

SubSelect

Guidance for using the tool



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1 Who can use SubSelect and for what?

SubSelect¹ is intended but not limited to be used by **FORMULATORS OF MIXTURES** and **DOWNSTREAM USERS** of substances or mixtures.

SubSelect aims to support you in your **SUBSTITUTION** activities. It can be used to **PRIORITISE SUBSTANCES** for substitution if you are unsure about where to start. Its main intention is, however, to support you in **ASSESSING**, which of the **SUITABLE ALTERNATIVES** you identified are the most sustainable² ones and should enter either the next assessment step or be tested in your production or use.

SubSelect can help:

- **EVALUATING** the sustainability of a substance or mixture **AND**
- **COMPARING** the **SUSTAINABILITY** of up to 5 substances and mixtures.

The comparison of sustainability will result in a ranking of the (maximum 5) substances or mixtures you compare with regard to their sustainability. As the tool is designed to be “quick and simple” it may be useful and necessary to further assess those alternatives that qualify as substitute, e.g. the alternatives ranked first and second.

The guidance will lead you through the entire process of using SubSelect and includes several illustrations and screenshots to facilitate understanding. Explanations about the general functions of SubSelect are provided in Section 4.

The figures of this guidance were derived from the English tool version. The Estonian, Latvian and Lithuanian versions have exactly the same design and functions but the menus are translated.



When you see this symbol the information is not necessary but useful to understand the programme and how it works. Quick readers can skip these sections.

Before you start using the programme, it is useful that you get an overall idea of what it does. This is explained in brief in the following.

2 Idea of the assessments

SubSelect evaluates the sustainability of substances and mixtures using several „*main criteria*“:

- Inclusion in lists of priority substances
- Physical-chemical hazards
- Hazardousness for humans
- Hazardousness for the environment
- Mobility
- Greenhouse gas emissions
- Resource consumption
- Responsibility in the supply chain

¹ SubSelect was developed in the frame of a research project of the German Environment Agency (UBA)

² In most cases (and tools), only the toxicity or risk of a substance or mixture is identified and compared. However, it is also important to consider if substitution could negatively affect human health and the environment by other means than their toxicity, e.g. because their production is disproportionately resource intensive (e.g. some nanomaterials) or because they are excavated under unacceptable working or environmental conditions (e.g. gold). Therefore, SubSelect includes a few criteria that aim to approximate other environmental impacts than toxicity.

Some of the main criteria have „*sub-criteria*“, such as the criterion “hazardousness to human health”, which considers separately:

- hazards via inhalation, ingestion and eye contact;
- hazards via dermal contact and
- hazards from endocrine disrupting properties.

SubSelect requests data from the user to determine a value for each main criterion and sub-criterion. This value can be

- Red
substance performs bad for the criterion (e.g. is lethal if ingested in low amounts)
- Yellow
substance performs medium for the criterion (e.g. substance irritates the skin)
- Green
substance performs very well for the criterion (e.g. substance is not hazardous to human health)
- Grey
no data is available to evaluate the criterion (this is an indicator of uncertainty and an incentive for you to look for information to complete the assessment)



If there are sub-criteria, SubSelect will develop the value of the main criterion from these. For mixtures, SubSelect will for most criteria calculate the values for the mixture based on the information and values of the individual substances.



In its logics, SubSelect is biased against substances with very severe hazardous properties. This means for example, that mixtures containing a carcinogen are evaluated as “red” even though it may be contained in very low concentration (i.e. no “dilution of severe hazards”). Therefore, SubSelect always enable you to look at all individual assessments.

If you assess the sustainability of a substance or mixture, the result is a *sustainability profile*, which shows you the evaluation results using a colour code. If you make a comparison, you get the profiles of all compared substances next to each other and also can see numbers that indicate the *sustainability ranking* (1 is best rank).

	Inclusion in priority substance lists
	Physical chemical properties
	Hazardousness for humans
	Hazardousness via inhalation, ingestion and eye contact
	Hazardousness via dermal contact
	Endocrine disruption
	Hazardousness for the environment
	PBT/vPvB
	Aquatic toxicity
	Mobility of the substance
	Release potential water
	Release potential air (environment)
	Long range transport
	Release potential air (humans)
	Release potential work place
	Greenhouse gas emissions from manufacture
	Resource consumption for manufacture
	Renewability of raw materials
	Energy consumption
	Water consumption
	Responsibility in the supply chain
	Supplier responsibility for workers protection
	Supplier responsibility for environmental protection

Example sustainability profile (not complete)

<i>Inclusion in priority substances lists</i>	1	1
<i>Physical chemical properties</i>	1	1
<i>Hazardousness for humans</i>	1	1
Inhalation, ingestion, eye contact	2	2
Dermal contact	2	2
Endocrine disruption	1	1
<i>Hazardousness for the environment</i>	2	1
PBT/vPvB	1	1
Aquatic toxicity	2	1
<i>Mobility of the substance</i>		
Water		
Air (environment)		
Long range transport		
Air (humans)		
Work place		
<i>Greenhouse gas emissions</i>	2	2
<i>Resource consumption</i>		
Renewability of raw materials		
Energy consumption	2	2
Water consumption	2	2
<i>Responsibility in the supply chain</i>		
Worker		
Environment		
Social		

Example comparison of sustainability (not complete)

3 Getting started

3.1 Obtain SubSelect

Download SubSelect. For the Estonian, Latvian and Lithuanian Version you will be asked to provide name and e-mail address, so the tool providers can contact you in case of updates.

- Estonia: <http://fitreach.eu/et/authentication-content>
- Latvian: <http://fitreach.eu/lv/authentication-content>
- Lithuanian: <http://fitreach.eu/lt/content/irankiai>
- English <https://www.umweltbundesamt.de/en/document/subselect-guide-for-the-selection-of-sustainable>
- German Version: <https://www.umweltbundesamt.de/dokument/subselect-instrument-zur-auswahl-nachhaltiger>

Unpack the zip file into a separate folder on your computer. The zip-file contains: a folder called „data“, a file called Readme_EN.txt and a file SubSelect_Vxxx³_English.accdb.

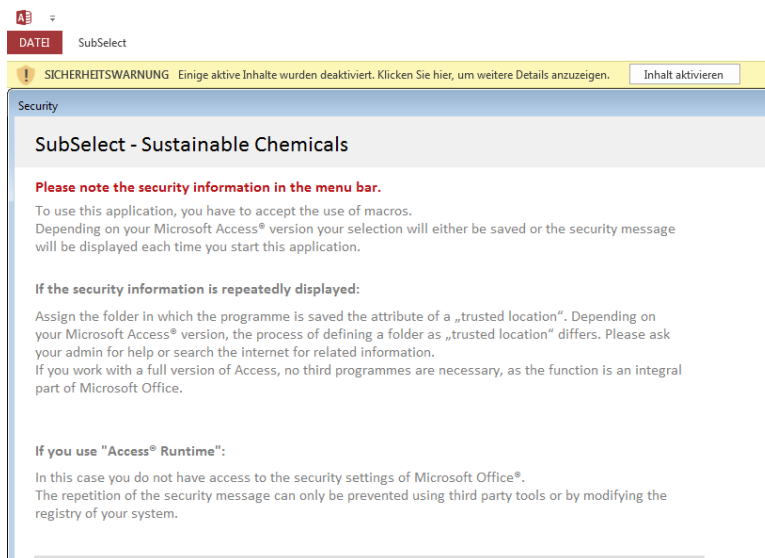
3.2 Check for MS Access®

SubSelect is based on Microsoft® Access® and you need to have either the full program or the so called “run-time” version. Check if MS Access is installed on your computer.

- If you have MS Access® (version 2010 or newer), do yan directly continue
- If you do not have MS Access® or your version is older than 2010, you can use SubSelect if you install Runtime Access®, which is available without charge under: <https://www.microsoft.com/de-de/download/details.aspx?id=50040>

3.3 Enter SubSelect

Doubleclick the file SubSelect_Vxxx3_English.accdb and you may see the following window.



Read the text, it informs you what you should do if you do not want to see this message every time you open the file.

To proceed with SubSelect, click on the button „activate content“ in the yellow safety warning message.

Depending on your MS Access® version, you may or may not be asked to *select the data file (SubSelect_Dat.accdb)*. This is the file where all data that is entered into the programme is

³ The xxx is a place holder for the version number. Currently it is version 112

stored into. It is provided with the programme and contained *in the folder „data“*. Please follow the request.



SubSelect can only work with one data file at a time but it is possible to exchange files, e.g. with colleagues. If you rename the data file or remove it from the folder, SubSelect will not find it and open same window to re-connect the data file. If you want to open a different file (that was generated by SubSelect), you can click on “open” on the very left side of the menu bar to access this window and exchange the data you are working with.

Then you will see the following screen and can actually start...



Click on the picture to continue

4 Overview of basic programme functions

4.1 Start page

This is the start page that you will see after clicking on the image. *Read* the information that is provided *before you start!*

SubSelect - Sustainable Chemicals

SubSelect - Guidance on the selection of sustainable chemicals
Electronic tool for the evaluation and comparison of substances and mixtures

SubSelect aims to give enterprises an orientation on the sustainability of substances and mixtures and options for substitution. SubSelect supports the sustainability assessment and comparison of substances and mixtures and hence guides alternatives assessment. The evaluation of substances or mixtures using SubSelect is no certification or quality label!

[General information on the use of SubSelect →](#)

SUBSTANCES
This section of SubSelect enables you to evaluate the sustainability of individual substances (sustainability profile) or to compare the sustainability of two to five substances (comparison of sustainability). You need the safety data sheet of the substance and/or access to information on its hazardousness and physical chemical properties, e.g. via ECHA's database of registered substances (<http://echa.europa.eu/de/information-on-chemicals/registered-substances>). In addition, information on the supplier are needed and data on greenhouse gas emissions and resource consumption are useful, if available.
If you want to evaluate a mixture containing a substance, you need to enter the substance and related information first.

[Start substance input →](#)

MIXTURE
The part of SubSelect enables you to evaluate the sustainability of mixtures (sustainability profile) and to compare the sustainability of two to five mixtures (comparison of sustainability). The evaluation of mixtures is based on the evaluation of their components for many criteria. Therefore, it is necessary to first enter the individual components of a mixture (area "substances", c.f. above). After that, you can work in the area "mixtures" and define the composition of the mixture.

[Start mixture input →](#)

As you can see, you the tool consists of a section for assessing substances and one for assessing mixtures.



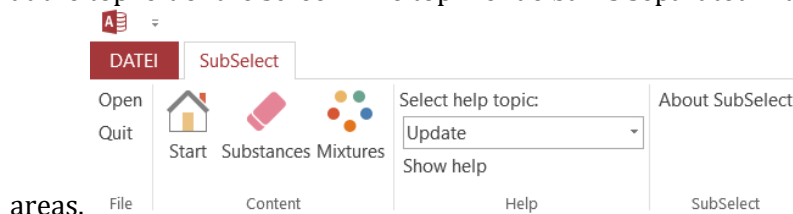
As a general principle, substance information is the basis for any assessment by SubSelect; hence, also if you assess or compare mixtures, the information about the individual substances contained (that you are aware of and) is most important and must be entered first.

Click on the button “*start substance assessment*” in parallel to reading the guidance. The next sections will explain some general options how to navigat in the tool.

4.2 Navigation within the tool

4.2.1 Top menu bar

The menu bar at the top of you screen facilitates interchanging between *basic functions*. If you do not see the top menu bar, click on “SubSelect” at the top left of the screen. The top menu bar is separated into four



areas.

- *Open/quit*: allows opening a new data file or quitting the programme
- Selection of substance or mixture assessment: if you click on “substance” or “mixtures” you are directed to the respective start window of either assessment. The butoon “start” brings you back to the very first page of the programme
- *Help*: Providing help according to different topics
- *About* SubSelect: basic programme information

4.3 Moving forward step by step

The assessment can be done step by step following the questions and instructions of the programme. To walk-through in this way, you best use the „*forward arrow*“ (looking right, middle) which is provided on almost all screens. To go back, use the „*backward arrow*“ and to close the window, use the „*x on red*“ button (far right)⁴.



⁴ The „x on red“ button only closes the window and brings you back to the start page either for substances or for mixtures, depending on what you are working on. It does not close SubSelect – to close the programme click on “quit” at the far left of the programmes top menu bar.

4.4 Where you are

✓	Physical chemical properties
✓	Hazardousness for humans
	Evaluation
✓	Hazardousness for environment
	Evaluation
	Mobility
	Evaluation
✓	Greenhouse gas emissions
	Evaluation
✓	Resource consumption
	- Resources
	- Energy consumption
	- Water consumption

Once you start entering information on a substance or mixture, the menu bar shown at the left will appear. It lists all windows for entering data (e.g. physical chemical properties, Resource consumption – resources, Resource consumption – energy consumption etc.) and the windows, where you can access the results (evaluation).

If there is a tick at the left side of the data entry windows, data has already been entered.

If the title of a page is highlighted in right yellow, this is the one you are on at the moment.

5 Assess a substance

5.1 Management of substances

If you click on „substances“, you will see the following screen, which is the starting point for any activities you do with the programme on substances.

On this page, you see the *full list of all substances* that are already entered into the data file. When you first start the programme, only water is included in the list. As you enter further substances they will be added to the list. From here, you can start any activity for one substance:

The screenshot shows the 'Substances' management interface. At the top, there is a header 'SubSelect - Sustainable Chemicals' and a 'SubSelect' button. Below this is a table with columns: Substance, CAS, EC No., and Article number. The table contains one entry: 'Water (H₂O)' with CAS 7732-18-5 and EC No. 231-791-2. To the right of the table is a sidebar with a 'Selected substance' section containing a 'Test substance' button. Below this are buttons for 'Edit substance evaluation' (highlighted with a green arrow), 'Delete substance evaluation', 'Sustainability profile', 'Add substance' (highlighted with a blue arrow), 'All substances', 'Run calculation', 'Comparison of sustainability', and 'Profile - export as CSV'. A tag at the bottom reads 'Tag X: Evaluation of substance only as component of a mixture'.

Substance ↓	CAS ↓	EC No. ↓	Article number ↓
DEHP	117-81-7	204-211-0	
Water (H ₂ O)	7732-18-5	231-791-2	

If you want to add a substance, you simply *click on „add substance“* (blue arrow), if you want to delete one, click on *„delete substance evaluation“* and if you want to edit data of an existing substance, click on *„edit substance evaluation“* (green arrow) after having marked the specific substance you want to work on.

Mark a substance and click on *„sustainability profile“* to the the evaluation of sustainability. You can compare several substances by clicking on *„comparison of sustainability“*, which will bring

you to a window, where you can select the substances that you want to compare (maximum of 5!).

SubSelect also enables you to export data as CSV (last button on the page). The button “run calculation” should be used, when you import a data file into a new version of SubSelect to ensure that any changes of the REACH-Candidate list are considered in the evaluations.

5.2 Add a substance

If you click on „add substance“ you will see the following screen.



Whenever you see a red questionmark in a box you can click on it and get some help/information on the question that you are currently working on.

Enter the *substance name* and, if you have an internal number for it, an article number.

The *CAS number* is used as unique identifier of the substance in the programme. Therefore, the correctness of the CAS number is checked and you cannot go to the next step without having entered a correct number. Click on „*Test and use CAS number*“, otherwise you cannot proceed.

A – SUBSTANCE IDENTITY	
Date of change	06.06.2019
Substance name	DINP ?
Article number	Tenachem DINP ?
CAS number	<input type="text"/> - <input type="text"/> - <input type="text"/> ? 28553-12-0 Test and use CAS number
EC number	249 - 079 - 5 ?
<input type="checkbox"/> The substance is exclusively assessed as component of a mixture ?	

Then you just answer all the questions that you are asked when you walk through the programme (forward arrow button). After information for a criterion is completely entered (tick in the left navigation bar), you will be shown the assessment results in a separate screen.

5.3 Enter substance data

5.3.1 Hazard classification

SubSelect - Sustainable Chemicals

EVALUATION OF SUBSTANCE

DEHP

- Description of the substance
- Classification (H statements)
- Inclusion on lists
- Physical chemical properties
- Hazardousness for humans
- Hazardousness for environment
- Resource consumption
- Responsibility in supply chain
- Sustainability profile

B – CLASSIFICATION

CLASSIFICATION OF PHYSICAL CHEMICAL PROPERTIES OF THE SUBSTANCE ?

No information on physical chemical properties

Selection of H statements

CLASSIFICATION OF HEALTH HAZARDS ?

H360FD - May damage fertility. May damage the unborn child

Exposure pathway: Not specified

Selection of H statements

CLASSIFICATION OF ENVIRONMENTAL HAZARDS ?

No information on environmental hazards

Selection of H statements

Use the safety data sheet of the substance or, if not available, any public database to obtain the classification of the substance, such as ECHA's classification and [labelling inventory](#). Enter the *H-statements* for all three areas from the drop-down lists. If the substance is *not classified* check if this is due to data indicating that *no classification applies* (first option in the lists) *or* if it is not classified because there is a *lack of data* (third option in the drop-down list).

Some parameters are *automatically assessed* by SubSelect, such as the *inclusion on priority lists* (based on the CAS-Number) and *substance hazards* (H-statements). The next figure shows the evaluation result: the red dot shows that DEHP is not sustainable with a view to the toxicity; it is included on several lists and has CMR and EDC properties.

Red (not sustainable at all)
Large square (main criterion)

In bold: all lists, the substance is included in

In bold: hazardous properties why substance is on the list(s)

The screen as shown in the above figure informs you of the evaluation of the criterion for which you just entered information. If you notice a mistake, you can directly go back (backwards arrow).



You do not have to save anything, the programme automatically saves all data you enter!

If you have no information for a specific criterion, then you can select the option “no information”. This is reflected in the presentation of results by grey/light blue colour. This is exemplarily shown in the next figure.

2 - PHYSICAL CHEMICAL PROPERTIES

Evaluation of physical chemical properties

The hazardousness could not be derived.

DETAILED EVALUATION OF THE CLASSIFICATION

No information on physical chemical properties

5.3.2 Hazardousness for humans

The criterion hazardousness for humans has three sub-criteria, of which the one on *endocrine disruption requires input* in addition to the classification. The screen allows you to select one of the options shown below. For the example substance, a structural similarity to an EDC exists and the respective option is selected.

3 – HAZARDOUSNESS FOR HUMANS

Please enter if you are aware of information that the substance is an endocrine disruptor.

YES - Information from studies
 There are indications as structurally similar substances are identified as EDCs
 No indications on ED properties
 No information available
 I want to skip the sub-criterion
 (not yet assessed)

The result of an assessment of DEHP looks are shown in the following figure with explanation of the meaning of the outcome shown

5.3.3 Mobility

SubSelect requires data on the mobility of the substance to estimate the exposure potential for humans and the environment. You can either enter qualitative or quantitative information, if that is available. Only if you select „*numeric value is available*“ from the drop down list, you are allowed to *enter these specific values*. For many substances you can find this information in [ECHAs database on registered substances](#). Use the „key values for safety assessment“, which are frequently provided in the substance data of that data base.

5 – MOBILITY OF THE SUBSTANCE Skip criterion

Please enter the aggregate state of the substance at processing temperature:

Please enter the water solubility of the substance in mg/l: ?

Please enter the vapour pressure of the substance in Pascal (at 20°C): ?

X 10 Pa = Pa
Translation from bar into pascal
 bar = Pa

Please enter information on the substance's half-life in air: ?
 Days

From the results of the evaluation of the „overall mobility“ (main criterion), you can see that the programme does not average the results of the sub-criteria (e.g. two yellow and three green sub-criteria does NOT result in light green but in yellow) but takes the worst result to derive the main criterion.

The screenshot shows the 'EVALUATION OF SUBSTANCE' window for DEHP. The main panel is titled '5 - MOBILITY OF THE SUBSTANCE - EVALUATION'. It contains the following sub-criteria:

- Evaluation of the mobility of the substance** (Yellow)
- Sub-criterion: Release potential water** (Yellow): Water solubility of 0,003 mg/l.
- Sub-criterion: Release potential air (environment)** (Green): Vapour pressure of 0 Pa.
- Sub-criterion: Long range transport** (Yellow): The substance partitions in air (vapour pressure 0 Pa) and is only moderately degraded in air (half-life between 1 or 2 days).
- Sub-criterion: Release potential air (humans)** (Green): Vapour pressure of 0 Pa.
- Sub-criterion: Release potential at the work place** (Green): Aggregate state: Liquid.

5.3.4 Greenhouse gas and resource consumption

The information input for the following criteria require non-chemical information. If you find this data, *select the colour as indicated* in the options to select (e.g. more than 20 kg; between 1 and 20 kg and below 1 kg CO₂ per kg. Substance in the figure shown below). If you do not have this data, you can skip the question or select „*average value*“ or select information from similar substances. *Reference lists* to see substances which would be evaluated as red, yellow or green can be opened by clicking on the respective buttons.

The screenshot shows the 'EVALUATION OF SUBSTANCE' window for DEHP. The main panel is titled '6 - GREENHOUSE GAS EMISSIONS FROM MANUFACTURE'. It contains the following elements:

- Skip criterion** (Link)
- Text:** Please assess the lists of substances falling into the categories red, yellow or green. Look for substances which are structurally similar (similar molecule), which are manufactured in a similar way (synthesis, extraction etc.) or which are derived from similar raw materials. If you already know the specific CO₂ emissions resulting from the manufacture of the substance, compare the value with those indicated for the three categories. Select the category for your substance which you consider appropriate.
- Reference list buttons:** Reference list RED, Reference list YELLOW, Reference list GREEN.
- Radio button options:**
 - RED -- greater than 20 kg CO₂ equivalents per kg
 - YELLOW -- between 1 and 20 kg CO₂ equivalents per kg
 - GREEN -- less than 1 kg CO₂ equivalents per kg
 - Use average value
 - No information available
 - (not yet assessed)

5.4 Evaluation

When you finished data entry, you can get a sustainability profile by clicking on the respective button. It should look like this.

The screenshot shows the 'EVALUATION OF SUBSTANCE' window for DEHP. The left sidebar contains a checklist of evaluation criteria, with 'Sustainability profile' highlighted. The main area displays the '9 - SUSTAINABILITY PROFILE' with the following categories and their sustainability ranks (indicated by colored squares):

- Inclusion in priority substance lists:** Red square (Rank 2). Note: The substance is included in one or more lists of substances of high concern and should therefore be replaced by safer alternatives, if possible.
- Physical chemical properties:** Light blue square (Rank 1).
- Hazardousness for humans:** Red square (Rank 2). Sub-categories: Hazardousness via inhalation, ingestion and eye contact (Red, Rank 2); Hazardousness via dermal contact (Red, Rank 2); Endocrine disruption (Red, Rank 2).
- Hazardousness for the environment:** Light blue square (Rank 1). Sub-categories: PBT/vPvB (Green, Rank 1); Aquatic toxicity (Grey, Rank 1).
- Mobility of the substance:** Yellow square (Rank 2). Sub-categories: Release potential water (Yellow, Rank 2); Release potential air (environment) (Green, Rank 1); Long range transport (Yellow, Rank 2); Release potential air (humans) (Green, Rank 1); Release potential work place (Green, Rank 1).
- Greenhouse gas emissions from manufacture:** Yellow square (Rank 2).
- Resource consumption for manufacture:** Red square (Rank 2). Sub-categories: Renewability of raw materials (Red, Rank 2); Energy consumption (Yellow, Rank 2); Water consumption (Green, Rank 1).
- Responsibility in the supply chain:** Yellow square (Rank 2). Sub-categories: Supplier responsibility for workers protection (Green, Rank 1); Supplier responsibility for environmental protection (Green, Rank 1); Social responsibility of supplier (Yellow, Rank 2).

Use the scroll bar on the right to see the results at the bottom of the window.

If you make a comparison, e.g. with water the the result looks like this.

The screenshot shows the 'SUSTAINABILITY COMPARISON OF SUBSTANCES' window. It compares DEHP and Water (H₂O) across various sustainability categories. The table below summarizes the data:

Category	DEHP Rank	Water (H ₂ O) Rank
Inclusion in priority substances lists	2	1
Physical chemical properties	1	1
Dermal contact	2	1
Endocrine disruption	2	1
Hazardousness for the environment	1	1
PBT/vPvB	1	1
Aquatic toxicity	1	1
Mobility of the substance	2	1
Water	2	1
Air (environment)	2	1
Long range transport	2	1
Air (humans)	2	1
Work place	1	1
Greenhouse gas emissions	2	1
Resource consumption	2	1
Renewability of raw materials	2	1
Energy consumption	2	1
Water consumption	1	1
Responsibility in the supply chain	2	1
Worker	1	1
Environment	1	1
Social	2	1

Annotations in the image:

- Blue arrow pointing to the question mark icon: "Here you find information on how to read this comparison"
- Blue arrow pointing to the 'Print preview' button: "Here you can first see how it will be printed and can also initiate the print (next window)"
- Blue arrow pointing to the 'Water (H₂O)' column: "The numbers indicate the sustainability rank; as water is not hazardous it always gets rank number 1"
- Blue arrow pointing to the 'Water consumption' row: "Here, DEHP is also uncritical hence, it shares first rank with water"


6 Assessing mixtures

If you want to assess a mixture, *you first insert information on the substances contained* in the mixture. For this, enter all substances that you know are contained (safety data sheet of the mixture) in the substances section (c.f. Chapter 5). You may select the box „*substance is exclusively used in mixtures*“ because then you are not asked to enter some of the information, which is not needed in the mixture assessment at the level of individual substances.

A – SUBSTANCE IDENTITY	
Date of change	22.11.2016
Substance name	Butanon ?
Article number	3023001 ?
CAS number	<input type="text"/> - <input type="text"/> - <input type="text"/> ? 78-93-3 <input type="button" value="Test and use CAS number"/>
EC number	201 - 159 ? Select this field, if substance is only used in mixtures
<input type="checkbox"/>	The substance is exclusively assessed as component of a mixture ?

6.1 Define a new mixture

Select the mixture section and click „*add mixture*“ in the starting window. Then you assign the name and also select *your role* in relation to the mixture (the knowledge of some information differs when you are a formulator or a downstream user. This is considered in some questions by the programme). If you produce mixtures, check formulator, if you use them end-user and if you sell them only, make a tick in the box for the retailer.

1 – IDENTITY OF MIXTURE	
Date of change	09.08.2019
Name of mixture	Test mixture
Article number	123-987
Please specify if you produce the mixture (formulator) or if you use the mixture (end-user) or if you trade the mixture.	<input type="radio"/> Formulator ? <input checked="" type="radio"/> End-user ? <input type="radio"/> Retailer ? <input type="radio"/> (not selected) ?
Specify your role; This influences which data you will be asked to enter	
	
<i>Please first provide information on substance properties in the section for substances. After that select the substance as component of the mixture.</i>	



Before you can assess the mixture, please enter all substances that you are aware of which are contained in it via the “substance” section of SubSelect. Check the safety data sheet of the mixture and/or ask your supplier about the main (hazardous) ingredients to get the information.

6.2 Enter the mixture composition

2 - COMPOSITION OF MIXTURES

Please consider!

CLASSIFIED COMPONENTS

Concentration

NON-CLASSIFIED COMPONENTS

Subselect calculates the share of the mixture of which you have no information on the identity of the ingredients

Get information from mixture safety data sheet

Get information from supplier

UNKNOWN COMPONENTS (SUM)

100 %

+ Water

+ Classified substance

+ Non-classified substance

You have to click on the buttons at the bottom to add the components of the mixture. SubSelect differentiates between *water*, *classified ingredients* and *non-classified ingredients*. The latter are most likely to be unknown to end-users of chemicals, where formulators may have at least some knowledge of these substances.

When you click on one of the three buttons, a new window opens allowing you to enter their concentration or concentration range in the mixture.

Then you simply continue entering the requested information, just as for the substances using the “forward arrow”. As for the substances, you are shown the interim result per each main criterion. As the mixture results are based on the evaluations of the components and not all of these can be shown, you have the possibility of looking them up by clicking on „Details“.

SubSelect - Sustainable Chemicals

EVALUATION OF MIXTURES

Test mixture

7 - MOBILITY - EVALUATION

Here you see that the results for the main criterion are not An average but the worst assessment counts

Evaluation result on mobility for mixtures without a matrix

- Sub-criterion release to water
- Sub-criterion release to air (environment)
- Sub-criterion long range transport
- Sub-criterion release to air (humans)
- Sub-criterion release at the workplace

If you click on “Details” you will be shown the results for the individual Substances in the mixture, which are underlying the evaluation of the mixture for toxicity and mobility

It should be considered in the evaluation that a share of components amounting to 32 % of the mixture consists of components of which it is not clear if they have hazardous properties (either as their identity is not known or data is insufficient for classification). For these components, the mobility in the mixture is not evaluated and they may therefore change the result if information becomes available.

Sustainability profile

6.3 Comparison of sustainability

If you want to compare mixtures, you first enter the mixtures and then select the compare sustainability function, which allows you to select up to 5 mixtures the sustainability performance of which can be evaluated.

As for the substances, the results of the main criteria and the sub-criteria are shown for the mixture. The numbers next to the coloured squares indicate the sustainability rank. In the case of lists of substances e.g. the ranking is worse for mixture B, because the concentration of listed substances is higher than in test mixture B. In test mixture B less substances are contained that are soluble in water and hence, here the rank is better than for the other, however still not good (yellow).

DATE: SubSelect

COMPARISON OF SUSTAINABILITY OF MIXTURES		
	Test mixture	Test mixture B
<i>Inclusion in priority substances lists</i>	■ 1	■ 2
<i>Physical chemical properties</i>	■ 1	■
<i>Hazardousness for humans</i>	■ 1	■ 2
Inhalation, ingestion, eye contact	■ 1	■ 2
Dermal contact	■ 1	■ 2
Endocrine disruption	■ 1	■ 2
<i>Hazardousness for the environment</i>	■ 1	■
PBT/vPvB	■ 1	■ 1
Aquatic toxicity	■ 1	■
<i>Mobility of the substance</i>	■ 2	■ 1
Water	■ 2 →	■ 1 →
Air (environment)	■ 2 →	■ 1 →
Long range transport	■ 1 →	■ 2 →
Air (humans)	■ 2 →	■ 1 →
Work place	■ 1	■ 1
<i>Greenhouse gas emissions</i>	■ 1	■ 1
<i>Resource consumption</i>	■ 1	■ 1
Renewability of raw materials	■ 1	■ 2
Energy consumption	■ 1	■ 1
Water consumption	■ 2	■ 1
<i>Responsibility in the supply chain</i>	■ 1	■ 1
Worker	■ 1	■ 1
Environment	■ 1	■ 1
Social	■ 1	■ 1
<i>Share of unknown components</i>	32%	5%

7 Updates

Unfortunately, the tool cannot (yet) automatically run an update, when the candidate list of REACH is updated. Therefore, a new version is provided after every update of the candidate list. If you download and use a new version of SubSelect, keep your „old“ data file and connect it to the programme (click „open“ in the main top menu!).

Then click „run calculation“ on the overview page of substances and mixtures to ensure that if you entered substances that were just included on the candidate list are evaluated with the most recent version of the candidate list!