

SCEDs in Chesar

ENES 5

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SCEDs in Chesar: main principles

- Chesar 2.3 aims at supporting registrants to use SCEDs information for the assessment of consumer uses, based on exposure estimates generated by ECETOC TRA v3.1
- For that purpose, Chesar enables industry associations developing SCEDs to generate them in an XML format that can be read by Chesar (for the registrant's safety assessment)

SCEDs in Chesar: main principles

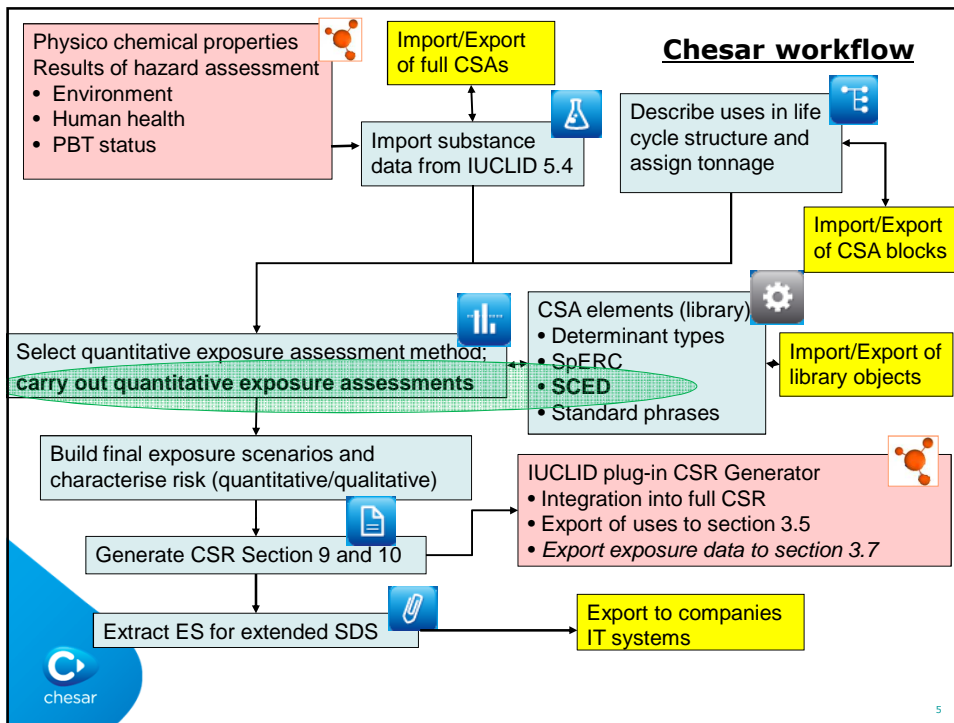
Basic principles, when a SCED is used for the exposure assessment based on ECETOC TRA v3.1

- the input parameters for exposure estimation are automatically fed in from the SCED (in addition to the substance properties which are relevant)
- The explanations (rational) related to the various parameters are automatically conveyed to the ES to support the reader of the CSR in understanding the assessment
- The parameters relevant for the producer of the consumer product are automatically conveyed to the ES for the SDS in the form of an ECom standard phrase

The Chesar Boxes

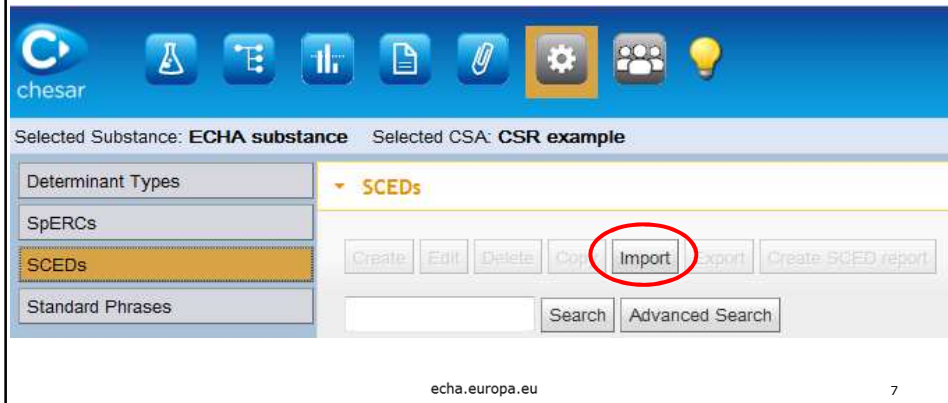


- 1. Manage substances**
- 2. Reporting of uses**
- 3. Exposure estimation**
- 4. ES building and CSR generation**
- 5. Generation of ES for extended SDS**
- 6. Library management**
- 7. User management**



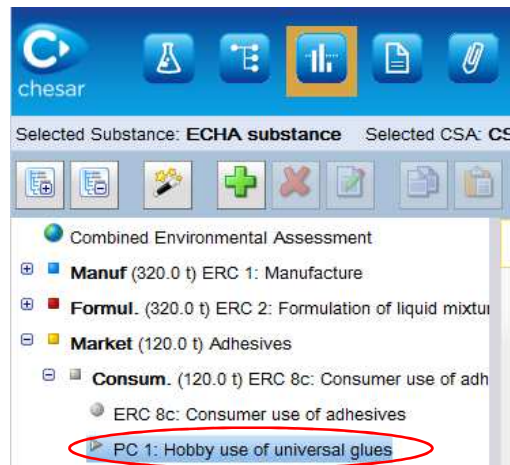
Import the SCED in Chesar format

- SCED should have been downloaded in Chesar format from industry website



The screenshot shows the Chesar software interface. At the top, there is a blue header with the Chesar logo and several icons. Below the header, the selected substance is 'ECHA substance' and the selected CSA is 'CSR example'. On the left, there is a sidebar with 'Determinant Types', 'SpERCs', 'SCEDs', and 'Standard Phrases'. The 'SCEDs' section is active, showing a list of buttons: 'Create', 'Edit', 'Delete', 'Copy', 'Import', 'Export', and 'Create SCED report'. The 'Import' button is circled in red. Below the buttons, there are search fields for 'Search' and 'Advanced Search'. At the bottom, the URL 'echa.europa.eu' and the page number '7' are visible.

Select the consumer use to be assessed in the life cycle tree



The screenshot shows the Chesar software interface displaying a life cycle tree. The selected substance is 'ECHA substance' and the selected CSA is 'CS'. The tree structure is as follows:

- Combined Environmental Assessment
 - Manuf. (320.0 t) ERC 1: Manufacture
 - Formul. (320.0 t) ERC 2: Formulation of liquid mixture
 - Market (120.0 t) Adhesives
 - Consum. (120.0 t) ERC 8c: Consumer use of adhesives
 - ERC 8c: Consumer use of adhesives
 - PC 1: Hobby use of universal glues

The 'PC 1: Hobby use of universal glues' item is circled in red. At the bottom, the URL 'echa.europa.eu' and the page number '8' are visible.

Select exposure estimation method: ECETOC TRA v3.1

The dialog box titled "Select exposure estimation method" is open over a tree view. The tree view shows a selected node: "Consum. (120.0 t) ERC 8c: Consumer use of adhesives" > "ERC 8c: Consumer use of adhesives" > "PC 1: Hobby use of universal glues". The dialog box contains the following options:

- Select exposure estimation method
- TRA Consumers v3
- TRA Consumers v3.1** (highlighted with a red oval)
- Measured data
- External exposure estimation tool
- Cancel

Select exposure estimation method: ECETOC TRA v3.1

The dialog box titled "Create TRA Consumers v3.1 assessment" is open. The "Select SCED" button is highlighted with a red oval. Below the button, there are fields for "SCED name:" and "SCED code:". A list of exposure routes is shown with checkboxes:

- Inhalation, systemic, long-term
- Inhalation, systemic, acute
- Inhalation, local, long-term
- Inhalation, local, acute
- Dermal, systemic, long-term

At the bottom of the dialog box are "OK" and "Cancel" buttons.

Select appropriate SCED

- Default selection: SCEDs available in the library identified with the PC code of the contributing scenario

Create TRA Consumers v3.1 assessment

Select SCED

SCED search

Keywords Search Advanced Search View

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Code	Name	Scope	PC/AC	Author
FEICA_SCED_1_1_a_v1	Universal Glues Hobby Use	The present SCED provides a set of determinants...	PC-1: Adhesives, Sealants	testing

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Exposure estimation is automatically carried out

chesar

Selected Substance: ECHA substance Selected CSA: CSR example

Combined Environmental Assessment

- Manuf (320.0 t) ERC 1: Manufacture
- Formul. (320.0 t) ERC 2: Formulation of liquid mixtu
- Market (120.0 t) Adhesives
 - Consum. (120.0 t) ERC 8c: Consumer use of adh
 - ERC 8c: Consumer use of adhesives
 - PC-1: Hobby use of universal glues
 - TRA Consumer v3.1**
- Market (200.0 t) Coatings and Inks

Exposure and risk characterisation ratios

Conditions of Use

Exposure and risk characterisation ratios

Assessment name: TRA Consumer v3.1
 Sced code: FEICA_SCED_1_1_a_v1
 Sced name: Universal Glues Hobby Use

Information on calculation

	Exposure	RCR
Inhalation, systemic, long-term	13.24 mg/m ³	2.177
Inhalation, systemic, acute	45 mg/m ³	
Inhalation, local, long-term	13.24 mg/m ³	
Inhalation, local, acute	45 mg/m ³	
Dermal, systemic, long-term	0.25 mg/kg bw/day	0.071
Dermal, systemic, acute	0.25 mg/kg bw/day	
Oral, systemic, long-term	0 mg/kg bw/day	0

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Conditions of Use

C-1 Product (article) characteristics

Concentration of substance in mixture	= 0.5 g/g	
Exposure via Oral route	Oral exposure is considered to be not relevant	
Spray	No	

C-2 Amount used, frequency and duration of use/exposure

Frequency of use over a year	Frequent	
Frequency of use over a day	= 1 events/day	
Amount of product used per application	= 9 g/event	
Exposure time	= 4 hr	

C-3 Measures related to information and behavioural advice to consumers including personal protection and hygiene

Adult/Child assumed	Adult	
Place of use	Indoor	

C-4 Other conditions affecting consumers exposure

Inhalation factor	= 1	
Body parts potentially exposed	Two fingertips	
Dermal transfer factor	= 0.1	

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Concentration of substance in mixture can be adapted to the case

Edit Concentration of substance in mixture

Description of determinant
 Fraction of substance (>0 to 1) in the product.

Effective routes Oral, Dermal, Inhalation

Value = 0.05 g/g (min: 0; max: 1)

Substance used as additive in glue

Explanation for CSR
 3966 characters remaining.

Internal note

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▼ Conditions of Use

C-1 Product (article) characteristics

Concentration of substance in mixture	= 0.5 g/g	
Exposure via Oral route	Oral exposure is considered to be not relevant	
Spray	No	

C-2 Amount used, frequency and duration of use/exposure

Frequency of use over a year	Frequent	
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Amount of product used per application	= 9 g/event	
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C-3 Measures related to information and behavioural advice to consumers including personal protection and hygiene

Adult/Child assumed	Adult	
Place of use	Indoor	

C-4 Other conditions affecting consumers exposure

Inhalation factor	= 1	
Body parts potentially exposed	Two fingertips	
Dermal transfer factor	= 0.1	

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Edit Amount of product used per application

Description of determinant
Tra Consumer Determinant

Effective routes: Inhalation

Value: = 9 g/event

From SCED. Cannot be modified

RIVM report 320104007 - Do-It-Yourself Products Fact Sheet p. 35 - 37; W. ter Burg, H.J. Bremmer, J.G.M van Engelen)

Explanation for CSR

From SCED:
- Explanation
- Source of information

Internal note

OK Cancel

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Conditions of use in the CSR

9.1.2. Consumer contributing scenario 1: Universal Glues Hobby Use (PC 1)

9.1.2.1. Conditions of use

ECETOC TRA Consumer V. 3.1:Sced used: FEICA_SCED_1_1_a_v1 Universal Glues Hobby Use

	Method
Product (article) characteristics	
• Concentration of substance in mixture: = 0.05 g/g <i>Additive in the glue</i>	SCED based
• Exposure via Oral route: Oral exposure is considered to be not relevant <i>Post-market surveillance</i>	SCED based
• Spray: No	SCED based
Amount used, frequency and duration of use/exposure	
• Frequency of use over a year: Frequent <i>RIVM report 320104007: 0,15 /day (Do-It-Yourself Products Fact Sheet p. 35 - 37; W. ter Burg, H.J. Bremmer, J.G.Mvan Engelen)</i>	SCED based
• Frequency of use over a day: = 1 events/day <i>Market surveillance data</i>	SCED based
• Amount of product used per application: = 9 g/event <i>RIVM report 320104007 - Do-It-Yourself Products Fact Sheet p. 35 - 37; W. ter Burg, H.J. Bremmer, J.G.Mvan Engelen)</i>	SCED based
• Exposure time: = 4 hr <i>RIVM report 320104007 (Do-It-Yourself Products Fact Sheet p. 35 - 37; W. ter Burg, H.J. Bremmer, J.G.Mvan Engelen)</i>	SCED based
Measures related to information and behavioural advice to consumers including personal protection and hygiene	
• Adult/Child assumed: Adult	SCED based
• Place of use: Indoor	SCED based
Other conditions affecting consumers exposure	
• Inhalation factor: = 1	SCED based
• Body parts potentially exposed: Two fingertips	SCED based
• Dermal transfer factor: = 0.1 <i>Substances included into or onto a hardened adhesive matrix cannot easily penetrate through the surface layer anymore to get in contact with the skin. Following the Stokes-Einstein equation diffusion of molecules in liquids is controlled by temperature and viscosity. The latter is a function of the molecular weight of the matrix (ca. 10000 g/mol in the beginning of the hardening process). During the curing process, that typically takes place within a few minutes, the mean free length of path for molecules decreases while the</i>	SCED based

9.1.2. Consumer contributing scenario 1: Universal Glues Hobby Use (PC 1)

9.1.2.1. Conditions of use

ECETOC TRA Consumer V. 3.1.Scened used: FEICA_SCED_1_1_a_v1 Universal Glues Hobby Use

Conditions

	Method
Product (article) characteristics	
• Concentration of substance in mixture: =0.05 g/g <i>Additive in the glue</i>	SCED based
• Exposure via Oral route: Oral exposure is considered to be not relevant <i>Post-market surveillance</i>	SCED based
• Spray: No	SCED based
Amount used, frequency and duration of use/exposure	
• Frequency of use over a year: Frequent	SCED based

• Dermal transfer factor: =0.1

Substances included into or onto a hardened adhesive matrix cannot easily penetrate through the surface layer anymore to get in contact with the skin. Following the Stokes-Einstein equation diffusion of molecules in liquids is controlled by temperature and viscosity. The latter is a function of the molecular weight of the matrix (ca. 10000 g/mol in the beginning of the hardening process). During the curing process, that typically takes place within a few minutes, the mean free length of path for molecules decreases while the medium molecular weight of the matrix increases. A value of 10% is conservative and takes not into account that in addition only few chemicals have skin penetration rates > 5%.

through the surface layer anymore to get in contact with the skin. Following the Stokes-Einstein equation diffusion of molecules in liquids is controlled by temperature and viscosity. The latter is a function of the molecular weight of the matrix (ca. 10000 g/mol in the beginning of the hardening process). During the curing process, that typically takes place within a few minutes, the mean free length of path for molecules decreases while the

Exposure and risks in the CSR

9.1.2.2. Exposure and risks for consumers

The exposure concentrations and risk characterisation ratios (RCR) are reported in the following table.

Table 1. Exposure concentrations and risks for consumers

Route of exposure and type of effects	Exposure concentration	Risk characterisation
Inhalation, systemic, long-term	0.662 mg/m ³ (TRA Consumer v3.1)	RCR = 0.109
Dermal, systemic, long-term	0.012 mg/kg bw/day (TRA Consumer v3.1)	RCR < 0.01
Oral, systemic, long-term	0 mg/kg bw/day (TRA Consumer v3.1)	RCR < 0.01
Combined routes, systemic, long-term		RCR = 0.112

ES for communication



1. ES 1: Consumer use; Adhesives, sealants (PC 1)

1.1. Title section

Environment	
CS 1: (Contributing scenario name)	ERC 8c
Consumer	
CS 2: Universal Glues Hobby Use	PC 1

1.2. Conditions of use affecting exposure

1.2.1. Control of environmental exposure: (Contributing scenario name) (ERC 8c)

1.2.2. Control of consumer exposure: Universal Glues Hobby Use (PC 1)

Product (article) characteristics
Limit the substance content in the product to 0.05 g/g
Oral exposure is considered to be not relevant.
No spraying
Amount used, frequency and duration of use/exposure
Covers use up to 1.0 events/day
Covers use up to 9.0 g/event
Measures related to information and behavioural advice to consumers including personal protection and hygiene
Covers adult use
Other conditions affecting consumers exposure
Assumes that potential dermal contact is limited to two fingertips

1.3. Exposure estimation and reference to its source

1.3.1. Environmental release and exposure: Contributing scenario name

ES for communication

1.3. Exposure estimation and reference to its source

1.3.1. Environmental release and exposure: Contributing scenario name

1.3.2. Consumer exposure: Universal Glues Hobby Use (PC 1)

SCED used: FEICA_SCED_1_1_a_v1; Universal Glues Hobby Use

Route of exposure and type of effects	Exposure estimate	RCR
Inhalation, systemic, long-term	0.662 mg/m ³ (SCED based)	0.109
Dermal, systemic, long-term	0.012 mg/kg bw/day (SCED based)	< 0.01
Oral, systemic, long-term	0 mg/kg bw/day (SCED based)	< 0.01
Combined routes, systemic, long-term		0.112

1.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

For the industry
association step by step



Generate the SCED information in a Chesar readable format (Chesar XML)



The screenshot shows the Chesar software interface. At the top, there is a blue header with the 'chesar' logo and several icons representing different functions. Below the header, the interface displays 'Selected Substance: ECHA substance' and 'Selected CSA: CSR example'. On the left side, there is a vertical menu with options: 'Determinant Types', 'SpERCs', 'SCEDs' (which is highlighted in orange), and 'Standard Phrases'. The main area on the right shows a dropdown menu for 'SCEDs' and a row of buttons: 'Create' (highlighted with a red box), 'Edit', 'Delete', 'Copy', 'Import', 'Export', and 'Create'. Below these buttons is a search bar with 'Search' and 'Advanced Search' buttons.

Create/edit SCED

Finalised:

Obsolete:

Select standard phrase from EScom

Name of the SCED:

Scope of the SCED:

Applicability of the SCED:

PC/AC: [select]

SCED Code:

Source of the SCED:

Form of the product: [select]

Adult/Child assumed: Child

Code of related SCEDs:

Common parameters | Dermal parameters | Inhalation parameters | Oral parameters | Administrative information

Concentration of substance in mixture (g/g): Rationale:

Frequency of use over a year: Frequent Rationale:

Frequency of use over a day (events/day): Rationale:

OK Cancel

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Common parameters | Dermal parameters | Inhalation parameters | Oral parameters | Administrative information

Exposure via inhalation route: Yes

Rationale for no exposure via inhalation route:

Amount of product used per application (g/event): Rationale:

Exposure time (hr): Rationale:

Inhalation factor: Rationale:

Spray application: Yes Place of use: Indoor

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Create and export the file in XML

▼ SCEDs

Create Edit Delete Copy Import **Export** **Create SCED report**

Search Advanced Search

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Code	Name	Scope	PC/AC	Author
FEICA_SCED_1_1_a_v1	Universal Glues Hobby Use	The present SCED provides a set of determinants...	PC-1: Adhesives, Sealants	testing

- The content of the SCED information reported in Chesar can be seen by “create SCED report” (generates document with SCED factsheet format)
- It is foreseen that industry association provide the Chesar file on their website. Link also made from Chesar website.

Conclusion



Conclusion

- SCEDs are a harmonised format to document the key input parameters needed for the assessment of substances in consumer products
- Using Chesar 2.3 will be an effective way to make use of SCED in an assessment:
 - Exposure estimation calculated via TRA v3.1 will be embedded into Chesar
 - Information provided by sector associations within the SCEDs is automatically conveyed to exposure estimation, CSR and ES for communication

Thank you!

