper>

**Sub Class Of** [ElectronicsProduct<sup>C</sup>](#)

**Named Individuals** [damper\\_x<sup>ni</sup>](#)

## Double Magnet<sup>C</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/DoubleMagnet>

**Sub Class Of** [ElectronicsProduct<sup>C</sup>](#)

## Electronics Product<sup>C</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/ElectronicsProduct>

**Sub Class Of** <http://w3id.org/CEON/ontology/product/Product>

**Super Class Of**

- [AluminumDomeTweeter<sup>C</sup>](#)
- [CouplingCone<sup>C</sup>](#)
- [Damper<sup>C</sup>](#)
- [DoubleMagnet<sup>C</sup>](#)
- [Frame<sup>C</sup>](#)
- [NeodymiumMagnet<sup>C</sup>](#)
- [Speaker<sup>C</sup>](#)

## Electronics Product Sourcing Component Relation<sup>C</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/ElectronicsProductSourcingComponentRelation>

**Sub Class Of** <http://w3id.org/CEON/ontology/provenance/Statement>

## Fibre Material<sup>C</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/FibreMaterial>

**Sub Class Of** <http://w3id.org/CEON/ontology/material/Material>

## Flame Retardant Material<sup>C</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/FlameRetardantMaterial>

**Sub Class Of** <http://w3id.org/CEON/ontology/material/Material>

## Frame<sup>C</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/Frame>

**Sub Class Of** [ElectronicsProduct<sup>C</sup>](#)

## Hardener Material<sup>C</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/HardenerMaterial>

**Sub Class Of** <http://w3id.org/CEON/ontology/material/Material>

## Lca Unit<sup>C</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/LCAUnit>

**Sub Class Of** <http://qudt.org/schema/qudt/Unit>

## Laminate Material<sup>C</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/LaminateMaterial>

**Sub Class Of** <http://w3id.org/CEON/ontology/material/Material>

## Matrix Additive M Aterial<sup>C</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/MatrixAdditiveMaterial>

**Sub Class Of** <http://w3id.org/CEON/ontology/material/Material>

## Metal Material<sup>C</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/MetalMaterial>

**Sub Class Of** <http://w3id.org/CEON/ontology/material/Material>

**Super Class Of**  
[ActinoidsMetal<sup>C</sup>](#)  
[AlkaliMetal<sup>C</sup>](#)  
[AlkalineEarthMetal<sup>C</sup>](#)  
[TransitionalMetal<sup>C</sup>](#)

## Neodymium Magnet<sup>C</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/NeodymiumMagnet>

**Sub Class Of** [ElectronicsProduct<sup>C</sup>](#)

**Named Individuals** [neodymium\\_magnet\\_x<sup>ni</sup>](#)

## Non Metal Material<sup>C</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/NonMetalMaterial>

**Sub Class Of** <http://w3id.org/CEON/ontology/material/Material>

**Named Individuals**  
[carbon\\_material\\_a<sup>ni</sup>](#)  
[nitrogen\\_material\\_a<sup>ni</sup>](#)

## Post Consumer Recycled Content<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/PostConsumerRecycledContent>

**Sub Class Of** <http://qudt.org/schema/qudt/Quantity>

## Pre Consumer Recycled Content<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/PreConsumerRecycledContent>

**Sub Class Of** <http://qudt.org/schema/qudt/Quantity>

## Prepreg Material<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/PrepregMaterial>

**Sub Class Of** <http://w3id.org/CEON/ontology/material/Material>

## Rare Earth Material<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/RareEarthMaterial>

**Sub Class Of** <http://w3id.org/CEON/ontology/material/Material>

## Renewable Content<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/RenewableContent>

**Sub Class Of** <http://qudt.org/schema/qudt/Quantity>

## Resin Material<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/ResinMaterial>

**Sub Class Of** <http://w3id.org/CEON/ontology/material/Material>

## Speaker<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/Speaker>

**Sub Class Of** [ElectronicsProduct<sup>C</sup>](#)

**Named Individuals** [speaker\\_x<sup>hi</sup>](#)

## Surface Finish Material<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/SurfaceFinishMaterial>

**Sub Class Of** <http://w3id.org/CEON/ontology/material/Material>

## Transitional Metal<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/TransitionalMetal>

**Sub Class Of** [MetalMaterial<sup>C</sup>](#)

## Virgin Fossil Content<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/VirginFossilContent>

**Sub Class Of** <http://qudt.org/schema/qudt/Quantity>

## Regulation<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/Regulation>

**Named Individuals** [REACH<sup>ni</sup>](#)

## Reach Compliance<sup>C</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/REACHCompliance>

**Sub Class Of** <http://w3id.org/CE0N/ontology/product/Compliance>

**Equivalentclass** [complianceWith](#) value [REACH<sup>C</sup>](#)

## Issuing Resource<sup>C</sup>

**IRI** <http://w3id.org/CE0N/ontology/actor/IssuingResource>

**Named Individuals** [ds\\_issue\\_1<sup>ni</sup>](#)

## Process Participation<sup>C</sup>

**IRI** <http://w3id.org/CE0N/ontology/actor/ProcessParticipation>

**Named Individuals** [s63<sup>ni</sup>](#)

## Producing Resource<sup>C</sup>

**IRI** <http://w3id.org/CE0N/ontology/actor/ProducingResource>

**Named Individuals**  
[ss\\_1<sup>ni</sup>](#)  
[ss\\_2<sup>ni</sup>](#)  
[ss\\_3<sup>ni</sup>](#)

## Supplying Resource<sup>C</sup>

**IRI** <http://w3id.org/CE0N/ontology/actor/SupplyingResource>

**Named Individuals** [s7<sup>ni</sup>](#)

## Actor<sup>C</sup>

**IRI** <http://w3id.org/CE0N/ontology/actorODP/Actor>

**Named Individuals** [M<sup>ni</sup>](#)  
[company\\_a<sup>ni</sup>](#)  
[company\\_b<sup>ni</sup>](#)  
[company\\_x<sup>ni</sup>](#)  
[company\\_y<sup>ni</sup>](#)  
[dismantling\\_company\\_b<sup>ni</sup>](#)

## Resource Relation<sup>C</sup>

**IRI** <http://w3id.org/CE0N/ontology/actorODP/ResourceRelation>

**Named Individuals** [composition\\_a<sup>ni</sup>](#)

## Process<sup>C</sup>

**IRI** <http://w3id.org/CE0N/ontology/processODP/Process>

**Named Individuals** [dismantling\\_process\\_1<sup>ni</sup>](#)

## Object Properties

### defined unit of system<sup>op</sup>

**IRI** <http://qudt.org/schema/qudt/definedUnitOfSystem>

### derived coherent unit of system<sup>op</sup>

**IRI** <http://qudt.org/schema/qudt/derivedCoherentUnitOfSystem>

### exact match<sup>op</sup>

**IRI** <http://qudt.org/schema/qudt/exactMatch>

### has dimension vector<sup>op</sup>

**IRI** <http://qudt.org/schema/qudt/hasDimensionVector>

has unit<sup>op</sup>

IRI <http://qudt.org/schema/qudt/hasUnit>

participant role<sup>op</sup>

IRI <http://w3id.org/CE0N/ontology/actor0DP/participantRole>

participating actor<sup>op</sup>

IRI <http://w3id.org/CE0N/ontology/actor0DP/participatingActor>

participating resource<sup>op</sup>

IRI <http://w3id.org/CE0N/ontology/actor0DP/participatingResource>

participation in<sup>op</sup>

IRI <http://w3id.org/CE0N/ontology/actor0DP/participationIn>

## Datatype Properties

conversion multiplier<sup>dp</sup>

IRI <http://qudt.org/schema/qudt/conversionMultiplier>

iec61360code<sup>dp</sup>

IRI <http://qudt.org/schema/qudt/iec61360Code>

numerical value<sup>dp</sup>

IRI <http://qudt.org/schema/qudt/numericalValue>

si units expression<sup>dp</sup>

IRI <http://qudt.org/schema/qudt/siUnitsExpression>

Lca-Acidification<sup>dp</sup>

IRI <http://w3id.org/CE0N/demo/electronics/LCA-Acidification>

Range [xsd:double](#)



## Lca-Climate Change<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/LCA-ClimateChange>

**Range** [xsd:double](#)

## Lca-Climate Change Biogenic<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/LCA-ClimateChangeBiogenic>

**Range** [xsd:double](#)

## Lca-Climate Change Fossil<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/LCA-ClimateChangeFossil>

**Range** [xsd:double](#)

## Lca-Ecotoxicity Freshwater<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/LCA-EcotoxicityFreshwater>

**Range** [xsd:double](#)

## Lca-Eutrophication Freshwater<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/LCA-EutrophicationFreshwater>

**Range** [xsd:double](#)

## Lca-Eutrophication Marine<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/LCA-EutrophicationMarine>

**Range** [xsd:double](#)

## Lca-Human Toxicity Cancer<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/LCA-HumanToxicityCancer>

**Range** [xsd:double](#)

### Lca-Lonising Radition Human Health<sup>dp</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/LCA-LonisingRaditionHumanHealth>

**Range** [xsd:double](#)

### Lca-Mineral Use<sup>dp</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/LCA-MineralUse>

**Range** [xsd:double](#)

### Lca-Water Use<sup>dp</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/LCA-WaterUse>

**Range** [xsd:double](#)

### batch number<sup>dp</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/batchNumber>

**Domain** <http://w3id.org/CEON/ontology/resourceODP/BatchOfObjects>

**Range** [xsd:integer](#)

### component diameter<sup>dp</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/componentDiameter>

**Range** [xsd:double](#)

### component length<sup>dp</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/componentLength>

**Range** [xsd:double](#)

### date of decomissioning<sup>dp</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/dateOfDecomissioning>

**Range** [xsd:dateTime](#)

### date of installation<sup>dp</sup>

**IRI** <http://w3id.org/CEON/demo/electronics/dateOfInstallation>

**Range** [xsd:dateTime](#)

date of production<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/dateOfProduction>

**Domain** <http://w3id.org/CE0N/ontology/resourceODP/BatchOfObjects>

**Range** [xsd:dateTime](#)

decommission reason<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/decommissionReason>

**Range** [xsd:string](#)

density at25<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/densityAt25>

**Range** [xsd:double](#)

electrical conductivity<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/electricalConductivity>

**Range** [xsd:double](#)

electrical resistivity<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/electricalResistivity>

**Range** [xsd:double](#)

fatigue resistance<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/fatigueResistance>

fiber elongation at break<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/fiberElongationAtBreak>

**Range** [xsd:double](#)

fibre volume content<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/fibreVolumeContent>

**Range** [xsd:double](#)

flame retardancy<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/flameRetardancy>

**Range** [xsd:boolean](#)

hazardous materials percentage<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/hazardousMaterialsPercentage>

**Range** [xsd:double](#)

high uv resistance<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/highUVResistance>

**Range** [xsd:boolean](#)

instruction of repair<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/instructionOfRepair>

**Range** [xsd:string](#)

instruction of use and assembly<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/instructionOfUseAndAssembly>

**Range** [xsd:string](#)

instructionof maintenance<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/instructionofMaintenance>

**Range** [xsd:string](#)

lay up sequence<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/layUpSequence>

**Range** [xsd:string](#)

location of batch component<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/locationOfBatchComponent>

**Range** [xsd:string](#)

maintenance report<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/maintenanceReport>

**Range** [xsd:string](#)

manufacturing sequence<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/manufacturingSequence>

**Range** [xsd:string](#)

number of recycling cycles<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/numberOfRecyclingCycles>

product diameter<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/productDiameter>

**Range** [xsd:double](#)

recycling pressure<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/recyclingPressure>

**Range** [xsd:double](#)

recycling process duration<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/recyclingProcessDuration>

**Range** [xsd:double](#)

recycling process name<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/recyclingProcessName>

**Range** [xsd:string](#)

recycling temperature<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/recyclingTemperature>

**Range** [xsd:double](#)

refractive index at25<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/refractiveIndexAt25>

**Range** [xsd:double](#)

reported damage<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/reportedDamage>

**Range** [xsd:string](#)

reported repairs<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/reportedRepairs>

**Range** [xsd:string](#)

sample length<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/sampleLength>

**Range** [xsd:double](#)

shear strength<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/shearStrength>

**Range** [xsd:double](#)

site address<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/siteAddress>

**Range** [xsd:string](#)

site city<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/siteCity>

**Range** [xsd:string](#)

site country<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/siteCountry>

**Range** [xsd:string](#)

site name<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/siteName>

**Range** [xsd:string](#)

site zip code<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/siteZipCode>

**Range** [xsd:string](#)

size level<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/sizeLevel>

**Range** [xsd:double](#)

stiffness<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/stiffness>

**Range** [xsd:double](#)

tensile modulus<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/tensileModulus>

**Range** [xsd:double](#)

tensile strength<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/tensileStrength>

**Range** [xsd:double](#)

transition temperature<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/transitionTemperature>

**Range** [xsd:double](#)

viscosity at25<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/demo/electronics/viscosityAt25>

**Range** [xsd:double](#)

participation time point<sup>dp</sup>

**IRI** <http://w3id.org/CE0N/ontology/actor0DP/participationTimePoint>

## Annotation Properties

expression<sup>ap</sup>

**IRI** <http://qudt.org/schema/qudt/expression>

participating object<sup>ap</sup>

**IRI** <http://w3id.org/CE0N/ontology/actor0DP/participatingObject>

participating subject<sup>ap</sup>

**IRI** <http://w3id.org/CE0N/ontology/actor0DP/participatingSubject>

statement about<sup>ap</sup>

**IRI** <http://w3id.org/CE0N/ontology/provenance/statementAbout>

## Namespaces

:

<http://w3id.org/CE0N/demo/electronics/>

**dcterms**

<http://purl.org/dc/terms/>

**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#>

**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