

Stofdocument deel A

CAS-nr: 79-36-7

Dichlooracetylchloride

CHCl₂COCl

VN-nr: 1765

GEVI: X80

Synoniemen: dichloroethanoylchloride, dichloorazijnzuurchloride (Engels: dichloroacetyl chloride)

Interventiewaarden		10 min.	30 min.	1 uur	2 uur	4 uur	8 uur
Voorlichtingsrichtwaarden	VRW (mg/m³)	0,26	0,26	0,26	0,26	0,26	0,26
Alarmeringsgrenswaarden	AGW (mg/m³)	18	12	9,8	4,9	2,5	1,2
Levensbedreigende waarden	LBW (mg/m³)	580	400	320	160	80	40
Datum vaststelling: 13-05-2009		1 mg/m ³ = 0,163 ppm; 1 ppm = 6,13 mg/m ³					

Explosiegrens: LEL=11,9 vol% ≈ 730.000 mg/m³

Geur: stekende geur

LOA: niet afgeleid

Fysisch-chemische eigenschappen

Uiterlijk: kleurloze rokende vloeistof

Brand: brandbaar

Relatieve dichtheid van verzadigd damp-lucht mengsel: 1,1

Molecuulmassa: 147,4 g/mol

Zuurgraad: Geen data

LogKow: Geen data

Wateroplosbaarheid: reactie

Verzadigde dampdruk: 30,6 mbar

Overige informatie

Publiek grenswaarde:
niet afgeleid

MAK: niet afgeleid

TLV-TWA: 0,31

Toxicologische eigenschappen

Effecten bij inhalatoire blootstelling

Onder VRW: geen informatie

VRW → AGW: oogirritatie, tranenvloed

AGW → LBW: sterke oogirritatie, slecht zien, hoesten, benauwdheid, longoedeem

Boven LBW: ademnood, sterfte

Toxiciteit bij eenmalige, inhalatoire blootstelling

- Dichlooracetylchloride is sterk irriterend voor ogen en luchtwegen.
- Dichlooracetylchloride kan longoedeem veroorzaken. De verschijnselen hiervan kunnen vertraagd optreden.

Effecten bij blootstelling aan vloeistof

Huidcontact: bijtend, roodheid en pijn, ernstige brandwonden

Oogcontact: bijtend, roodheid en pijn, ernstige brandwonden.

Carcinogeniteit

IARC classificatie: niet geclassificeerd

CRP: niet afgeleid

Beknopte medische informatie

Ontsmetting damp

algemeen: frisse lucht, rust, halfzittende houding en direct spoedeisende medische hulp inzetten.

ogen: desgewenst spoelen met water (evt. contactlenzen verwijderen)

Ontsmetting vloeistof

huid: eerst spoelen met veel water, dan pas kleding uittrekken, daarna weer spoelen en arts raadplegen.

ogen: minimaal 15 min. spoelen met water (evt. contactlenzen verwijderen), dan naar oogarts brengen, blijven spoelen tijdens vervoer.

inslikken: mond laten spoelen (uitspugen!), rust, GEEN braken opwekken en direct spoedeisende medische hulp inzetten.

Ontsmetting bij inademen/inslikken

Inademing/inslikken van sterke zuren kan tevens leiden tot larynx- en glottisoedeem, met risico op verstikking (asfyxie) door zwellingen in de keel. Intubatie (borgen van vrije luchtwegen), eventueel gevolgd door beademing moeten in ernstige gevallen z.s.m. worden uitgevoerd (door specialisten). Zet derhalve direct spoedeisende medische hulp in.

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: 79-36-7

Dichloroacetyl chloride

CHCl₂COCl

UN-nr: 1765

Basis for the Dutch Intervention Values

VRW: Based on analogy with chloroacetyl chloride, in accordance with AEGL, 2h value added

AGW: Based on analogy with chloroacetyl chloride, in accordance with AEGL, 2h value added

LBW: Based on analogy with chloroacetyl chloride, in accordance with AEGL, 2h value added

Date: 13-05-2009

AEGL document: Interim, 2007

Dutch Intervention Values (mg/m³)

	10 min	30 min	1 h	2 h	4 h	8 h	End point
VRW	0.26	0.26	0.26	0.26	0.26	0.26	Based on analogy with chloroacetyl chloride
AGW	18	12	9.8	4.9	2.5	1.2	Based on analogy with chloroacetyl chloride
LBW	580	400	320	160	80	40	Based on analogy with chloroacetyl chloride

Derivation of the Dutch Intervention Values

VRW: Analogy with chloroacetyl chloride. VRW values of chloroacetyl chloride (on a ppm-basis) were adopted. Below the VRW derivation of chloroacetylchloride is given.

The VRW values were derived from a multiple-exposure study in which conjunctival redness was reported in rats after the initial 6-hour exposure to approximately 0.5 ppm (2.35 mg/m³) chloroacetyl chloride. VRW values were derived using a single 6-hour exposure to 0.84 ppm (3.9 mg/m³) chloroacetyl chloride because this is the highest concentration that caused conjunctival redness but no other more serious effects after one exposure. A modifying factor of 2 was applied to estimate a no-effect level concentration for conjunctivitis. The same VRW value is adopted for 10 minutes to 8 hours because mild irritant effects do not vary greatly over time. A total uncertainty factor of 10 was applied: 3 for interspecies variability and 3 for intraspecies variability. The resulting VRW of 0.04 ppm (0.20 mg/m³) chloroacetyl chloride is consistent with the limited human data in which exposure to 0.023 ppm (0.11 mg/m³) chloroacetyl chloride for an undefined period was barely detectable but 0.140 ppm (0.66 mg/m³) chloroacetyl chloride was strong, and exposure to 0.05 ppm (0.23 mg/m³) chloroacetyl chloride was associated with odor that was objectionable but no adverse health effects were reported.

AGW: Analogy with chloroacetyl chloride. AGW values of chloroacetyl chloride (on a ppm-basis) were adopted. Below the AGW derivation of chloroacetylchloride is given.

A 1- hour inhalation rat study (32, 208, 522, or 747 ppm; 150, 976, 2,448 or 3,503 mg/m³) chloroacetyl chloride was chosen for AGW derivation because it was the only well-conducted study in which effects within the scope of AGW occurred from a single exposure. All test groups squinted, lacrimated, had urine stains, and initially lost weight. At 208 ppm (976 mg/m³) chloroacetyl chloride, rats had shallow breathing, lethargy, and reddish stains near the eyes, at 522 ppm (2,448 mg/m³), rats also had labored breathing, gasping, and salivation, and at 747 ppm (3,503 mg/m³), 5/6 males and 1/6 females died and necropsy revealed lung pathology, nasal congestion, and enlarged adrenals. The AGW endpoint was the NOEL for impaired ability to escape due to lacrimation and eye squinting, which was estimated by applying a modifying factor of 2 to the lowest concentration tested of 32 ppm (150 mg/m³). A total uncertainty factor of 10 was applied, consisting of 3 for interspecies variability and 3 for intraspecies variability. Scaling across time was performed using $C^n \cdot t = k$, with the defaults $n=3$ and $n=1$ for extrapolation to shorter and longer exposure durations, respectively.

LBW: Analogy with chloroacetyl chloride. LBW values of chloroacetyl chloride (on a ppm-basis) were adopted. Below the LBW derivation of chloroacetylchloride is given.

A 1-hour inhalation rat study (32, 208, 522, or 747 ppm; 150, 976, 2,448 or 3,503 mg/m³) chloroacetyl chloride) was chosen for LBW derivation. The LBW toxic endpoint was the lethality threshold, which was taken as the highest concentration tested that caused no deaths (522 ppm = 2,448 mg/m³). A total uncertainty factor of 10 was applied. An interspecies uncertainty factor of 3 was used because lethality resulting from respiratory lesions and having a steep dose-response was seen in several studies with rats and mice, at chloroacetyl chloride concentrations within a factor of 2-3. An intraspecies uncertainty factor of 3 was applied because the threshold for lethality from direct destruction of respiratory tissue is not expected to vary greatly among humans, based on the steep dose-response seen in the animal studies. To obtain protective LBW values, scaling across time was performed using $C^n * t = k$, with the defaults n=3 and n=1 for extrapolation to shorter and longer exposure durations, respectively.

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

The AEGL values derived for chloroacetyl chloride were adopted for dichloroacetyl chloride due to limited data for the latter substance and lower toxicity of dichloroacetyl chloride. A comparison of rat 4-hour LC₅₀ values indicated that chloroacetyl chloride is more toxic than dichloroacetyl chloride (LC₅₀-values of 660 ppm and >2000 ppm for chloroacetyl chloride and dichloroacetyl chloride respectively).

The substance is a contact irritant and may induce strong eye, skin and respiratory tract irritations. May cause lung edema.

H314: Causes severe skin burns and eye damage.

Carcinogenicity and derivation of the CRP value

IARC classification: not classified
No carcinogenic risk potency (CRP) was derived.

Odour and derivation of the LOA value

Odour: Pungent odour.
No LOA was derived due to lack of data.

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

VRW level 0.26	AEGL-1 0.24	ERPG-1 Not derived	IDLH: not established
AGW level 9.8	AEGL-2 9.8	ERPG-2 Not derived	
LBW level 320	AEGL-3 320	ERPG-3 Not derived	