

## **Richtwerte für Glykoether und Glykolester in der Innenraumluf**

Mitteilung der Ad-hoc-Arbeitsgruppe Innenraumrichtwerte der Kommission Innenraumlufthygiene und der Obersten Landesgesundheitsbehörden

Bekanntmachung des Umweltbundesamtes

Bundesgesundheitsbl – Gesundheitsforsch – Gesundheitsschutz 2013: 56 (2): 286-320

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Bekanntmachung des Umweltbundesamtes

## **Richtwerte für Glykoether und Glykolester in der Innenraumluf:** **Datenblätter**

**Mitteilung der Ad-hoc-Arbeitsgruppe Innenraumrichtwerte der Kommission Innenraumlufthygiene und der Obersten Landesgesundheitsbehörden**

Datenblätter zur Ableitung von Richtwerten für die Innenraumluf für die Einzelstoffe\*:

- 1 Ethylenglykolmonomethylether (EGME, CAS-Nr. 109-86-4)
- 2 Diethylenglykolmethylether (DEGME, CAS-Nr. 111-77-3)
- 3 Diethylenglykoldimethylether (DEGDME, CAS-Nr. 111-96-6)
- 4 Ethylenglykolmonoethylether (EGEE, CAS-Nr. 110-80-5)
- 5 Ethylenglykolmonoethyletheracetat (EGEEA, CAS-Nr. 111-15-9)
- 6 Diethylenglykolmonoethylether (DEGEE, CAS-Nr. 111-90-0)
- 7 Ethylenglykolbutylether (EGBE, CAS-Nr. 111-76-2)
- 8 Ethylenglykolbutyletheracetat (EGBEA, CAS-Nr. 112-07-2)
- 9 Diethylenglykolbutylether (DEGBE, CAS-Nr. 112-34-5)
- 10 Ethylenglykolhexylether (EGHE, CAS-Nr. 112-25-4)
- 11 2- Propylenglykol-1-methylether (2PG1ME, CAS-Nr. 107-98-2))
- 12 Dipropylenglykolmethylether (DPGME, CAS-Nr. 34590-94-8)
- 13 2-Propylenglykol-1-ethylether (2PG1EE, CAS-Nr. 1569-02-4)
- 14 2-Propylenglykol-1-tertbutylether (2PG1tBE, CAS- Nr. 57018-52-7)

\*) gemäß: Richtwerte für die Innenraumluf: erste Fortschreibung des Basisschemas. Bundesgesundheitsbl – Gesundheitsforsch – Gesundheitsschutz 2012:55:279-90

GE 1	Derivation of indoor air guide values*: key data		
Substance	Ethylene glycol methyl ether (EGME)		
Parameter	Value / Descriptor	Dimension	Comments
<b>General Information</b>			
CLP INDEX No	603-011-00-4		
EC No	203-713-7		
CAS No	109-86-4		IUPAC name: 2-methoxyethanol
CLP CMR Classification	Repr. Kat 1B; H360FD		
Indoor Air Guide value status	final		
Guide value II (RW II - Health hazard value)	0.2	mg/m <sup>3</sup>	
Guide value I (RW I - Precautionary value)	0.02	mg/m <sup>3</sup>	
Conversion factor: 1 ml/m <sup>3</sup> =	3.2	mg/m <sup>3</sup>	
Year	2012		
<b>Database</b>			
Key study / Author(s) (Year)	Miller ,1984		Miller RR et al.: Environ Health Perspect 1984: 57:233-9
Species	rabbit		
Route/type of study	inhalation		
Study length	90 days		subchronic
Inhalative exposure duration	6 hrs/ 5 days/ week		
Critical endpoint	testes		
POD	LOAEL		30 ppm
POD Value	96	mg/m <sup>3</sup>	
<b>Assessment factors</b>			
Dose-response assessment factor	n. a.		
Adjusted exposure duration factor (time scaling)	5.6		(24/6 x 7/5)
Adjusted study length factor	2		subchronic. → chronic (default)
Route-to-route extrapolation factor		m <sup>3</sup> d <sup>-1</sup> / kg	
Adjusted absorption factor (inhalation/oral)			Availability
Interspecies factor	1		Allometric
	2.5		Dynamic
Intraspecies factor	10		General population, kinetic + dynamic
Sensitive population factor	2		Children
Other adjustment factors Quality of whole database	-		
<b>Result</b>			
Total assessment factor (TAF)	560		
POD/TAF	96/560	mg/m <sup>3</sup>	Calculated value: 0,17 Rounded value: 0.2 (RW II)
LOAEC → NOAEC	10		RW I = 0,02

<b>GE 2</b>	<b>Derivation of indoor air guide values*: key data</b>		
<b>Substance</b>	<b>Diethylene glycol methyl ether (DEGME)</b>		
<b>Parameter</b>	<b>Value / Descriptor</b>	<b>Dimension</b>	<b>Comments</b>
<b>General Information</b>			
CLP INDEX No	603-107-00-6		
EC No	203-906-6		
CAS No	111-77-3		IUPAC name: 2-(2-methoxyethoxy)ethanol
CLP CMR Classification	Repr. Kat 2; H361-d		
Indoor Air Guide value status	provisional		
Guide value II (RW II - Health hazard value)	6	mg/m <sup>3</sup>	
Guide value I (RW I - Precautionary value)	2	mg/m <sup>3</sup>	
Conversion factor: 1 ml/m <sup>3</sup> =	5	mg/m <sup>3</sup>	
Year	2012		
<b>Database</b>			
Key study / Author(s) (Year)	Miller et al., 1985		Miller RR et. al.: Fundam Appl Toxicol. 1985 Dec;5(6 Pt 1):1174-9
Species	Rat (F344)		
Route/type of study	inhalation		
Study length	90 days		subchronic
Inhalative exposure duration	6 hrs/ 5 days/ week		
Critical endpoint	No effect		no indication of a treatment effect
POD	NOAEL		216 ppm
POD Value	1080	mg/m <sup>3</sup>	
<b>Assessment factors</b>			
Dose-response assessment factor	n. a.		
Adjusted exposure duration factor (time scaling)	2		
Adjusted study length factor	5.6		
Route-to-route extrapolation factor		m <sup>3</sup> d <sup>-1</sup> / kg	
Adjusted absorption factor (inhalation/oral)			Availability
Interspecies factor	1		Allometric
	2.5		Dynamic
Intraspecies factor	10		General population, kinetic + dynamic
Sensitive population factor	2		Children
Other adjustment factors	-		
Quality of whole database			
<b>Result</b>			
Total assessment factor (TAF)	560		
POD/TAF	1080/560	mg/m <sup>3</sup>	Calculated value; 1.93 Rounded value: 2 (RW I)
NOAEC → LOAEC	3		RW II = 6 mg/m <sup>3</sup>

<b>GE 3</b>	<b>Derivation of indoor air guide values*: key data</b>		
<b>Substance</b>	<b>Diethylene glycol dimethyl ether (DEGDME)</b>		
<b>Parameter</b>	<b>Value / Descriptor</b>	<b>Dimension</b>	<b>Comments</b>
<b>General Information</b>			
CLP INDEX No	603-139-00-0		
EC No	203-924-4		
CAS No	111-96-6		IUPAC name: 1-methoxy-2-(2-methoxyethoxy)ethane
CLP CMR Classification	Repr. Kat 1B; H360FD		
Indoor Air Guide value status	final		
Guide value II (RW II - Health hazard value)	0.3	mg/m <sup>3</sup>	
Guide value I (RW I - Precautionary value)	0.03	mg/m <sup>3</sup>	
Conversion factor: 1 ml/m <sup>3</sup> =	5.6	mg/m <sup>3</sup>	
Year	2012		
<b>Database</b>			
Key study / Author(s) (Year)	DuPont, 1989		WHO (2002) Concise International Chemical Assessment Document 41. International Program on Chemical Safety, Geneva
Species	Rat (CD)		
Route/type of study	inhalation		
Study length	14	days	subacute
Inhalative exposure duration	6hrs/ 5 days /week		
Critical endpoint	Testes pathology		cellular injury involving the testes, seminal vesicles, epididymides and prostate
POD	LOAEC		98 ppm
POD Value	548	mg/m <sup>3</sup>	
<b>Assessment factors</b>			
Dose-response assessment factor	n. a.		
Adjusted exposure duration factor (time scaling)	5.6		
Adjusted study length factor	6		Subacute → chronic
Route-to-route extrapolation factor	-	m <sup>3</sup> d <sup>-1</sup> / kg	
Adjusted absorption factor (inhalation/oral)	-		Availability
Interspecies factor	1		Allometric
	2.5		Dynamic
Intraspecies factor	10		General population, kinetic + dynamic
Sensitive population factor	2		Children
Other adjustment factors Quality of whole database	-		
<b>Result</b>			
Total assessment factor (TAF)	1680		
POD/TAF	548/1680	mg/m <sup>3</sup>	Calculated value;0.327 Rounded value: 0.3 (RW II)
LOAEC → NOAEC	10		RW I = 0,03

<b>GE 4</b>	<b>Derivation of indoor air guide values*: key data</b>		
<b>Substance</b>	<b>Ethylene glycol ethyl ether (EGEE)</b>		
<b>Parameter</b>	<b>Value / Descriptor</b>	<b>Dimension</b>	<b>Comments</b>
<b>General Information</b>			
CLP INDEX No	603-012-00-X		
EC No	230-804-1		
CAS No	110-80-5		IUPAC name: 2-ethoxyethanol
CLP CMR Classification	Repr. Kat 1B; H360FD		
Indoor Air Guide value status	Final		
Guide value II (RW II - Health hazard value)	1	mg/m <sup>3</sup>	
Guide value I (RW I - Precautionary value)	0.1	mg/m <sup>3</sup>	
Conversion factor: 1 ml/m <sup>3</sup> =	3.7	mg/m <sup>3</sup>	
Year	2012		
<b>Database</b>			
Key study / Author(s) (Year)	Ratcliffe et al., 1989		Ratcliffe JM et al.: Br J Ind Med. 1989 Jun;46(6):399-406
Species	human		occupational
Route/type of study	inhalation		+ not quantified dermal exposure
Study length	chronic		Steady state effect assumed
Inhalative exposure duration	8hrs/5 days/week		
Critical endpoint	Sperm count		
POD	LOAEL		17 ppm
POD Value	63	mg/kg d	
<b>Assessment factors</b>			
Dose-response assessment factor	n. a.		
Adjusted exposure duration factor (time scaling)	1		Steady state effect assumed (~ chronic)
Adjusted study length factor	4.2		
Route-to-route extrapolation factor	-	m <sup>3</sup> d <sup>-1</sup> / kg	
Adjusted absorption factor (inhalation/oral)	-		Availability
Interspecies factor	-		Allometric
			Dynamic
Intraspecies factor	5		General population, kinetic + dynamic
Sensitive population factor	2		Children
Other adjustment factors Quality of whole database			
<b>Result</b>			
Total assessment factor (TAF)	42		
POD/TAF	63/42	mg/m <sup>3</sup>	Calculated value; 1.49 Rounded value: 1 (RW II)
LOAEC → NOAEC	10		RW I = 0.1

<b>GE 5</b>	<b>Derivation of indoor air guide values*: key data</b>		
<b>Substance</b>	<b>Ethylene glycol ethyl ether acetate (EGEEA)</b>		
<b>Parameter</b>	<b>Value / Descriptor</b>	<b>Dimension</b>	<b>Comments</b>
<b>General Information</b>			
CLP INDEX No	607-037-00-7		
EC No	203-839-2		
CAS No	111-15-9		IUPAC name: 2-ethoxyethyl acetate
CLP CMR Classification	Repr. 1B; H360FD		
Indoor Air Guide value status	Provisional		Derived by read across from EGEE
Guide value II (RW II - Health hazard value)	2	mg/m <sup>3</sup>	
Guide value I (RW I - Precautionary value)	0.2	mg/m <sup>3</sup>	
Conversion factor: 1 ml/m <sup>3</sup> =	5.5	mg/m <sup>3</sup>	
Year	2012		
<b>Database</b>			
Key study / Author(s) (Year)	Doe, 1984		Doe JE: Environ Health Perspect 1984:57:33-41
Species	human		
Route/type of study	inhalation		Occupational, dermal exposure not quantified
Study length	12	days	Teratogenicity study
Inhalative exposure duration	6hrs/ 7 days/ week		
Critical endpoint	bone		
POD	LOAEC		100 ppm
POD Value	550	mg/m <sup>3</sup>	
<b>Assessment factors</b>			
Dose-response assessment factor	n. a.		
Adjusted exposure duration factor (time scaling)	4		
Adjusted study length factor	1		
Route-to-route extrapolation factor	-	m <sup>3</sup> d <sup>-1</sup> / kg	
Adjusted absorption factor (inhalation/oral)	-		Availability
Interspecies factor	-		Allometric
	2.5		Dynamic
Intraspecies factor	10		General population, kinetic + dynamic
Sensitive population factor	1		Children are included
Other adjustment factors Quality of whole database	-		
<b>Result</b>			
Total assessment factor (TAF)	100		Calculated value: 5.5 mg/m <sup>3</sup>
POD/TAF	Read across from EGEE ( 0.4 ppm)	mg/m <sup>3</sup>	Read across value: 2.2 Rounded value: 2 (RW II)
LOAEC - NOAEC	10		RW I = 0.2 mg/m <sup>3</sup>

GE 6	Derivation of indoor air guide values*: key data		
Substance	Diethylene glycol ethyl ether (DEGEE)		
Parameter	Value / Descriptor	Dimension	Comments
<b>General Information</b>			
CLP INDEX No			
EC No	203-919-7		
CAS No	111-90-0		IUPAC name: 2-(2-ethoxyethoxy)ethanol
CLP CMR Classification	Not classified		
Indoor Air Guide value status	provisional		
Guide value II (RW II - Health hazard value)	2	mg/m <sup>3</sup>	
Guide value I (RW I - Precautionary value)	0,7	mg/m <sup>3</sup>	
Conversion factor: 1 ml/m <sup>3</sup> =	5.6	mg/m <sup>3</sup>	
Year	2012		
<b>Database</b>			
Key study / Author(s) (Year)	Hardy et al., 1997		Hardy CJ et al.: Fundam Appl Toxicol 1997:38(2):143-7
Species	Rat (Sprague Dawley)		
Route/type of study	inhalation		
Study length	28	days	subacute
Inhalative exposure duration	6 hrs5days / week		
Critical endpoint	Airway irritation		Week effects
POD	NOAEC		197 ppm
POD Value	1103.2	mg/m <sup>3</sup>	
<b>Assessment factors</b>			
Dose-response assessment factor	n. a.		
Adjusted exposure duration factor (time scaling)	5.6		
Adjusted study length factor	6		Subacute → chronic (default)
Route-to-route extrapolation factor	-	m <sup>3</sup> d <sup>-1</sup> / kg	
Adjusted absorption factor (inhalation/oral)	-		Availability
Interspecies factor	1		Allometric
	2.5		Dynamic
Intraspecies factor	10		General population, kinetic + dynamic
Sensitive population factor	2		Children
Other adjustment factors Quality of whole database	-		
<b>Result</b>			
Total assessment factor (TAF)	1680		
POD/TAF	1103/1680	mg/m <sup>3</sup>	Calculated value;0.66 Rounded value: 0,7 (RW I)
NOAEC -> LOAEC	3		RW II = 2

<b>GE 7</b>	<b>Derivation of indoor air guide values*: key data</b>		
<b>Substance</b>	<b>Ethylene glycol butyl ether (EGBE)</b>		
<b>Parameter</b>	<b>Value / Descriptor</b>	<b>Dimension</b>	<b>Comments</b>
<b>General Information</b>			
CLP INDEX No	603-014-00-0		
EC No	203-905-0		
CAS No	111-76-2		IUPAC name: 2-butoxyethanol
CLP CMR Classification	Not classified		
Indoor Air Guide value status	final		
Guide value II (RW II - Health hazard value)	1	mg/m <sup>3</sup>	
Guide value I (RW I - Precautionary value)	0.1	mg/m <sup>3</sup>	
Conversion factor: 1 ml/m <sup>3</sup> =	4.9	mg/m <sup>3</sup>	
Year	2012		
<b>Database</b>			
Key study / Author(s) (Year)	NTP, 2000		NTP: Natl Toxicol Program Tech Rep Ser. 2000:484:1-290
Species	Rat ( F344)		
Route/type of study	inhalation		Chronic carcinogenicity study
Study length	730	days	
Inhalative exposure duration	6 hrs/ 5 days/ week		
Critical endpoint	hematology		Hematology and degeneration of nasal epithelia
POD	LOAEL		31 ppm
POD Value	152	mg/m <sup>3</sup>	
<b>Assessment factors</b>			
Dose-response assessment factor	n. a.		
Adjusted exposure duration factor (time scaling)	5.6		
Adjusted study length factor	1		
Route-to-route extrapolation factor	-	m <sup>3</sup> d <sup>-1</sup> / kg	
Adjusted absorption factor (inhalation/oral)	-		Availability
Interspecies factor	1		Allometric
	1		Dynamic, (rat more sensitive species)
Intraspecies factor	10		General population, kinetic + dynamic
Sensitive population factor	2		Children
Other adjustment factors Quality of whole database			
<b>Result</b>			
Total assessment factor (TAF)	112		
POD/TAF	152/112	mg/m <sup>3</sup>	Calculated value; 1.27 Rounded value: 1 (RW II)
LOAEC → NOAEC	10		RW I = 0.1



<b>GE 8</b>	<b>Derivation of indoor air guide values*: key data</b>		
<b>Substance</b>	<b>Ethylene glycol butyl ether acetate (EGBEA)</b>		
<b>Parameter</b>	<b>Value / Descriptor</b>	<b>Dimension</b>	<b>Comments</b>
<b>General Information</b>			
CLP INDEX No	607-038-00-2		
EC No	203-933-3		
CAS No	112-07-2		IUPAC name: 2-Butoxyethyl-acetate
CLP CMR Classification	Not classified		
Indoor Air Guide value status	provisional		Derived by read across from EGBE
Guide value II (RW II - Health hazard value)	2	mg/m <sup>3</sup>	
Guide value I (RW I - Precautionary value)	0.2	mg/m <sup>3</sup>	
Conversion factor: 1 ml/m <sup>3</sup> =	6.7	mg/m <sup>3</sup>	
Year	2012		
<b>Database</b>			
Key study / Author(s) (Year)	Truhaut et al., 1979		Truhaut R et al.: Toxicol Appl Pharmacol 1979;51(1):117-27
Species	Rat, rabbit		
Route/type of study	inhalation		
Study length	300	days	chronic
Inhalative exposure duration	4hrs/ 5 days/ week		
Critical endpoint			hematology
POD	NOAEC		100 ppm
POD Value	670	mg/m <sup>3</sup>	
<b>Assessment factors</b>			
Dose-response assessment factor	n. a.		
Adjusted exposure duration factor (time scaling)	8.4		
Adjusted study length factor	1		
Route-to-route extrapolation factor	-	m <sup>3</sup> d <sup>-1</sup> / kg	
Adjusted absorption factor (inhalation/oral)	-		Availability
Interspecies factor	1		Allometric
	2.5		Dynamic
Intraspecies factor	10		General population, kinetic + dynamic
Sensitive population factor	2		Children
Other adjustment factors Quality of whole database	0		Study of limited quality
<b>Result</b>			
Total assessment factor (TAF)	420		Calculated RW I value = 1.6 mg/m <sup>3</sup>
POD/TAF	Read across from EGBE (0,28 ppm)	mg/m <sup>3</sup>	Read across value = 1.88 mg/m <sup>3</sup> Rounded value = 2 mg/m <sup>3</sup> (RW II)
LOAEC → NOAEC	10		RW I = 0,2 mg/m <sup>3</sup>

GE 9	Derivation of indoor air guide values*: key data		
Substance	Diethylene glycol butyl ether (DEGBE)		
Parameter	Value / Descriptor	Dimension	Comments
<b>General Information</b>			
CLP INDEX No	603-096-00-8		
EC No	203-961-6		
CAS No	112-34-5		IUPAC name: 2-(2-butoxyethoxy)ethanol
CLP CMR Classification	Not classified		
Indoor Air Guide value status	provisional		
Guide value II (RW II - Health hazard value)	1	mg/m <sup>3</sup>	
Guide value I (RW I - Precautionary value)	0.4	mg/m <sup>3</sup>	
Conversion factor: 1 ml/m <sup>3</sup> =	6.7	mg/m <sup>3</sup>	
Year	2012		
<b>Database</b>			
Key study / Author(s) (Year)	BASF, 1992		BASF Unpublished report. Project 50I0030/87002 Vol I. Klimisch HJ, Kirsch P, Deckardt K, Freisberg KO, Hildebrand B. Department of Toxicology, Ludwigshafen, Germany 1992
Species	Rat (Wistar)		
Route/type of study	inhalation		
Study length	90	days	subchronic
Inhalative exposure duration	6 hrs/ 5 days/ week		
Critical endpoint	Lung irritation		
POD	NOAEC		14 ppm
POD Value	94	mg/m <sup>3</sup>	
<b>Assessment factors</b>			
Dose-response assessment factor	n. a.		
Adjusted exposure duration factor (time scaling)	2		Subchronic → chronic (default)
Adjusted study length factor	5.6		
Route-to-route extrapolation factor	-	m <sup>3</sup> d <sup>-1</sup> / kg	
Adjusted absorption factor (inhalation/oral)	-		Availability
Interspecies factor	1		Allometric
	2.5		Dynamic
Intraspecies factor	5		General population, kinetic + dynamic
Sensitive population factor	2		Children
Other adjustment factors	-		
Quality of whole database	-		
<b>Result</b>			
Total assessment factor (TAF)	280		
POD/TAF	94/280	mg/m <sup>3</sup>	Calculated value: 0,335 Rounded value: 0.4 (RW I)
NOAEC → LOAEC	3		RW II = 1

<b>GE 10</b>	<b>Derivation of indoor air guide values*: key data</b>		
<b>Substance</b>	<b>Ethylene glycol hexyl ether (EGHE)</b>		
<b>Parameter</b>	<b>Value / Descriptor</b>	<b>Dimension</b>	<b>Comments</b>
<b>General Information</b>			
CLP INDEX No	603-178-00-3		
EC No	203-951-1		
CAS No	112-25-4		IUPAC name: 2-(hexyloxy)ethanol
CLP CMR Classification	Not classified		
Indoor Air Guide value status	final		
Guide value II (RW II - Health hazard value)	1	mg/m <sup>3</sup>	
Guide value I (RW I - Precautionary value)	0.1	mg/m <sup>3</sup>	
Conversion factor: 1 ml/m <sup>3</sup> =	6,0	mg/m <sup>3</sup>	
Year	2012		
<b>Database</b>			
Key study / Author(s) (Year)	Klonne et al., 1987		Klonne DR et al.: Fundam Appl Toxicol 1987;8(2):198-206
Species	Rat (F344)		
Route/type of study	inhalation		
Study length	90	days	subchronic
Inhalative exposure duration	6 hrs/ 5 days / week		
Critical endpoint	Liver, kidney		increase organ weights and hepatic enzymes
POD	LOAEC		71 ppm
POD Value	426	mg/m <sup>3</sup>	
<b>Assessment factors</b>			
Dose-response assessment factor	n. a.		
Adjusted exposure duration factor (time scaling)	5.6		
Adjusted study length factor	2		Subchronic → chronic (default)
Route-to-route extrapolation factor	-	m <sup>3</sup> d <sup>-1</sup> / kg	
Adjusted absorption factor (inhalation/oral)	-		Availability
Interspecies factor	1		Allometric
	2.5		Dynamic
Intraspecies factor	10		General population, kinetic + dynamic
Sensitive population factor	2		Children
Other adjustment factors Quality of whole database	-		
<b>Result</b>			
Total assessment factor (TAF)	560		
POD/TAF	426/560	mg/m <sup>3</sup>	Calculated value;0,76 Rounded value: 1 (RW II)
LOAEC → NOAEC	10		RW I = 0.1

GE 11	Derivation of indoor air guide values*: key data		
Substance	2-Propylene glycol 1-methyl ether (2PG1ME)		
Parameter	Value / Descriptor	Dimension	Comments
<b>General Information</b>			
CLP INDEX No	603-064-00-3		
EC No	203-539-1		
CAS No	107-98-2		IUPAC name:1-methoxypropan-2-ol
CLP CMR Classification	Not classified		
Indoor Air Guide value status	final		
Guide value II (RW II - Health hazard value)	10	mg/m <sup>3</sup>	
Guide value I (RW I - Precautionary value)	1	mg/m <sup>3</sup>	
Conversion factor: 1 ml/m <sup>3</sup> =	3.7	mg/m <sup>3</sup>	
Year	2012		
<b>Database</b>			
Key study / Author(s) (Year)	Cieszlak et al., 1998		Cieszlak FS et al.: 1998 Unpublished report. The Dow Chemical Company. Arlington, VA 1998
Species	rat		
Route/type of study	inhalation		
Study length	730	days	chronic
Inhalative exposure duration	6 hrs/ 5 days/ week		
Critical endpoint	Liver pathology		eosinophilic foci of altered hepatocytes in male rats
POD	LOAEC		1000 ppm
POD Value	3600	mg/m <sup>3</sup>	
<b>Assessment factors</b>			
Dose-response assessment factor	n. a.		
Adjusted exposure duration factor (time scaling)	5.6		
Adjusted study length factor	1		
Route-to-route extrapolation factor	-	m <sup>3</sup> d <sup>-1</sup> / kg	
Adjusted absorption factor (inhalation/oral)	-		Availability
Interspecies factor	1		Allometric
	2.5		Dynamic
Intraspecies factor	10		General population, kinetic + dynamic
Sensitive population factor	2		Children
Other adjustment factors Quality of whole database	-		
<b>Result</b>			
Total assessment factor (TAF)	280		
POD/TAF	3600/280	mg/m <sup>3</sup>	Calculated value 12.8 Rounded value: 10 (RW II)
LOAEC → NOAEC	10		RW I = 1

<b>GE 12</b>	<b>Derivation of indoor air guide values*: key data</b>		
<b>Substance</b>	<b>Dipropylene glycol methyl ether (DPGME)</b>		
<b>Parameter</b>	<b>Value / Descriptor</b>	<b>Dimension</b>	<b>Comments</b>
<b>General Information</b>			
CLP INDEX No			
EC No	252-104-2		
CAS No	34590-94-8		IUPAC name: Methoxymethoxypropanol (Isomer mixture)
CLP CMR Classification	Not classified		
Indoor Air Guide value status	provisional		
Guide value II (RW II - Health hazard value)	7	mg/m <sup>3</sup>	
Guide value I (RW I - Precautionary value)	2	mg/m <sup>3</sup>	
Conversion factor: 1 ml/m <sup>3</sup> =	6.2	mg/m <sup>3</sup>	
Year	2012		
<b>Database</b>			
Key study / Author(s) (Year)	Landry and Yano, 1984		Landry TD, Yano BL: Fundam Appl Toxicol 1984;4(4):612-7
Species	Rat (F344),, rabbit		
Route/type of study	inhalation		
Study length	90		
Inhalative exposure duration	6 hrs/ 5 days / week		
Critical endpoint			No effects observed
POD	NOAEC		200 ppm
POD Value	1240	mg/m <sup>3</sup>	
<b>Assessment factors</b>			
Dose-response assessment factor	n. a.		
Adjusted exposure duration factor (time scaling)	5.6		
Adjusted study length factor	2		
Route-to-route extrapolation factor	-	m <sup>3</sup> d <sup>-1</sup> / kg	
Adjusted absorption factor (inhalation/oral)	-		Availability
Interspecies factor	1		Allometric
	2.5		Dynamic
Intraspecies factor	10		General population, kinetic + dynamic
Sensitive population factor	2		Children
Other adjustment factors Quality of whole database	-		
<b>Result</b>			
Total assessment factor (TAF)	560		
POD/TAF	1240/560	mg/m <sup>3</sup>	Calculated value: 2.2 Rounded value: 2 (RW I)
NOAEC → LOAEC	3		RW II= 7

<b>GE 13</b>	<b>Derivation of indoor air guide values*: key data</b>		
<b>Substance</b>	<b>2-Propylene glycol 1-ethyl ether (2PG1EE)</b>		
<b>Parameter</b>	<b>Value / Descriptor</b>	<b>Dimension</b>	<b>Comments</b>
<b>General Information</b>			
CLP INDEX No	603-177-00-8		
EC No	216-374-5		
CAS No	1569-02-4		IUPAC name: 1-ethoxy-2-propanol
CLP CMR Classification	Not classified		
Indoor Air Guide value status	final		
Guide value II (RW II - Health hazard value)	3	mg/m <sup>3</sup>	
Guide value I (RW I - Precautionary value)	0.3	mg/m <sup>3</sup>	
Conversion factor: 1 ml/m <sup>3</sup> =	4,9	mg/m <sup>3</sup>	
Year	2012		
<b>Database</b>			
Key study / Author(s) (Year)	BP, 1984 a		See: ECHA: REACH dossier
Species	Rat (Sprague Dawley)		
Route/type of study	inhalation		
Study length	90 days		subchronic
Inhalative exposure duration	6 hrs/ 5 days 7 week		
Critical endpoint	Lung, liver histology, kidney function		
POD	LOAEC		300 ppm
POD Value	1470	mg/m <sup>3</sup>	
<b>Assessment factors</b>			
Dose-response assessment factor	n. a.		
Adjusted exposure duration factor (time scaling)	5,6		
Adjusted study length factor	2		Subchronic → chronic (default)
Route-to-route extrapolation factor	-	m <sup>3</sup> d <sup>-1</sup> / kg	
Adjusted absorption factor (inhalation/oral)	-		Availability
Interspecies factor	1		Allometric
	2.5		Dynamic
Intraspecies factor	10		General population, kinetic + dynamic
Sensitive population factor	2		Children
Other adjustment factors Quality of whole database			
<b>Result</b>			
Total assessment factor (TAF)	560		
POD/TAF	1470/560	mg/m <sup>3</sup>	Calculated value: 2.625 Rounded value: 3 (RW II)
LOAEC → NOAEC	10		RW I = 0,3

<b>GE 14</b>	<b>Derivation of indoor air guide values*: key data</b>		
<b>Substance</b>	<b>Propylene glycol 1-tert-butyl ether (2PG1tBE)</b>		
<b>Parameter</b>	<b>Value / Descriptor</b>	<b>Dimension</b>	<b>Comments</b>
<b>General Information</b>			
CLP INDEX No	603-129-00-6		
EC No	406-180-0		
CAS No	57018-52-7		IUPAC name: 1-tert-butoxy-2-prpropanol
CLP CMR Classification	Not classified		
Indoor Air Guide value status	final		
Guide value II (RW II - Health hazard value)	3	mg/m <sup>3</sup>	
Guide value I (RW I - Precautionary value)	0.3	mg/m <sup>3</sup>	
Conversion factor: 1 ml/m <sup>3</sup> =	5.5	mg/m <sup>3</sup>	
Year	2012		
<b>Database</b>			
Key study / Author(s) (Year)	Doi et al., 2004		Doi AM et al.: Toxicology 2004:199:1-22
Species	Rat (F344)		
Route/type of study	inhalation		chronic carcinogenicity study
Study length	730	days	
Inhalative exposure duration	6 hrs/ 5 days/ week		
Critical endpoint	Liver pathology		basophilic liver foci, nasal epithelia
POD	LOAEC		75 ppm
POD Value	413	mg/m <sup>3</sup>	
<b>Assessment factors</b>			
Dose-response assessment factor	n. a.		
Adjusted exposure duration factor (time scaling)	5.6		
Adjusted study length factor	1		
Route-to-route extrapolation factor	-	m <sup>3</sup> d <sup>-1</sup> / kg	
Adjusted absorption factor (inhalation/oral)	-		Availability
Interspecies factor	1		Allometric
	2.5		Dynamic
Intraspecies factor	5		General population, kinetic + dynamic Rat more susceptible species
Sensitive population factor	2		Children
Other adjustment factors Quality of whole database	-		
<b>Result</b>			
Total assessment factor (TAF)	140		
POD/TAF	413/140	mg/m <sup>3</sup>	Calculated value 2.95 Rounded value: 3 (RW II)
LOAEC → NOAEC	10		RW I = 0.3

\*) referring to the German basic scheme for the derivation of indoor air guide values. Bundesgesundheitsbl 2012:55:279-90;  
n. a. = not applied