

## Database Information – ProBas

For the database package from openLCA Nexus. July 2024. Author: Andreas Ciroth

ProBas database obtained from the soda4LCA nodes,  
<https://data.probas.umweltbundesamt.de/unitgroupList.xhtml?stock=PUBLIC> etc.

## About Probas

ProBas (Process-Oriented Basic Data for Environmental Management Instruments) is a database from the German Environment Agency (Umwelt Bundesamt). It includes datasets on energy, materials & products, transport services, disposal, and other services. The database has both unit and system processes. ProBas is not a consistent life cycle assessment database, but a collection of datasets from various ProBas-specific projects. In the recent release, there are three different versions available, which can be combined or also used separately.

- **Probas2\_basis**
- **Probas2\_public**
- **Probas2\_Aufstockung**

## Probas in openLCA

The Probas databases are provided as a collection of zolca files, a compressed openLCA database corresponding to the versions. To use this in openLCA, restore the databases in openLCA<sup>1</sup> (Right-click in the openLCA navigation panel → Restore database; Main menu: Database → Restore database); this recreates the database in openLCA. You can however also import one of the versions into another, by importing them. This will take longer time.

ProBas brings its own LCIA method pack. The categories are a mix of German and English names, as shown below.

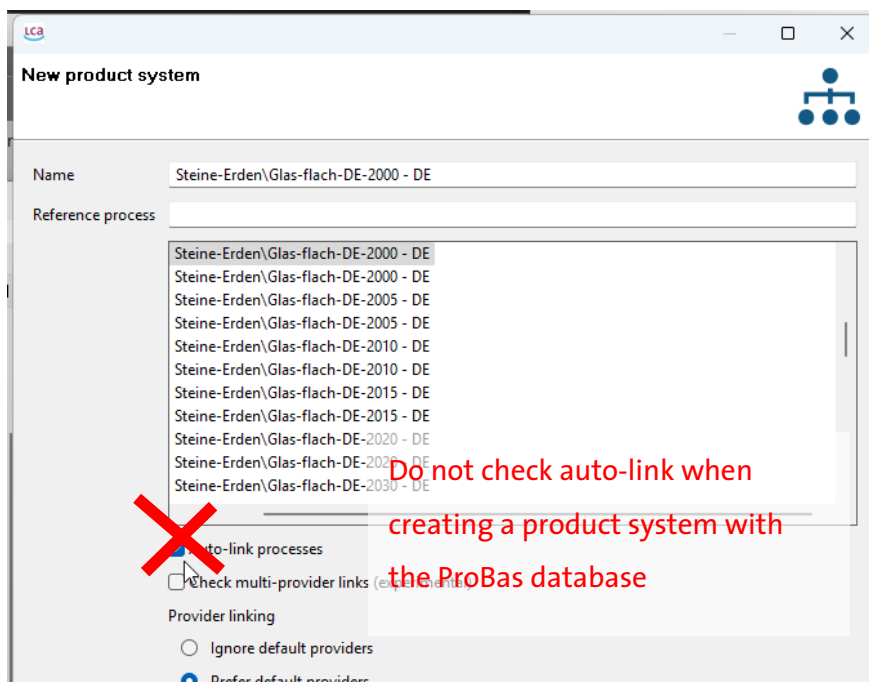
---

<sup>1</sup> [https://greendelta.github.io/openLCA2-manual/databases/restore\\_database.html](https://greendelta.github.io/openLCA2-manual/databases/restore_database.html)

LCIA-Methoden-Datensatz	Mittelwert	Einheit
Aquatische Eutrophierung	0.01617194373529797	kg PO4-Äq.
Hemeroby	3.9639001084509093	m2a
KEA_absolut (Kumulierter Energieaufwand)	313.6078963157216	MJ
KEA_erneuerbar	13.224204501295846	MJ
KEA_fossil	290.3971440544258	MJ
KEA_nuklear	9.98654776	MJ
KRA_Energierohstoffe	9.008211985924735	t
KRA_Metallrohstoffe	5.20972262739288	t
KRA_Steine und Erden	260.17870369861356	t
KRA_absolut (Kumulierter Rohstoffaufwand)	288.49048346108333	t
KRA_sonstige mineral. Rohstoffe	14.093845149152076	t
Landuse	5.588065543048848	m2a
PM10	0.112135808172997	kg PM10 eq
Sommersmog	0.003881733383932793	kg Ethen-Äq.
Stratosphärischer Ozonabbau	1.656524791131112E-5	g FCKW-Äq.
Terrestrische Eutrophierung	0.009811697102126034	kg PO4-Äq.
Treibhauseffekt	19.219229525751885	kg CO2-Äq.
Versauerung	0.1138895092018369	kg SO2-Äq.
Water_use	2.4341911019399998	m3

The databases for ProBas can be combined with each other, but they cannot be directly combined with other databases. A combination requires a mapping of flows, and an alignment of methodology.

Version 2 of ProBas can unfortunately not be used for automatically creating life cycles and product systems; rather, product systems need to be built manually, similar as in the software fka GaBi. The auto-link process checkbox must not be checked when creating a product system:



This can be seen from the linking properties result in openLCA:

## Linking properties

### ▼ Recommended settings when creating product systems

- ⚠ There are processes in the database without default providers for product inputs and/or waste outputs (see table below).
- ⚠ There are product and/or waste flows in the database that have multiple providers (see table below).

Linking properties			Product system creation: Linking option		
		Product flows with multiple providers	Ignore default providers	Prefer default providers	Only default providers
Processes without default providers	Yes	Yes	ambiguous	ambiguous	incomplete
		No			
	No	Yes			
		No			

In datasets, it is often mentioned that a clear “mapping” (of a product or waste flow to a process) cannot be done, and thus dataset usage must be checked in each case (see screenshot below).

```

<uncertaintyDistributionType>undefined</uncertaintyDistributionType>
<generalComment xml:lang="de">Nicht eindeutig mappbarer Fluß – kontextabhängige Verwendung ist zwingend zu überprüfen: </generalComment>
</exchange>
<exchange dataSetInternalID="1">
  <referenceToFlowDataSet type="flow data set" refObjectId="0e0b2476-9043-11d3-b2c8-0080c8941b49">
    <common:shortDescription xml:lang="de">Sekundärrohstoffe</common:shortDescription>
    <common:shortDescription xml:lang="en">secondary raw materials</common:shortDescription>
  </referenceToFlowDataSet>
  <exchangeDirection>Input</exchangeDirection>
  <meanAmount>3.33E-05</meanAmount>
  <resultingAmount>3.33E-05</resultingAmount>
  <uncertaintyDistributionType>undefined</uncertaintyDistributionType>
  <generalComment xml:lang="de">Nicht eindeutig mappbarer Fluß – kontextabhängige Verwendung ist zwingend zu überprüfen: </generalComment>
</exchange>
<exchange dataSetInternalID="2">
  <referenceToFlowDataSet type="flow data set" refObjectId="0e0b2403-9043-11d3-b2c8-0080c8941b49">
    <common:shortDescription xml:lang="de">NE-Schrott</common:shortDescription>
    <common:shortDescription xml:lang="en">NF-scrap</common:shortDescription>
  </referenceToFlowDataSet>
  <exchangeDirection>Input</exchangeDirection>
  <meanAmount>8.93E-07</meanAmount>
  <resultingAmount>8.93E-07</resultingAmount>
  <uncertaintyDistributionType>undefined</uncertaintyDistributionType>
  <generalComment xml:lang="de">Nicht eindeutig mappbarer Fluß – kontextabhängige Verwendung ist zwingend zu überprüfen: </generalComment>
</exchange>
<exchange dataSetInternalID="3">
  <referenceToFlowDataSet type="flow data set" refObjectId="a22c8047-fd56-49a4-8dd2-0c0e54c60cc6">
    <common:shortDescription xml:lang="de">Müll</common:shortDescription>
    <common:shortDescription xml:lang="en">waste</common:shortDescription>
  </referenceToFlowDataSet>
  <exchangeDirection>Input</exchangeDirection>
  <meanAmount>0.00607</meanAmount>
  <resultingAmount>0.00607</resultingAmount>
  <uncertaintyDistributionType>undefined</uncertaintyDistributionType>
  <generalComment xml:lang="de">Nicht eindeutig mappbarer Fluß – kontextabhängige Verwendung ist zwingend zu überprüfen: </generalComment>
</exchange>
<exchange dataSetInternalID="4">
  <referenceToFlowDataSet type="flow data set" refObjectId="cc0e481c-80da-11d4-9e81-0080c8426c9a">
    <common:shortDescription xml:lang="de">Fe-Schrott</common:shortDescription>
    <common:shortDescription xml:lang="en">Fe-scrap</common:shortDescription>
  </referenceToFlowDataSet>
  <exchangeDirection>Input</exchangeDirection>
  <meanAmount>1.31E-08</meanAmount>
  <resultingAmount>1.31E-08</resultingAmount>
  <uncertaintyDistributionType>undefined</uncertaintyDistributionType>
</exchange>
<exchange dataSetInternalID="5">
  <referenceToFlowDataSet type="flow data set" refObjectId="0e0b239c-9043-11d3-b2c8-0080c8941b49">
    <common:shortDescription xml:lang="de">Eisen-Schrott</common:shortDescription>
    <common:shortDescription xml:lang="en">iron-scrap</common:shortDescription>
  </referenceToFlowDataSet>
  <exchangeDirection>Input</exchangeDirection>
  <meanAmount>1.31E-08</meanAmount>
  <resultingAmount>1.31E-08</resultingAmount>
  <uncertaintyDistributionType>undefined</uncertaintyDistributionType>
</exchange>

```

This is a bit inconvenient; we are reaching out to the database operator and maybe this can be overcome later.