

Stofdocument deel A

CAS-nr: 75-18-3

Dimethylsulfide

$\text{CH}_3 - \text{S} - \text{CH}_3$

VN-nr: 1164

GEVI: 33

Synoniemen: 2-thiopropan, methylthiomethaan, thiobismethaan (Engels: dimethyl sulfide)

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)	6800	4700	2400	1200	590	290
Levensbedreigende waarden	LBW (mg/m³)	21.000*	15.000*	12.000*	9400*	7400*	3700
Datum vaststelling: 31-10-2017		1 mg/m ³ = 0,387 ppm; 1 ppm = 2,58 mg/m ³					
Explosiegrens: 2,2 vol% ≈ 57.000 mg/m ³			Geur: Onaangenaam, koolachtig				
* berekende interventiewaarde hoger dan 10% LEL			LOA: 0,039 mg/m ³				
Fysisch-chemische eigenschappen						Overige informatie	
Uiterlijk: Kleurloze tot lichtgele zeer vluchtige vloeistof		Molecuulmassa: 62,1 g/mol				Publieke grenswaarde:	
Brand: Zeer brandgevaarlijk		Zuurgraad: Niet bekend				Niet afgeleid.	
		LogKow: 1,1				MAK: niet afgeleid.	
Relatieve dichtheid van verzadigd damp-lucht mengsel: 1,6		Wateroplosbaarheid: 0,2 g/100 ml (slecht)				TLV-TWA: 26 mg/m ³ .	
		Verzadigde dampdruk: 527 mbar					
Toxicologische eigenschappen							
Effecten bij inhalatoire blootstelling				Toxiciteit bij eenmalige, inhalatoire blootstelling			
<u>Onder AGW:</u> prikkeling van de ogen, hoofdpijn, duizeligheid, slaperigheid				<ul style="list-style-type: none"> Dimethylsulfide kan inwerken op het centraal zenuwstelsel, met als gevolg bewustzijnsverlaging Lokaal contact kan irritatie geven 			
<u>AGW → LBW:</u> onregelmatige ademhaling, sufheid, zwaktegevoel, spierverlamming, bewustzijnsdaling							
<u>Boven LBW:</u> sterfte							
LET OP: De afwezigheid van een VRW betekent niet dat blootstelling onder de AGW zonder effecten is							
Effecten bij blootstelling aan vloeistof				Carcinogeniteit			
<u>Huidcontact:</u> roodheid				IARC classificatie: niet geclassificeerd			
<u>Oogcontact:</u> prikkeling, roodheid				CRP: niet afgeleid			
Beknopte medische informatie							
Ontsmetting damp							
<i>algemeen:</i> frisse lucht, rust en direct spoedeisende medische hulp inzetten.							
Ontsmetting vloeistof							
<i>huid:</i> spoelen met veel water / kleding verwijderen, spoelen en wassen met water en zeep en arts raadplegen.							
<i>ogen:</i> minimaal 15 min. spoelen met water (evt. contactlenzen verwijderen), dan naar oogarts brengen.							
<i>inslikken:</i> mond laten spoelen (uitspugen!), rust, GEEN braken opwekken en direct spoedeisende medische hulp inzetten.							
Specifieke behandeling en materialen: geen.							
Neem contact op met het NVIC (Tel:+31 (0)30 274 8888) voor informatie met betrekking tot medisch handelen							

Stofdocument deel B

CAS-nr: 75-18-3

Dimethyl Sulfide

CH₃ – S – CH₃

UN-nr: 1164

Basis for the Dutch Intervention Values

VRW: Not recommended, in contrast to ERPG

AGW: Based on information as described in ERPG-document, different values are derived, other time-points added

LBW: Based on information as described in ERPG-document, different values are derived, other time-points added

Date: 31-10-2017

ERPG 2004

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	6800	4700	2400	1200	590	290	Tremors in rats
LBW	21,000 *	15,000 *	12,000 *	9400 *	7400 *	3700	Mortality in rats

* value higher than 10% of LEL

Derivation of the Dutch Intervention Values

VRW: No reliable human or animal data were available to derive VRW values. In absence of appropriate data, the VRW was set to Not Recommended.

AGW: AGW-values are based on an acute toxicity study in rats. Groups of 10 rats (5 males and 5 females) were exposed whole-body to a nominal concentration of 47,000 mg/m³ for 3 hours, 107,000 mg/m³ for 4 hours, 207,000 mg/m³ for 70 minutes, and 495,000 mg/m³ for 18 minutes. Actual concentrations were not determined. At 47,000 mg/m³ no mortality occurred, but tremors were observed after 30-45 minutes of exposure and unconsciousness after 60-80 minutes. At the higher concentrations, unconsciousness was observed after 20-30 minutes, 10-15 minutes, and 1-5 minutes, respectively. The exposure duration of 30 minutes to a concentration of 47,000 mg/m³ (onset of tremors) was taken as point of departure for the AGW-values. The default uncertainty factor of 10 (3x3) was considered sufficient to account for inter- and intraspecies differences. Time scaling was applied using the default values of n=1 and n=3 when extrapolating to longer and shorter durations, respectively.

LBW: LBW-values are based on a lethality study in rats. Groups of 5 male and 5 female rats were whole-body exposed for 4 hours to concentrations of 800, 3,000, 6,000, 12,000, 24,000, 36,000, 39,000, 42,000, 45,000 and 48,000 ppm (2,067, 7749, 15,499, 30,997, 61,995, 92,992, 100,742, 108,491, 116,241, and 123,990 mg/m³), followed by a 14-day observation period. Mortality incidences for all concentrations tested were: 0/10, 0/10, 0/10, 0/10, 0/10, 2/10, 5/10, 5/10, 8/10, and 9/10, respectively. Using Doseresp, the 4-hour LC₀₁ and LC₅₀ were calculated as 74,440 mg/m³ and 104,100 mg/m³, respectively. The 4-hour LC₀₁ value of 74,440 mg/m³ was used as point of departure for deriving the LBW-values. The point of departure for the LBW-values is supported by another study in which 10 rats (5 males and 5 females) were exposed whole-body to a nominal concentration of 47,000 mg/m³ for 180 minutes, 107,000 mg/m³ for 240 minutes, 207,000 mg/m³ for 70 minutes or 495,000 mg/m³ for 18 minutes. Mortality incidences for these exposures were 0/10, 4/10, 10/10 and 10/10, respectively.

The default uncertainty factor of 10 (3x3) was considered sufficient to account for inter- and intraspecies differences. Time scaling was applied using the default values of n=1 and n=3 when extrapolating to longer and shorter durations, respectively.

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

Dimethyl sulfide irritates the mucous membranes and induces CNS-depression.

Information on the toxicokinetics of dimethyl sulfide is very limited. No reliable animal data are available. A

human case report, where two fatalities occurred in a storage tank of a paper manufacturing plant, reported that dimethyl sulfide was widely distributed in the tissues of one of the victims.

No data were found on reproductive toxicity by inhalation of dimethyl sulfide.

No harmonised H-sentences for human health.

Carcinogenicity and derivation of the CRP value	Odour and derivation of the LOA value
<p>IARC classification: not classified.</p> <p>No carcinogenic risk potency (CRP) was derived.</p>	<p>Odour: Unpleasant, cabbage-like</p> <p>OT: 0.0025 mg/m³ [Ruth, 1986]</p> <p>LOA = 11.8 * OT * 1.33 = 0.039 mg/m³</p> <p>(The concentration level leading to distinct Odour Awareness (I=3) is calculated using the formula: $I = 2.33 * \log(C/OT) + 0.5$. A correction factor of 1.33 is applied to this value)</p> <p>The LOA lies far below the AGW values.</p>

Other standards and guidelines (1h values in mg/m³, unless otherwise indicated) ^a			
VRW level NR	AEGL-1 -	ERPG-1 1.27	IDLH: not derived
AGW level 2400	AEGL-2 -	ERPG-2 2540	
LBW level 12,000	AEGL-3 -	ERPG-3 12,700	

^a Note that the ERPG values as presented here (in mg/m³) are derived using the conversion factors of the ERPG.