

SCEDs for Adhesives and Sealants

Current State of Development Examples

Results of FEICA Case Studies



The FEICA SCEDs – An Overview

Characteristics & Examples	SCEDs
Low or medium amount, small or moderate size surfaces, high frequency of use (Tube glue, universal hobby glue, wood glue, construction glue)	Glues, hobby use (FEICA PC1_1)
High amount, large surface, low frequency of use (Carpet glue, tile glue, wood parquet glue)	Glues DIY-use (FEICA PC1_2)
Sealing off long small gaps to obtain an air- and water-tight joint (Joint sealants delivered in cartridges)	Sealants (FEICA PC1_3):
Gluing a poster to a wall or door, or put in a frame. Temporary attachment of materials (Glue from spray)	Glue Spray (FEICA PC1_4)

FEICA SCEDs coincide with product sub-categories



FEICA SCEDs – What do they look like?

Specific Consumer Exposure Determinants for Sealants

Exposure-Descriptor-or-Determinant	Value	Justification	
Use-description	Joint-sealants-(cartridge).-Sealing-off-gaps-to-obtain-an-air--and-water-tight-joint		
Product/Article-Use-Category	PC1		
PC/AC-Subcategory	PC1_3	Sealants	
Product-Ingredient-Fraction-(by-weight)	0,1	Default-value	TRA: 0.3 SCED: 0.1
Frequency-of-Use-(events/day-or-year)	3-/year	RIVM-report-320104007	TRA: 365 / year SCED: 3 / year
Relevant-Route(s)-of-Exposure	dermal/-inhalation	Oral-exposure-not-considered-relevant-for-this-use-(RIVM-report-320104007)	
Dermal-Specific-Parameters			
Skin-Contact-Area	35,7-cm ²	Unchanged-from-TRA-default-value	
Skin-Transfer-Factor	0,1	Reasonable-worst-case-assumption-(substance-partly-bound-into-/onto-a-matrix).-Applied-dermal-model:-ConsExpo-4.1,-direct-dermal-contact,-constant-contact-rate.	TRA: 1 SCED: 0.1
Inhalation-Specific-Parameters			
Amount-of-Product-used-per-application-(g)	150-gram	Rule-of-proportion-for-75-gram-in-10-and-20-m ³ , respectively(RIVM-report-320104007)	TRA: 390 g SCED: 150 g
Exposure-Time-(hr)	0,75	RIVM-report-320104007	
Room-Volume-(m ³)	20-m ³	Unchanged-from-TRA-default-value	TRA: 4 hrs SCED: 0.1
Oral-Specific-Parameters			
Volume-Ingested-(cm ³)	n/a		
Oral-Transfer-Factor	n/a		
Sector/organisation-with-responsibility-for-the-sheet	FEICA	Detlef-Keller-(detlef.keller@henkel.com)	



FEICA SCEDs – Origin of values for Exposure Determinants

(Example: Specific Consumer Exposure Determinants for Sealants)

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RIVM report 320104007

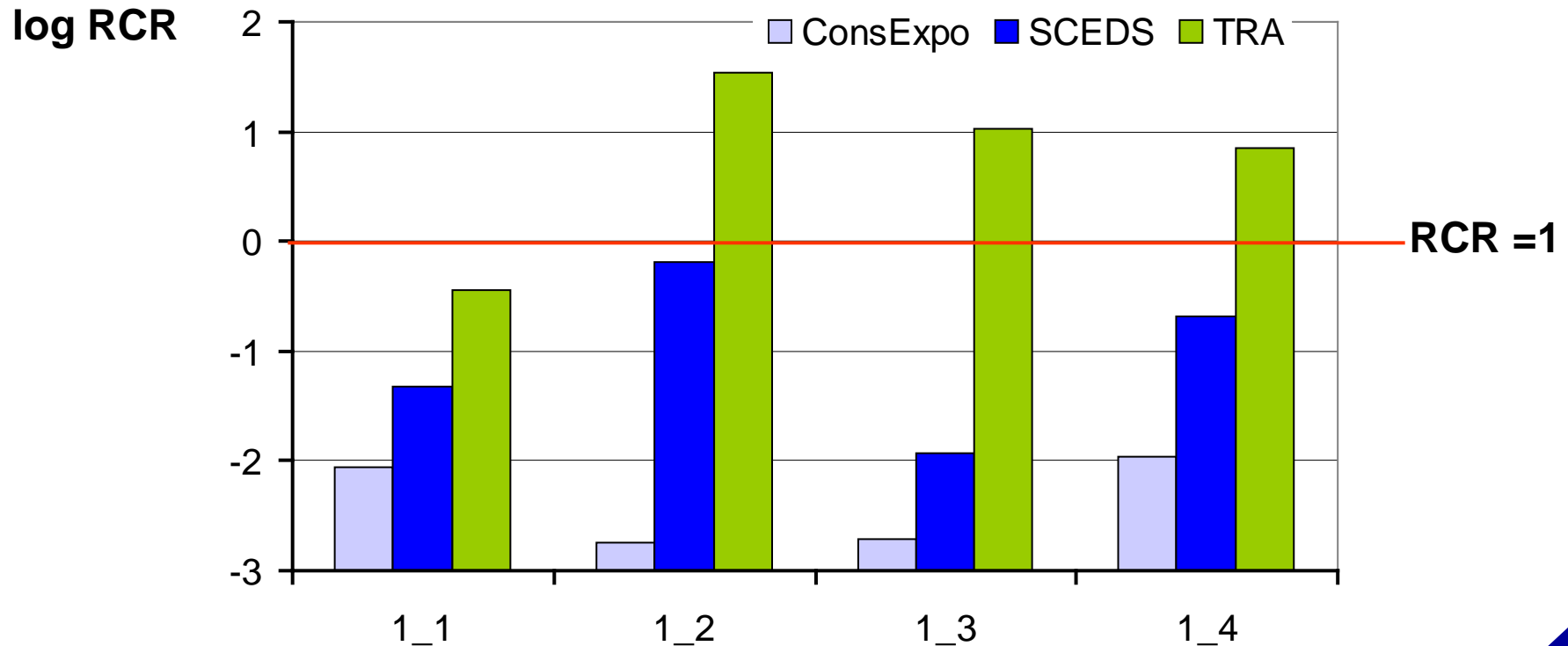
Default for the use of joint sealant.

	Default value	Q	Reference, comments
<i>General</i>			
Frequency	3 year ⁻¹	1	Estimate
Inhalation			
<i>Exposure to vapour: evaporation from increasing area</i>			
Exposure duration	45 min	2	See above
Application duration	30 min	2	See above
Product amount	75 g	2	See above
Room volume	10 m ³	3	Bathroom ^[3]
Ventilation rate	2 h ⁻¹	3	Bathroom ^[3]
Release area	250 cm ²	2	5 m * 5 mm
Temperature	20 °C	4	Room temperature
Mass transfer rate	Langmuir		See section 2.7
Mol. Weight Matrix	3000 g/mol	3	See section 3.1
Dermal			
<i>Constant rate</i>			
Surface area	2 cm ²	3	See above

FEICA uses ConsExpo as reference for justifying SCEDs



Calculation Results of FEICA case studies – Use of SCEDs Combined Risk Characterisation Ratio (RCR – Total)



SCEDs assessments:

$RCR < 1$

CONSEXPO assessments:

$RCR \ll 1$



Boundaries / Learnings Next steps at sector level.

- The four FEICA SCEDs cover the majority of consumer products.
 - **No extension to additional products planned.**
- The margin between TRA- and SCED-based assessment is sufficient.
 - **Further refinement is not considered necessary.**
- The margin between SCED-based and ConsExpo assessment indicates a sufficient level of conservatism.
 - **Additional changes are not considered necessary.**
- Next steps for FEICA:
 - **Finalize documentation and justification of FEICA SCEDs**

Back up

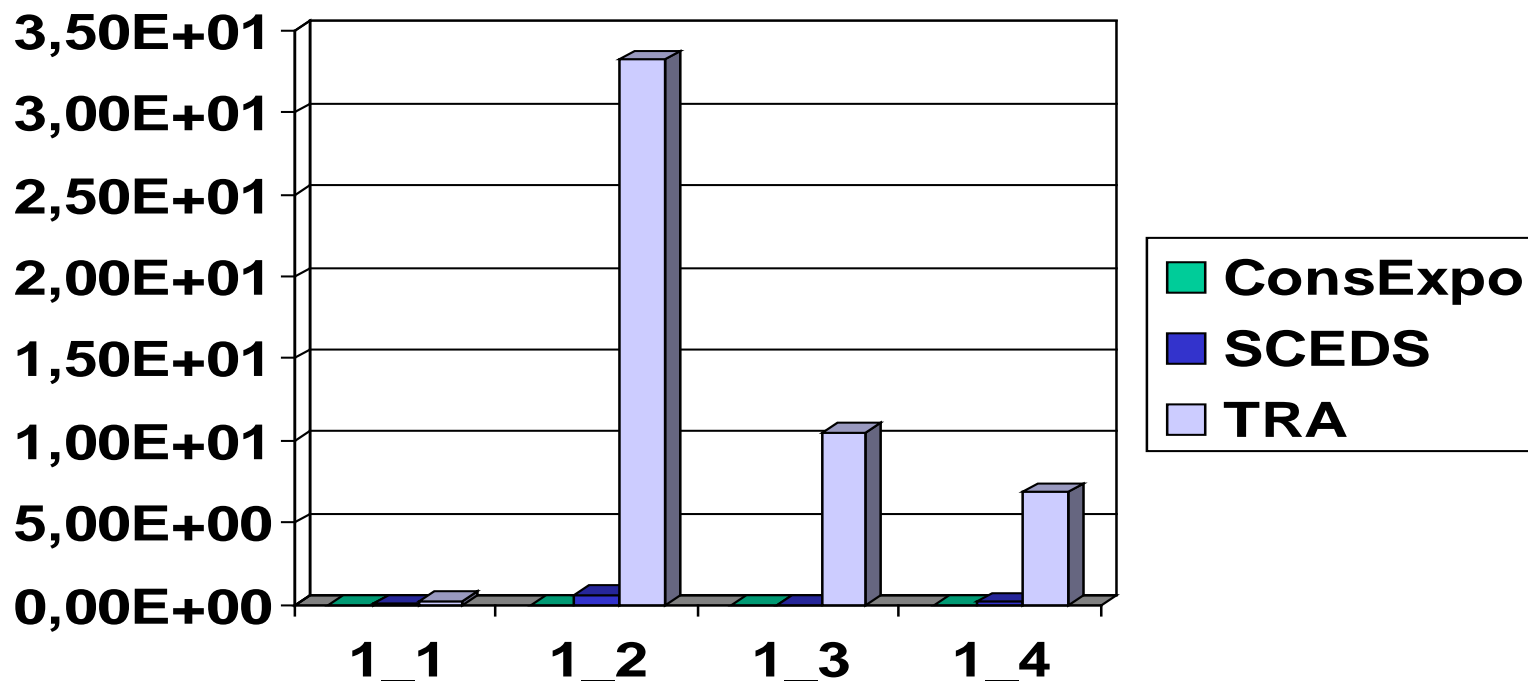


Matching common outline vs Charts

- Sector-specific limitations faced with the ‘standard’ TRA assessments (in slide 3)
- How the SCEDs were developed / how SCED determinants are justified (in slide 4)
- Example of sector-specific determinants that are different from TRA defaults (slide 3)
- Example of RCR calculations (standard TRA run, ‘extended’ TRA run, if possible Tier-2 assessment such as Consexpo: this would reassure authorities that the ‘extended TRA’ values are more conservative than the Consexpo ones) (slide 5)
- Boundaries / Outstanding issues / Learnings (slide 6)
- Next steps at sector level. (slide 6)

Calculation Results of FEICA case studies – Use of SCEDs (2)

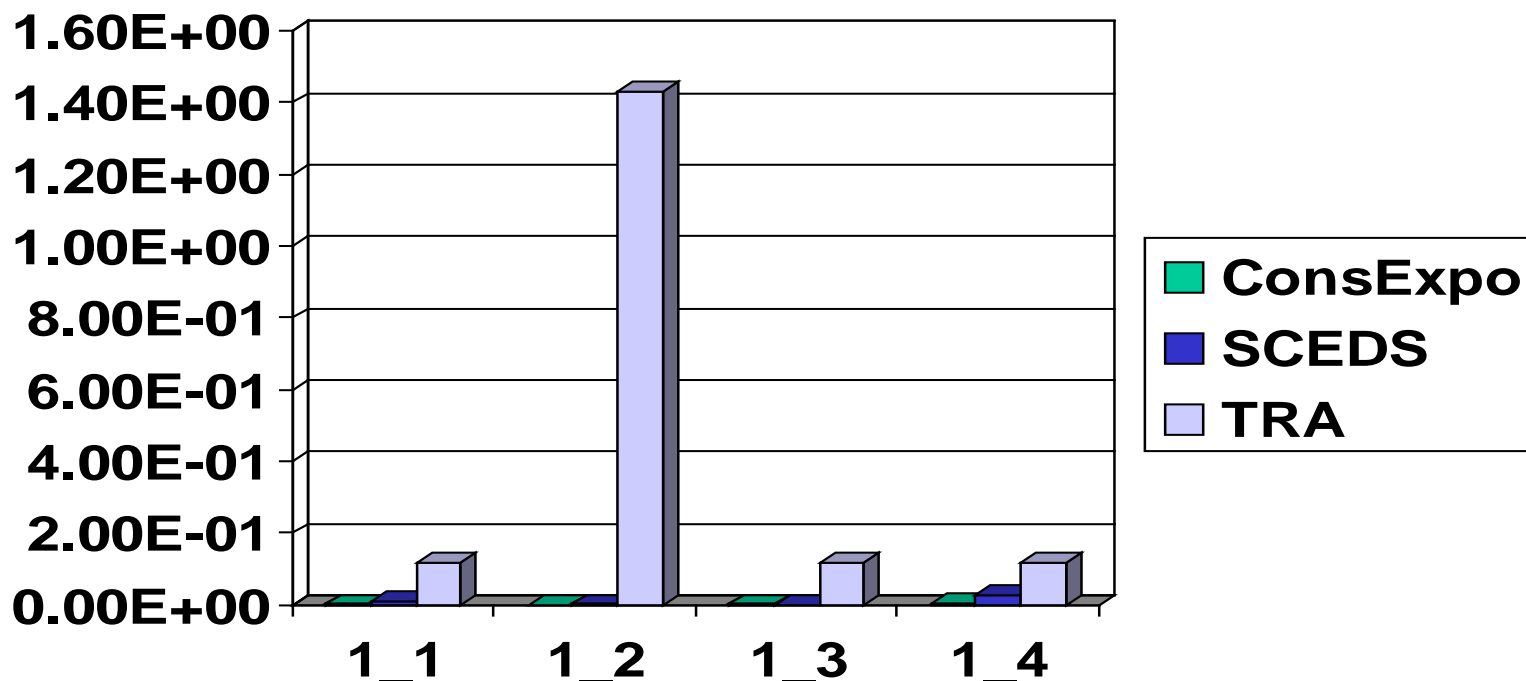
RCR inhalative



Comparison of RCRs for a hypothetical substance (MW: 300 g/mol; VP: 10 Pa; Fraction in Product: 0.1; $DNEL_{Cons}$: 5 mg/kg day)

Calculation Results of FEICA case studies – Use of SCEDs (1)

RCR dermal (Risk Characterization Ratio Values < 1 indicate a low risk)



Comparison of RCRs for a hypothetical substance (MW: 300 g/mol; VP: 10 Pa; Fraction in Product: 0.1; DNEL_{Cons} : 5 mg/kg day)

ECETOC TRA – How to add Subcategories

CLICK TO ADD BLANK ROWS
(Added rows cannot be deleted but)

Select from drop down	Free Text	Only for PC		ROUTES OF EXPOSURE			ALL	DERMAL			
		Default is non-spray	Default is non-solid	c = child, a = adult	Oral	Inh	Enter value <1	ADULT	CHILD		
Descriptor	Product Subcategory	Product is a spray	Product is a solid	Dermal	Oral	Inh	Product Ingredient Fraction by Weight	TF dermal	Select body part exposed	Skin Contact Area (cm ²)	Skin Contact Area (cm ²)
PC35: Washing and cleaning products (including solvent based products)	C7: SURFACE CLEANERS - Liquid cleaning product for manual application	No	No	a		a	0,1		3: hands	857,5	
PC35: Washing and cleaning products (including solvent based products)	C7: SURFACE CLEANERS - Abrasive product for manual surface application	No	Yes	a		a	0,05		3: hands	857,5	
PC35: Washing and cleaning products (including solvent based products)	C7: SURFACE CLEANERS - Abrasive product for manual surface application	No	No	a		a	0,05		3: hands	857,5	
PC35: Washing and cleaning products (including solvent based products)	C7: SURFACE CLEANERS - Carpet cleaners	No	No	a		a	0,3		3: hands	857,5	

