National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport

ConsExpo Web export to Chesar – Manual
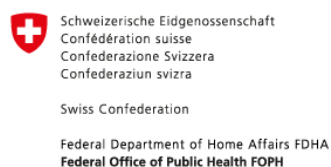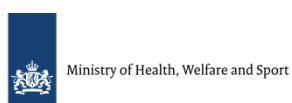
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ConsExpo
consumer | exposure

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1 Introduction

ConsExpo Web is a software tool that enables the estimation of exposure to substances from consumer products such as paint, cleaning agents and personal care products. The ConsExpo model is developed by the National Institute for Public Health and the Environment (RIVM). Since October 2016, the improved web-based version ConsExpo Web is online available.

ConsExpo is a recommended tool for higher tier assessments for consumer exposure under REACH. ConsExpo is one of the most used exposure estimation tools for consumer assessment in REACH registration dossiers. Chesar is a software tool developed by ECHA to support registrants in generating chemical safety reports in an efficient way and associate exposure scenarios for communication (to be annexed to the Safety Data Sheet). To support users of Chesar, an automatic transfer of data from ConsExpo Web to Chesar is desired, thereby lowering the workload of manual input and reducing copying mistakes by registrants. In return, the import of data in Chesar should contain all the data required to reproduce the assessment in ConsExpo Web.

Hence, it is useful to generate an export file (Chesar XML file) in ConsExpo Web that can be imported in Chesar, containing the conditions of use and the information that is required in ConsExpo Web to be able to reproduce the exposure assessment. By use of this Chesar export file, the exposure assessment of a chemical in a product (corresponding to a single contributing activity in a REACH data structure) can be automatically reported in the Chemical Safety Report generated by Chesar. Furthermore, the relevant conditions of use can be extracted to the Exposure Scenario for communication to downstream users, within Chesar.

In the following section, a step-by-step description is provided on how to generate an export file (Chesar XML file) and how to import this file in Chesar.

In Annex 1, a mapping table is provided, in which the linkage of input parameters and results from ConsExpo Web to parameters in Chesar is described, presenting the different terminologies used in the two software tools.

2   Generating the export file

2.1   **Within ConsExpo Web**

ConsExpo Web can be found on www.consexpoweb.nl.
When ConsExpo is opened, the first screen is the 'Assessments' screen.
This screen provides an overview of all the assessments (if any have
been made already) of the current user. The user may create a new
assessment, import an assessment from a file or create a new
assessment using information from the fact sheets, using the 'Use Fact
Sheet' button.

For more information on the use of ConsExpo Web, please see at
http://www.rivm.nl/en/Topics/C/ConsExpo/Help or read the ConsExpo
Web manual
(http://www.rivm.nl/Documenten_en_publicaties/Wetenschappelijk/Rap
porten/2016/december/ConsExpo_Web_Consumer_exposure_models_M
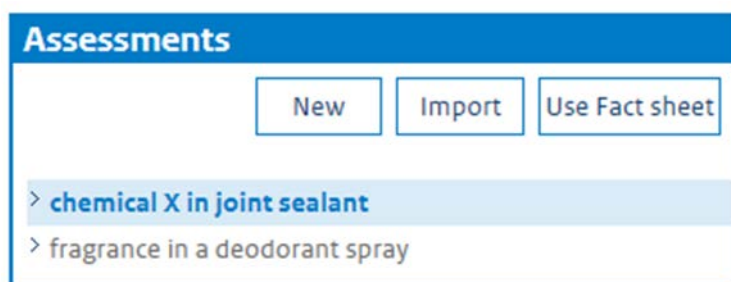odel_documentation).

*Figure 1. The ConsExpo Assessments window gives an overview of available
assessments.*

A report of the assessment is generated by pressing the 'Report' button
in the 'Assessment settings' window (see Figure 2). The ConsExpo report
gives a complete (textual) overview of the exposure calculation. It
displays all parameter values and the calculated exposures.

For creating an export file for Chesar, select the Export button at
Assessment settings (see Figure 2).

Figure 2. The Assessment settings window shows the settings for the selected assessment and allows the user to edit, delete or export the assessment to file. Additionally, if an assessment has been completely specified, a report may be generated by using the 'Report' button.

Select the Export button. Under 'Export to Chesar' select the relevant scenario for exporting.

Figure 3. The Download assessment and Export to Chesar window provides the possibility to save the exposure assessment in a ConsExpo file in the upper window (.ce), as well as to a Chesar XML file (.chr3) in the lower window which could be imported in Chesar.

Select the relevant Product Category (PC) number from the pick-list (PCs are determined according to the use descriptor system under REACH; https://echa.europa.eu/documents/10162/13632/information_requirements_r12_en.pdf).
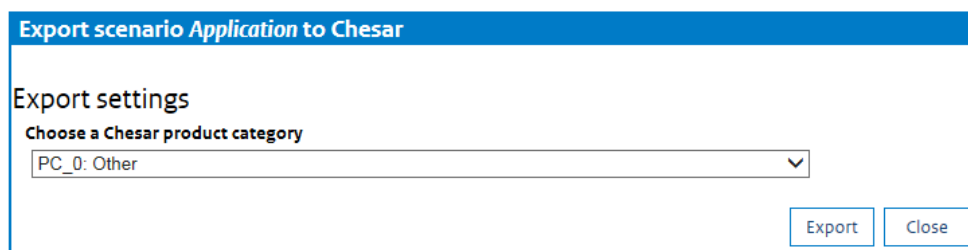

Figure 4. The Export scenario window, where the relevant product category (PC) needs to be selected. Using the export button, the Chesar XML file can be saved in a folder.

Select *Export,* and save the file with a relevant name as .chr3-file in your folder.

It should be noted:

- The justification for the exposure parameters, e.g. a ConsExpo Fact sheet, is not saved in the ConsExpo file. Therefore, that information is also not exported to Chesar. It might be added as supporting information in the description field (see Figure 5), or requires manual input in Chesar.
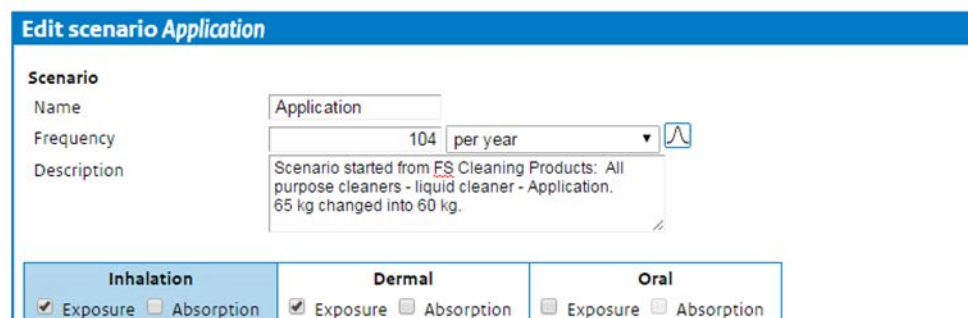

Figure 5. The Edit scenario window shows the settings from a Fact Sheet when input from "Use Fact Sheet" is used. In the description field information on the selected Fact Sheet – product category – product and scenario can be added. Also information when parameters are changed from default choices can be added here. This will be exported to Chesar as well.

- The format to export an exposure assessment to Chesar requires input for body weight, surface area, and frequency of use. In case one or more of these parameters have not been filled in, a warning message is provided. This warning in ConsExpo Web is only provided when the exposure assessment is exported as Chesar output file.
- The use of distributions in the ConsExpo Web exposure assessment is not supported in the export to Chesar.

- An exposure assessment performed with the emission model in ConsExpo Web is not supported in the export to Chesar.
- Weight fraction can be filled in at assessment level as well as in the models for the different exposure routes. The weight fractions per route may differ (for example when exposure can occur to diluted products). The weight fractions as specified in the different routes are reported in the exposure dataset in Chesar in the field "explanations on exposure estimations".

2.2   Within Chesar

Within Chesar the relevant substance dossier should be selected.
- Go to Uses (box 2)
- Select *Manufacture/ Import*
- Right click and select +Add (when not performed in an earlier session)
- Select *Consumer use* and provide relevant name
- Select *Consum (t); name*, right click and select + Add (when not performed in an earlier session)
- Select *Consumer contributing activity*
- Fill in name and select the relevant *product category (PC)*
- Go to Exposure Assessment (box 3)
- Select your *Contributing activity*
- At *Exposure estimates*", select *Import external tool dataset*
- Select your 'ConsExpo to Chesar' export file (name.chr3)
- Select *OK*
- Select *Close*

It should be noted:
- Assessment name, product name, scenario name, model choices, as well as several input parameters in ConsExpo Web are transferred to the "Explanation on exposure estimations" field in Chesar. They are found when the ConsExpo Web link in Chesar in the results section is clicked.
- Input parameters transferred to the "Explanation on exposure estimations" field are provided with the unit as selected in ConsExpo Web (See Table 1 in the Annex).
- In Table 2 (Annex), an overview is provided with explanations on the way the results (output parameters) from ConsExpo Web are mapped to Chesar fields.

ANNEX

Supporting text to the mapping table – input parameters

All input parameters from ConsExpo Web are listed and sorted according to the type of parameters. The sorting is meant to support the identification of parameters used by different models which nevertheless may have the same meaning. The following types of parameters are presented:
- General information: such as assessment name, scenario name…
- Exposure models: exposure model by dermal (instant application, constant rate, etc.), by inhalation (exposure to vapour, instantaneous release or constant rate, etc.) or by oral (direct oral intake, constant rate, etc.).
- Substance specific inputs: chemical-physical properties of substance such as molecular weight, partition coefficient and vapour pressure at temperature of application.
- Common inputs used in all models: body weight, use frequency, etc.
- Inputs related to room characterisation: room volume, ventilation rate, room height.
- Inputs related to amount: information on substance in product such as weight fraction substance (by route of exposure), product amount (by route), released mass, amount ingested.
- Inputs related to exposure time: information on application durations and resulting exposure durations (mostly route specific) such as Spray duration, Application duration, Emission duration, Exposure time, Release duration, Contact time, Exposure duration (by inhalation and by oral route).
- Additional inputs specific to skin exposure.
- Additional inputs specific to inhalation exposure.
- Additional inputs specific to oral exposure.
- Specific inputs related to absorption.

Each input parameter is characterised by:
- Name
- Category of parameter (qualitative or quantitative)
- Unit (if not qualitative)
- Parameter explanation
- Indication for which model(s) the parameter is relevant
- Destination in Chesar
  a) Blue field for a few parameters which will have to be shown at import stage for comparison with information available in Chesar. This enables the assessor to check that he is using his ConsExpo assessment for
     - the relevant contributing activity/scenario as defined in Chesar and,

- for the relevant substance properties coming from the IUCLID dataset to Chesar.

b) Pink field if the content is to be exported to a condition of use. The existing built-in condition of use templates of Chesar have been used as far as possible. Few additional conditions of use templates have been created. Corresponding text for the exposure scenario for communication (SDS-ES in Chesar) has been included in the template as well. In some cases several parameters with the same meaning (for the same route but used by different models) are exported to the same condition of use template in Chesar. This is for example the case for the Input parameters related to release/exposure duration where the 9 input parameters of ConsExpo are grouped into 4 conditions of use in Chesar.

c) Green field if the content is to be exported to the field "explanation for exposure estimate" as text. This mainly covers parameters which have no clear meaning for a downstream user.

Table 2. Output parameters in ConsExpo Web mapped to Chesar fields (provided by ECHA)

Outputs by route of exposure	ConsExpo Web outputs	Explanations	Input to REACH Risk characterisation (will be performed in Chesar)	Chesar field (exposure estimation section)
Inhalation outputs	mean event concentration (mg/m^3)	concentration resulting from one event/day	To be compared to the chronic DNEL. Note: If the total exposure duration over the day is short (e.g. < 8h), the exposure may be adapted based on modified Haber Law. Such adaptation is not implemented in ConsExpo so, if wished, should be done manually in Chesar. For infrequent uses (up to 15 events/year), it may be compared to the DNEL for infrequent uses (e.g. derived from 28 day study and covering up to 15 exposure days per year) if available.	Inhalation exposure: long term concentration
Dermal outputs	dermal load (mg/cm^2)	dermal load from 1 event/day	To be compared to local DNEL(s) if available.	Dermal exposure: local concentration on skin
	external event dose (mg/kg bw)	external dose from 1 event/day	This value is used for the long term systemic exposure dose if the frequency <=365 per year For infrequent uses (up to 15 events per year), it may be compared to the DNEL for infrequent uses if available	Dermal exposure: long term systemic dose
	external dose on day of exposure (mg/kg bw)	external dose per day: takes into account frequency over the day	This value is used for the long term systemic exposure dose if the frequency >365 per year	Dermal exposure: long term systemic dose
Oral outputs	external event dose (mg/kg bw)	external dose during 1 event	This value is used for the long term systemic exposure dose if the frequency <=365 per year For infrequent uses (up to 15 events per year), it may be compared to the DNEL for infrequent uses if available	Oral exposure: long term systemic dose
	external dose on day of exposure (mg/kg bw)	external dose per day: takes into account frequency over the day	This value is used for the long term systemic exposure dose if the frequency >365 per year	Oral exposure: long term systemic dose