

Stofdocument deel A

CAS-nr: 542-88-1

Dichloordimethylether (CH₂Cl)₂O

VN-nr: 2249

GEVI: geen

Synoniemen: BCME, bis(chloormethyl)ether, sym-dichloordimethylether
(Eng.: bis chloromethyl ether)

Interventiewaarden		10 min.	30 min.	1 uur	2 uur	4 uur	8 uur
Voorlichtingsrichtwaarden	VRW (mg/m³)	NA	NA	NA	NA	NA	NA
Alarmeringsgrenswaarden	AGW (mg/m³)	0,38	0,27	0,21	0,17	0,13	0,096
Levensbedreigende waarden	LBW (mg/m³)	1,6	1,1	0,87	0,69	0,55	0,36
Datum vaststelling: November 2015		1 mg/m ³ = 0,21 ppm; 1 ppm = 4,78 mg/m ³					
Explosiegrens: LEL = 6,5 Vol% ≈ 311.000 mg/m ³ (geschat)		Geur: stekende, "verstikkende" geur LOA: niet afgeleid					
Fysisch-chemische eigenschappen				Overige informatie			
Uiterlijk: kleurloze vloeistof Brand: zeer brandgevaarlijk		Molecuulmassa: 115 g/mol		Publieke grenswaarde: niet afgeleid MAK: niet afgeleid TLV-TWA: 0,0048 mg/m ³			
Relatieve dichtheid van verzadigd damp-lucht mengsel: 1,0		Zuurgraad: Geen data					
		LogKow: Geen data Wateroplosbaarheid: Reactie Verzadigde dampdruk: 0,14 mbar					
Toxicologische eigenschappen							
Effecten bij inhalatoire blootstelling				Toxiciteit bij eenmalige, inhalatoire blootstelling			
<u>Onder AGW:</u> irritatie van ogen, huid, luchtwegen				<ul style="list-style-type: none"> Dichloordimethylether werkt zeer irriterend tot bijtend op de ogen, huid en de luchtwegen. Blootstelling aan dichloordimethylether kan longoedeem veroorzaken. De verschijnselen hiervan kunnen vertraagd optreden en versterkt worden door lichamelijke inspanning. Dichloordimethylether is mutageen en carcinogeen. 			
<u>AGW → LBW:</u> ernstige irritatie van ogen, huid, luchtwegen, benauwdheid							
<u>Boven LBW:</u> longoedeem, sterfte							
<i>LET OP: De afwezigheid van een VRW betekent niet dat blootstelling onder AGW zonder effecten is</i>							
Klachten bij blootstelling aan vloeistof				Carcinogeniteit			
Huidcontact: roodheid, pijn				IARC classificatie: 1			
Oogcontact: roodheid, pijn, slecht zien				CRP: 0,35 mg/m ³ (blootstelling 1 uur)			
Beknopte medische informatie							
Ontsmetting damp							
<i>algemeen:</i> frisse lucht, rust, halfzittende houding en direct spoedeisende medische hulp inzetten.							
<i>ogen:</i> minimaal 15 min. spoelen met water (evt. contactlenzen verwijderen).							
Ontsmetting vloeistof							
<i>huid:</i> verontreinigde kleding uittrekken, minimaal 20 min. spoelen met veel water of douchen en arts raadplegen.							
<i>ogen:</i> minimaal 15 min. spoelen met water (evt. contactlenzen verwijderen), dan naar oogarts brengen, blijven spoelen tijdens vervoer.							
<i>inslikken:</i> mond laten spoelen (uitspugen!), GEEN braken opwekken en direct spoedeisende medische hulp inzetten.							
Specifieke behandeling en materialen: geen.							
Neem contact op met het NVIC (Tel: 030 - 274 8888) voor informatie met betrekking tot medisch handelen							

Stofdocument deel B

CAS-nr: 542-88-1

Bis-chloromethyl ether (CH₂Cl)₂O

UN-nr: 2249

Basis for the Dutch Intervention Values

VRW: Not recommended, in accordance with AEGL

AGW: AEGL value adopted (except 10 min value for which time scaling was applied), 2hr value added.

LBW: AEGL value adopted (except 10 min value for which time scaling was applied), 2hr value added.

Date: November 2015

AEGL document, final, 2012.

Dutch Intervention Values (mg/m³)

	10 min	30 min	1 h	2 h	4 h	8 h	End point
VRW	NR	NR	NR	NR	NR	NR	Not recommended
AGW	0.38	0.27	0.21	0.17	0.13	0.096	Irreversible respiratory lesions in animals
LBW	1.6	1.1	0.87	0.69	0.55	0.36	Threshold of animal lethality

Derivation of the Dutch Intervention Values

VRW: Not recommended, because effects exceeding the severity of the VRW occurred at concentrations that did not produce sensory irritation in humans or animals.

AGW: The AGW was based on the lowest LOAEL for irreversible respiratory lesions, i.e., 0.7 ppm (3.3 mg/m³) for rats and hamsters at 7 hr exposure followed by a lifetime observation. This LOAEL was divided by 3 to estimate a NAEL of 0.23 ppm (1.1 mg/m³). The default total uncertainty factor of 10 (3x3) was considered sufficient to account for inter- and intraspecies differences. Time scaling was performed using $C^n \cdot t = k$, with the default values of n=1 and n=3 for extrapolation to longer and shorter exposure durations, respectively. In contrast to the AEGL, time scaling was also applied to derive the 10-minute AGW.

LBW: LBWs were derived from the single-exposure scenario of the repeated dose study in which rats and hamsters were subjected to 1, 3, 10, or 30 times six-hour exposures of 1 ppm (4.8 mg/m³) BCME followed by lifetime observation. This study was chosen because it tested the highest BCME concentration that was shown to not cause lethality after lifetime observation. Another study by the same authors found a lethality NOEL of 0.7 ppm (7 h) for rats and hamster after lifetime observation. A 7-h LC₅₀ study using rats and hamsters (Drew et al. 1975) was not used because it yielded a BMCL₀₁ of 2.3 ppm for rats, which exceeds 2.1 ppm (10 mg/m³), the concentration that caused mortality in rats and hamsters after single 7-h exposure to BCME in a life time study (also by Drew et al. 1975). The default total uncertainty factor of 10 (3x3) was considered sufficient to account for inter- and intraspecies differences. Time scaling was performed using $C^n \cdot t = k$, with n=3 and n=1 to for durations shorter and longer, respectively, than 6 hours. In contrast to the AEGL, time scaling was also applied to derive a 10-minute LBW.

Additional toxicological information (including relevant results of a general literature search, if any)

BCME is analogous to chloromethyl methylether (CMME), but considered more toxic. Both compounds are known irritants to the eyes and lungs. Their mechanism of action is not completely understood. No studies were located assessing developmental or reproductive effects of BCME exposure on animals.

H302: Harmful if swallowed; H311: Toxic in contact with skin; H330: Fatal if inhaled; H350: May cause cancer.

Carcinogenicity and derivation of the CRP value

IARC classification: 1

Derivation of the carcinogenic risk potency (CRP):

10⁻⁴ risk level after inhalation: 1.6 * 10⁻⁶ mg/m³ [AEGL]

CRP = (10⁻⁴ risk level * average life span in hours)/DRCF

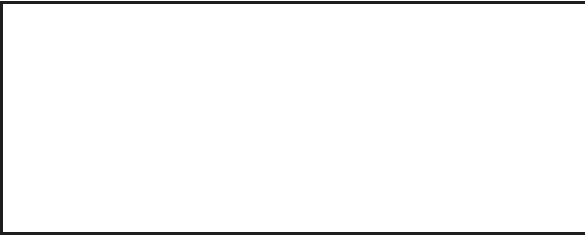
= (1.6 * 10⁻⁶ * 613.200) / 2.8 = 0.35 mg/m³

Odour and derivation of the LOA value

Odour: "Suffocating" odour.

No LOA was derived due to lack of reliable data.

The CRP was based on a lifetime inhalation study in male Sprague-Dawley rats that were exposed to 0.48 mg/m³ (0.1 ppm) BCME 6 hours/day, 5 days/week. Animals given 10-100 exposures had 40 nasal and/or lung cancers. The shortest number of exposures that resulted in cancer was 10 times.



Other standards and guidelines (1h values in mg/m³, unless otherwise indicated)

VRW level NR	AEGL-1 NA	ERPG-1 NA	IDLH: not established.
AGW level 0.21	AEGL-2 0.21	ERPG-2 0.48	
LBW level 0.87	AEGL-3 0.86	ERPG-3 2.4	