

(NVvA/SER) Richtlijn Grenswaarden



Hulp bij het vinden èn afleiden
van private waarden

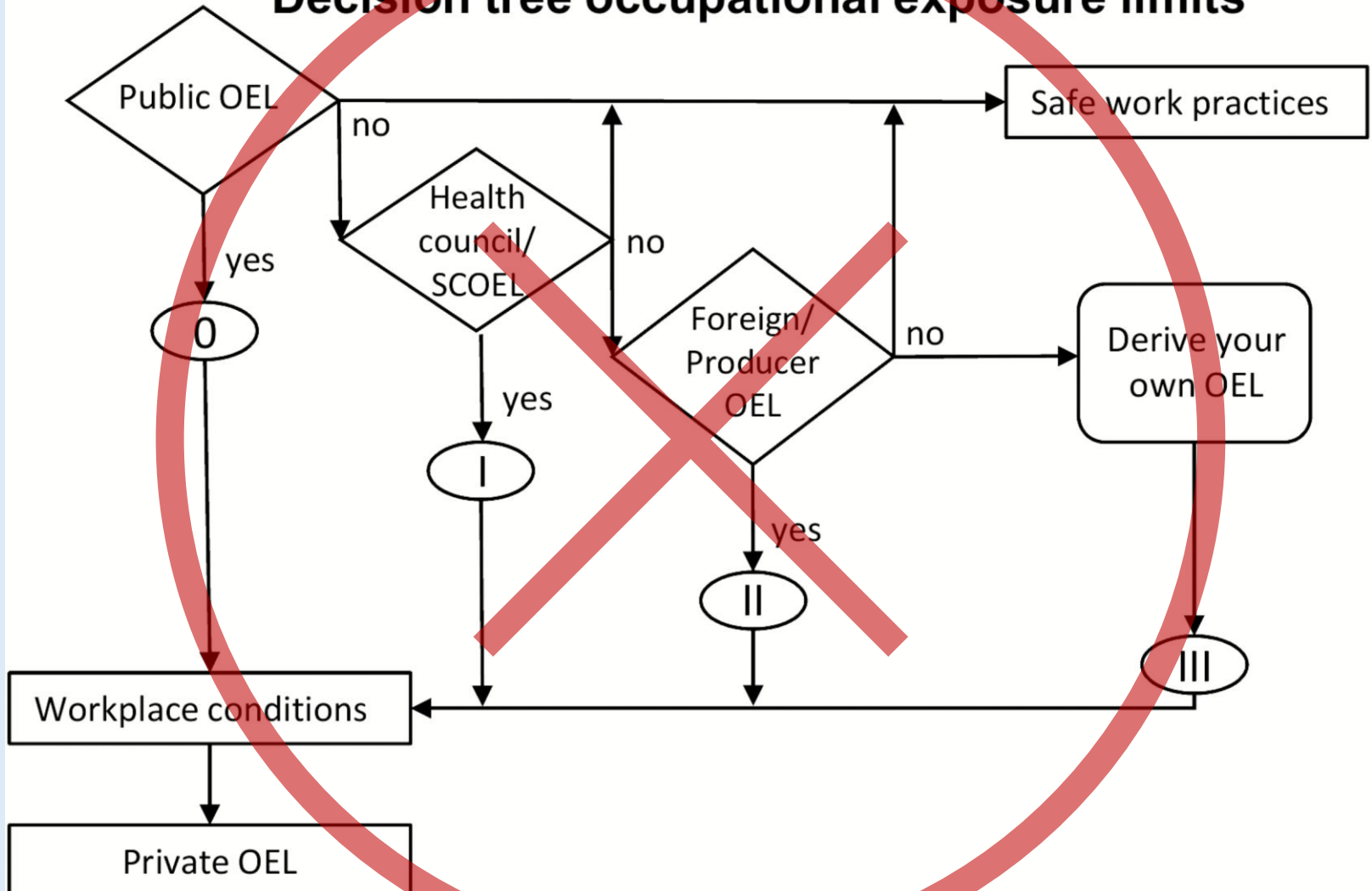
Theo Scheffers

250409 sessie-K 14:05 uur

SER afloopschema 2007

Dutch Social and Economic Council 2007 proposal. <https://www.ser.nl/en/themes/OEL-Database>

Decision tree occupational exposure limits



Landschap werkplek grenswaarden

Grenswaarden voor:

- Naleving NL/EU Arbo regels    
- Gezondheidsbewaking/Letselschade, beroepsziekte     
- Productveiligheid in de commerciële keten:
sinds 2008 REACH DN/MEL 

Naleving ≠ gezondheidskundig

- Tin verbindingen
- Isocyanaten
- PAK's van koolteer
- Koolwaterstofmengsels
- Olienevel
 - Wettelijk : 5 mg/m³ (StC 2022, nr. 32933)
 - SCOEL 2011 : 5 mg/m³
 - Gr 2011 : 1.6 mg/m³
 - Gr 2011 : 0.1 mg/m³ In metaalbewerkingsvloeistoffen
- Soja
- Kwarts
- Ethanol

Peiling (groen ja, rood nee)

Een NVvA grenswaarden leidraad adviseert de blootstellingsbeoordelaar (EN689) zich te richten op:

1. de naleving
2. de gezondheid
3. Beide,
En bij verschillen:
 - Kiezen voor de laagste
 - de werkgever de verschillen duiden
 - Anders nl.....

Freeware voor Arbo-naleving

<https://wetten.overheid.nl/BWBR0008587/2025-02-01#BijlageXIII>
Bijlage XIII behorend bij de **Lijst wettelijke grenswaarden**
artikelen 4.19, eerste lid, en 4.20, eerste lid

Home / Publicaties / Actueel / Thema's

Home / Thema's / Arbo / Grenswaarden / Zoek een grenswaarde

Zoek een grenswaarde

In de Databank Grenswaarden Stoffen op de Werkplek kunt u opzoeken welke grenswaarde er is vastgesteld. Gebruik hiervoor het zoekveld.

Werk in uitvoering
De databank Grenswaarden, die onderdeel is van het Arboplatform van de SER, is met uiterste zorgvuldigheid samengesteld. De databank is momenteel voor sommige stoffen niet up-to-date. De SER onderzoekt hoe het dit kan herstellen. Excuses voor het eventuele ongemak. Mocht u iets opvallen, laat het ons weten via arboplatform@ser.nl. De officiële bron voor grenswaarden voor stoffen op de werkplek in Nederland is bijlage XIII van de Arbeidsomstandighedenregeling.¹

Zoek grenswaarden op naam, CAS nummer of EU nummer:



TRGS 900

Risikobezogenes
Maßnahmenkonzept für
Tätigkeiten mit krebser-
zeugenden Gefahrstoffen

TRGS 910

rvzoekstelsysteem.rivm.nl/Stoffen

Rijksinstituut voor
Volksgezondheid en Milieu
Ministerie van Volksgezondheid,
Welzijn en Sport

RIVM De zorg van morgen begint vandaag

Zoek stoffen

1 Zoeken — 2 Gevonden stoffen

Stofnaam Zoek exact

CAS/EG-nummer(s) Zoek op meerdere CAS/EG-nummers

← → ↻ diamonds.tno.nl/sis/sis

Diamonds³

Dashboard Substance Information System SIS Stoffen

Zoek en selecteer een stof

[Typ een stofnaam of een CAS-nummer (gebruik '%' als wildcard)]

<https://www.dguy.de/ifa/gestis/gestis-internationale-grenzwerte-fuer-chemische-su...>

GESTIS - International limit values

Substance list

IFA
Institut für Arbeitsschutz der
Deutschen Gesetzlichen Unfallversicherung

2300 substances, 35 lists of limit values sourced from 29 countries no hierarchy

Acephate CAS-No. : 30560-19-1	Acetamide CAS-No. : 60-35-5
Acetanilide CAS-No. : 103-84-4	Acetic acid CAS-No. : 64-19-7
Acetic anhydride CAS-No. : 108-24-7	

EH40/2005

ESSI Exposure Science and Sustainability Institute
AIHA Exposure Assessment Standards COMMITTEE

Support File
SDM 2.0

Reference Values Selection process

OSHA → WEELS →
RELs → AEGLs →
ACGIH® →

Trexmo 3.0 artificial intelligence OELV search

m Login to Exposure Model

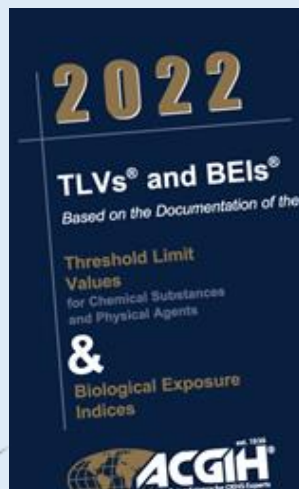
exposuremodel.com - 2025 - All Rights Reserved

Peiling: bron voor de naleving

- Wie gebruikt de SER?
- Wie gebruikt Gestis ?

Groen is Ja

Gezondheidskundige bronnen



Peiling

- Wie raadpleegt de gezondheidskundige bronnen?

Groen is Ja

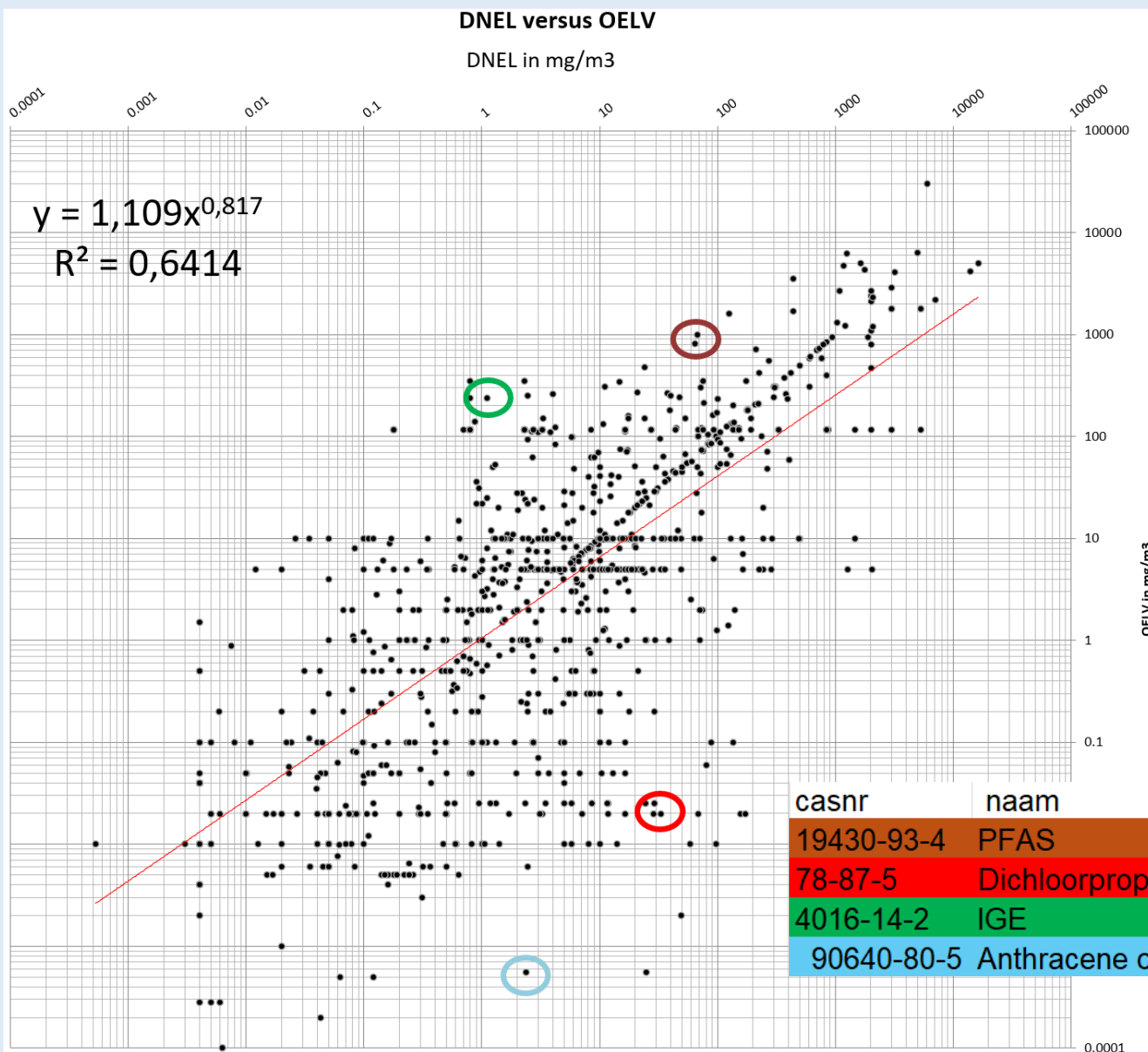


Peiling DNEL gebruik in Arbo

- Nooit
- Alleen bij het ontbreken van de OELV (~4500)
- Indien de DNEL lager is dan de OELV
- Altijd de DNEL ook als ie hoger is

Groen is Ja

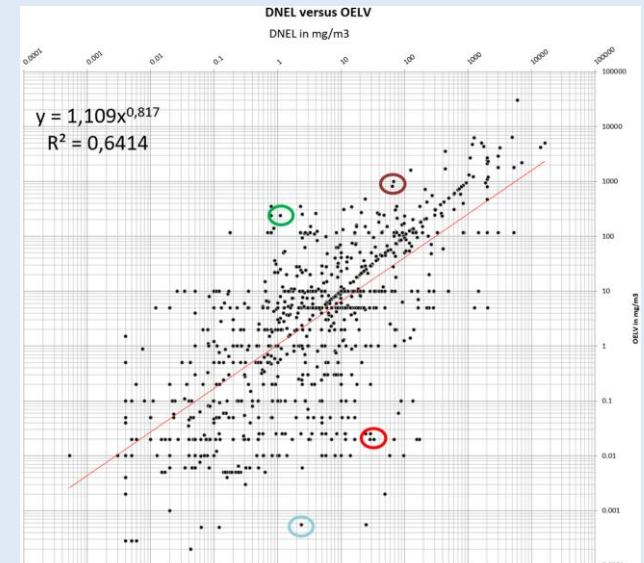
Hoogst hiërarchische OELV & Laagst numerieke DNEL



casnr	naam	DNEL	OELV	bron_OELV
19430-93-4	PFAS	67.4	1000	ACGIH
78-87-5	Dichloorpropan	28.88	0.028	ECHA-RAC
4016-14-2	IGE	1.1	240	ACGIH
90640-80-5	Anthracene oil	2.39	0.00055	nl-wet

OELV(Arbo) \neq Productveiligheid (REACH)

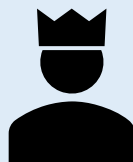
- Lage OELV \ll lage DNELs
- DNEL poeders \neq max 10 mg/m³
- Chromaten (OELV als Cr, DNEL hele molecuul)
- Sensibilisatie via de ademlucht vaak niet in de DNEL
- Zo'n 10% DNEL=OELV (\sim DFG)



Hierarchie opties

- Naleving

- Status



- Buitenland

- laag → hoog



hoog → laag

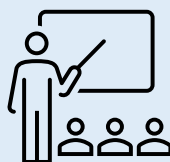


- Nabijheid



- Gezondheidkundig

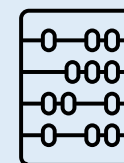
- Kwaliteit



holistisch,
Gr, RAC



Tox +AF fragmentic,
DNEL



data poor
Kickoff

- Leeftijd

vóór of ná 1996

Occupational/Workplace Exposure Limit Value landscape

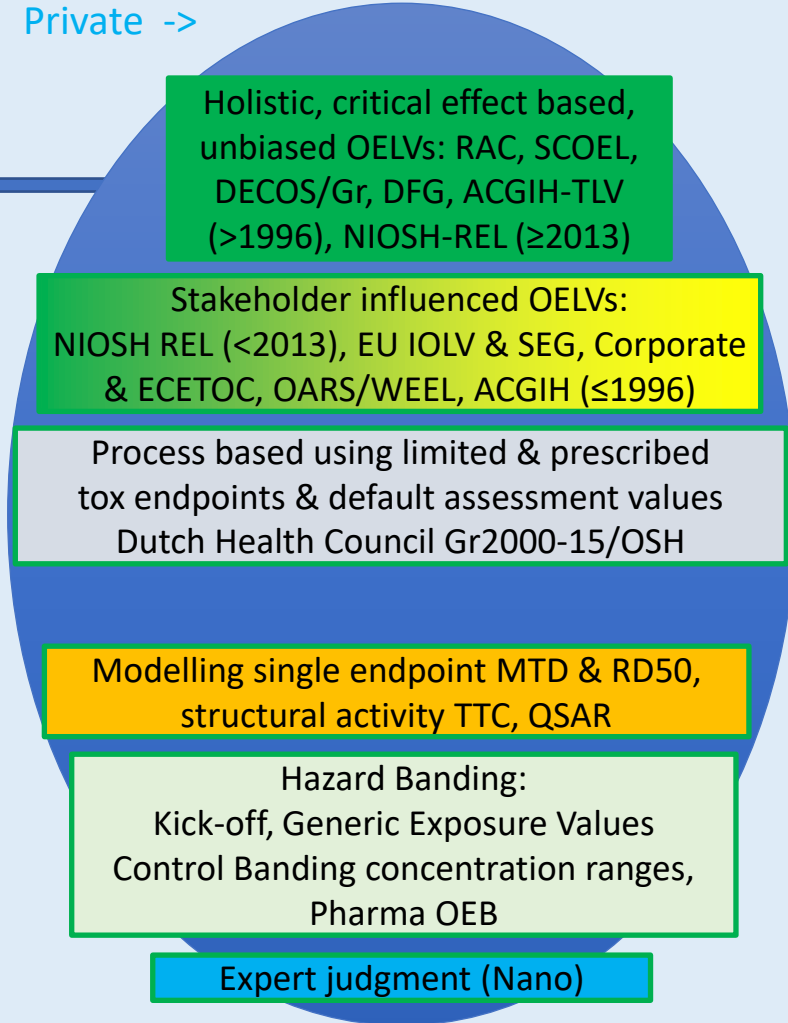
Working conditions
legal compliance

Health surveillance & civil liability
occupational disease

Product safety & liability,
(license to operate)

<- Public Private ->

- Legal OELV's. Some with technical and/or economical feasibility:
- NL
 - EU BLV/IOLV
 - DE TRGS900/910
 - Fr VLEP
 - Other EU
 -
 - UK WEL
 - USA OSHA PEL
 -



Data rich
Tox & Epi -> Holistic

Limited & Prescribed endpoints

<-Data poor algorithms

Sources: Theo Scheffers/DSM/NVvA-WGM/DOHSBase (1981+), Naunam (1996), ECETOC_TR101 (2006) SER Guidance (2007), JOEH DOI: 10.1080/15459624.2015.1060327, EN689-B(2019), NIOSH OEB (2019)

Stoffen op EU werkplekken

stoffen	kenmerk	aantal	opmerking
casnr	wereldwijd	~270 miljoen	+15000/uur
EU gefabriceerd/ geïmporteerd	classificaties	205000	
REACH uitgezonderd/ natuurlijke stoffen	in DOHSBase	1000	

Uitpakken/Degrouping

Minerale olien/Olienevel

- StC 2022, nr. 32933: 5 mg/m³
- SCOEL 2011 : 5 mg/m³
- Gr 2011 : 1.6 mg/m³
- 39 metaalbewerkingsvloeistoffen: 0.1 mg/m³

Metalen als groepsgrenswaarde

- 892 Chroom VI
- 94 Hg verbindingen: SCOEL BM Hg urine/blood
- 957 Nikkelverbindingen

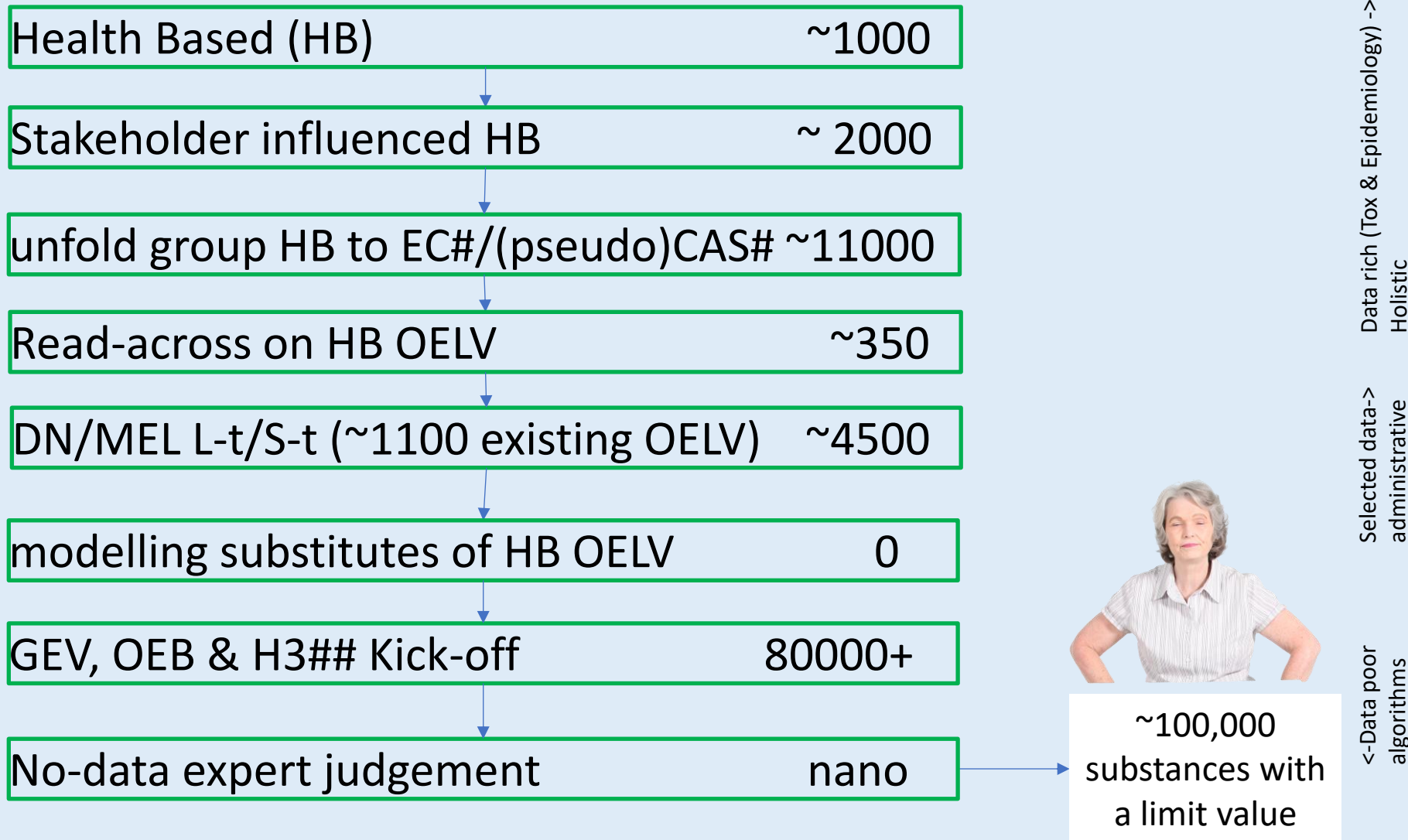
Isocyanaten

- 3871 als NCO (UK)
- 1561 di/tri-isocyanaten
- 30 RAC di-isocyanaten
- 336 OPS geassocieerde C₆₋₁₂ koolwaterstoffen/mengsels

900 Formaldehyde
uitscheiders (polymeren)

90 Fluoride-verbindingen:
EU/BLV BM F⁻ urine

private OELV's in numbers



Version 221105

Peiling: Een NVvA leidraad grenswaarden vinden

- Moet kunnen en heeft toegevoegde waarde
- Zelfstandig als NVvA als kwaliteitsvereniging

Zelf grenswaarde afleiden?

- ~115.000 EU stoffen zonder grenswaarden
- Laagdrempelige richtlijn
 - Wat bestaat er al?

Expert aanpak

PATCHWORK 2.0 Public Access to Toxicity data of Chemicals Hazardous to Human Health

Paul T.J. Scheepers PhD
toxicologist, occupational hygienist,
public health advisor hazmat

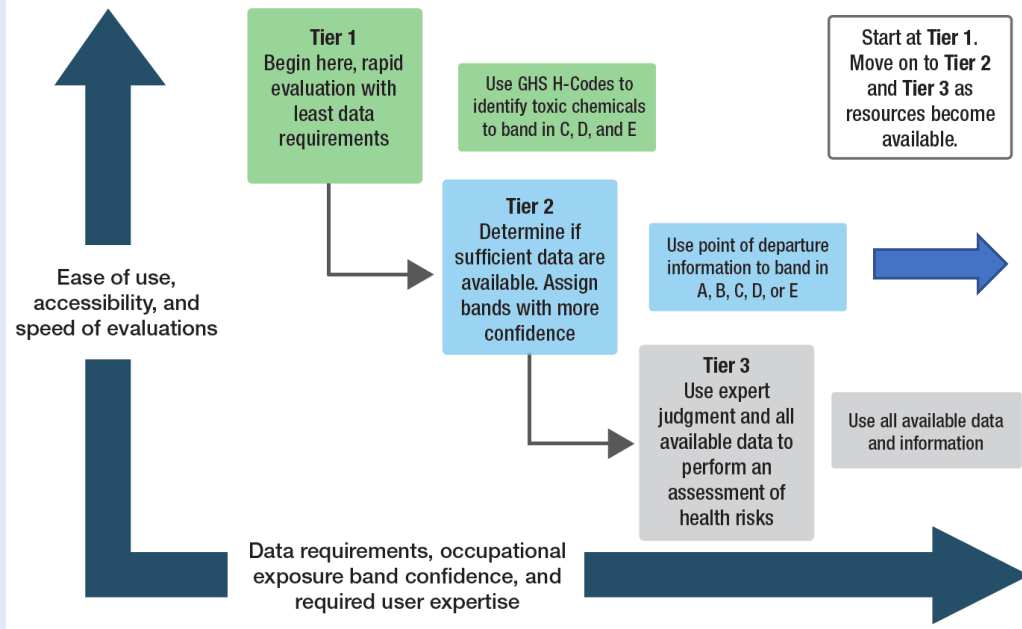
Radboud University Nijmegen Medical Centre

Laagdrempelige aanpak

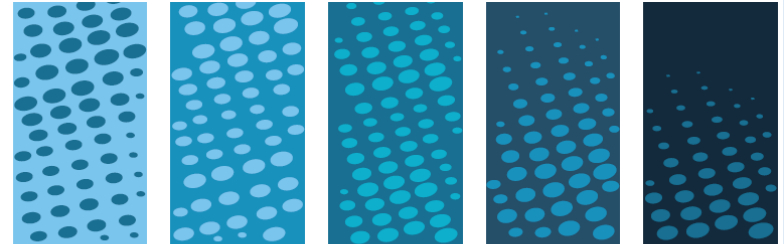
NIOSH OEB (TR 2019-132)

- Tier 1: Hazard Banding, data poor
- Tier 2: HB + Toxicology (DNEL-like)
- Tier 3 : Holistic, data rich

viii | The NIOSH Occupational Exposure Banding Process for Chemical Risk Management
<https://www.cdc.gov/niosh/docs/2019-132/pdfs/2019-132.pdf>



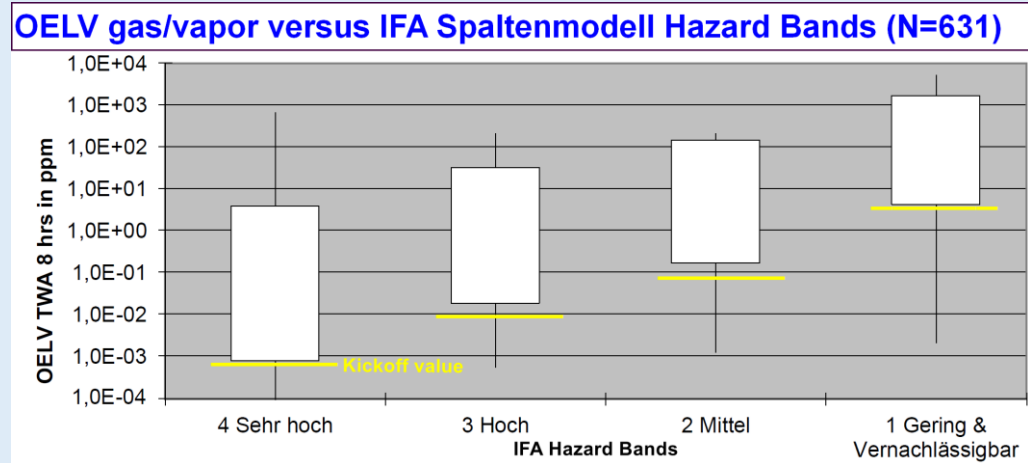
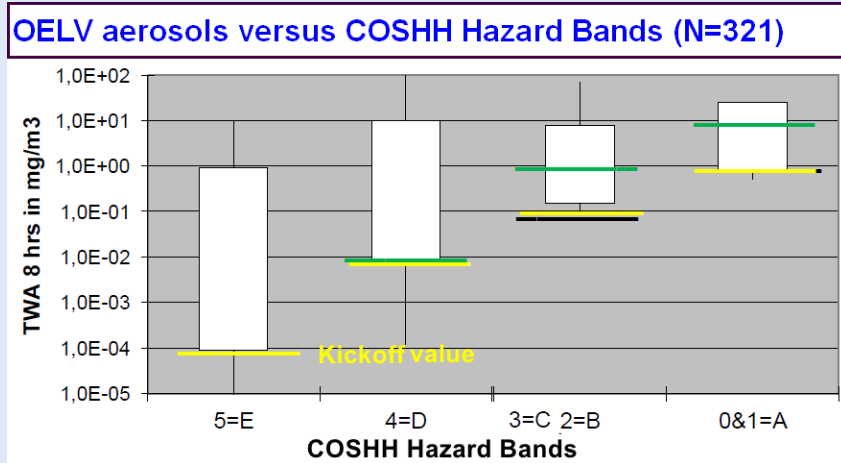
The NIOSH Occupational Exposure Banding Process for Chemical Risk Management



(1) carcinogenicity; (2) reproductive toxicity; (3) specific target organ toxicity; (4) genotoxicity; (5) respiratory sensitization; (6) skin sensitization; (7) acute toxicity; (8) skin corrosion and irritation; and (9) eye damage/irritation

Deduce private limit values

Tier 1: GHS H-3## based Kickoff DOHSBase (2014)



Kick-off values for dust/aerosols (base: COSHH Essentials)

Hazard Band	5=E	4=D	3=C 2=B*	0&1=A
H-statements	H334, H340, H341, H350, H350i	H300, H310, H330, H351, H360 (F/D/FD/Fd/Df), H361 (f/d/fd), H362, H372	H301, H302, H311, H312, H314, H317, H318, H331, H332, H335, H370, H371, H373, EUH071	H303, H304, H305, H313, H315, H316, H319, H320, H333, H336, EUH066, other H-statements n.o.s., REACH Annex IV
Dusts (mg/m ³)	0,0001	0,01	0,1	1

*: COSHH Essential Groups B+C combined

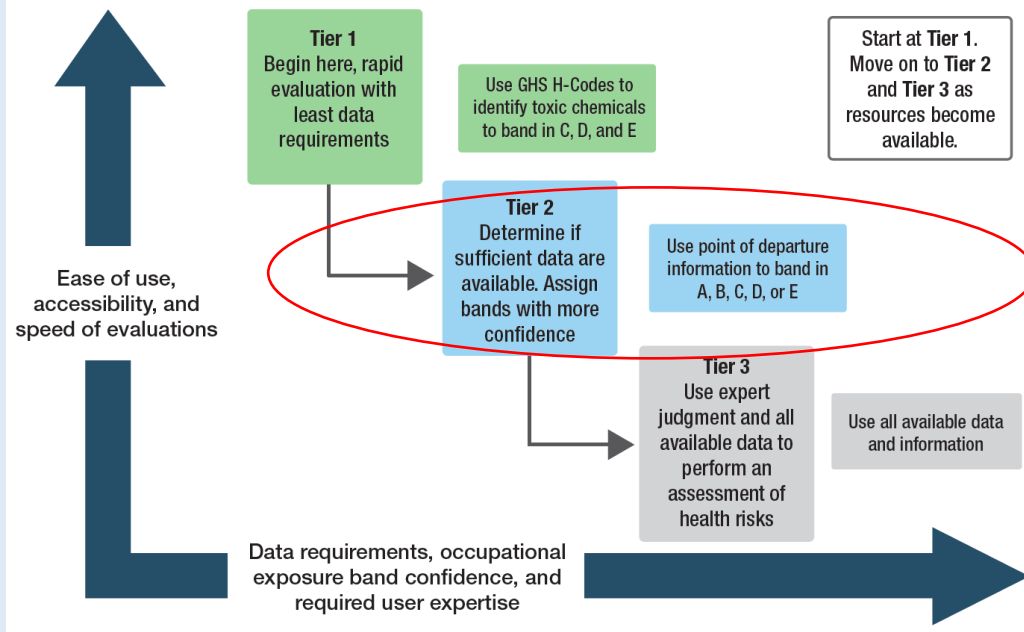
Kick-off values for gases/vapors (base: DGUV IFA Spaltenmodell)

Hazard Band	4	3	2	1
H-statements	H300, H310, H330, H340, H350, H350i, EUH032	H301, H311, H317, H318, H331, H334, H341, H351, H360 (F/D/FD/Fd/Df), H370, H372, EUH029, EUH031, EUH070	H302, H312, H314, H332, H361 (f/d/fd), H362, H371, H373, EUH071	H304, H315, H319, H335, H336, EUH066, other H-statements n.o.s., REACH Annex IV
Gases/vapors (ppm)	0,001	0,01	0,1	5

DNEL-like OELV

- Tier 1: Kickoff DOHSBase (2005/2014)
- Tier 2: Tox+Assessment-Factors
- Tier 3: Holistic

viii | The NIOSH Occupational Exposure Banding Process for Chemical Risk Management
<https://www.cdc.gov/niosh/docs/2019-132/pdfs/2019-132.pdf>



Assessment factors based OELV



Published: September 1979

The use of a safety factor in setting health based permissible levels for occupational exposure

R. L. Zielhuis & F. W. van der Kreek

International Archives of Occupational and Environmental Health 42, 191–201 (1979) |

January 2001

Project: [Risks to health and environment](#)

Authors:



Theo Vermeire

National Institute for Public Health and th...



Pieters M



Monique A J Rennen

TNO



Peter Bos

National Institute for Public Health and th...

[Download citation](#)

[Copy link](#)

$$OELV_A = N(L)OAEL/C_{corr} / AF_1 \times AF_2 \times \dots \times AF_n$$



Guidance on information requirements and chemical safety assessment
Appendix to Chapter R.8: Guidance for preparing a scientific report for health-based exposure limits at the workplace
Version 1.0 August 2019



Version: 2.1

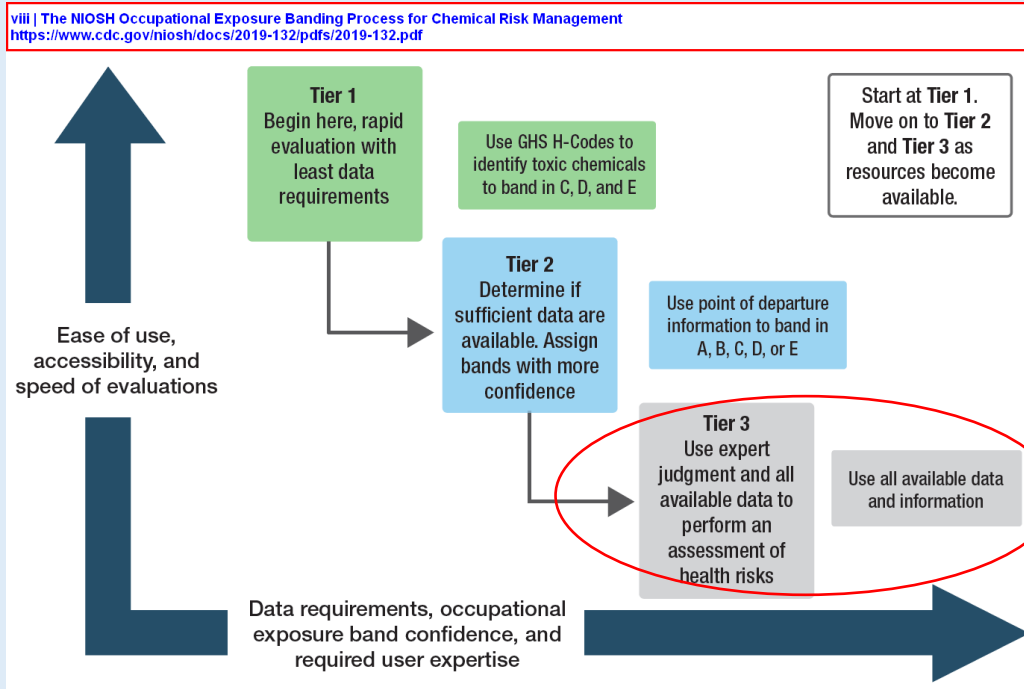
November 2012

<http://echa.europa.eu>

Guidance on
information requirements and
chemical safety assessment
Chapter R.8: Characterisation of dose
[concentration]-response for human health

Guidance deducing private OELV

- Tier 1: “Kickoff”, data poor
- Tier 2: Tox + AF, DNEL-like
- Tier 3 : “Holistic”, data rich



Holistic

Guidance for recommending classifications and health-based occupational exposure limits

By

the Dutch Expert Committee on Occupational Safety (DECOS)
the Subcommittee on the Classification of Carcinogenic Substances
the Subcommittee on the Classification of Substances Toxic to Reproduction

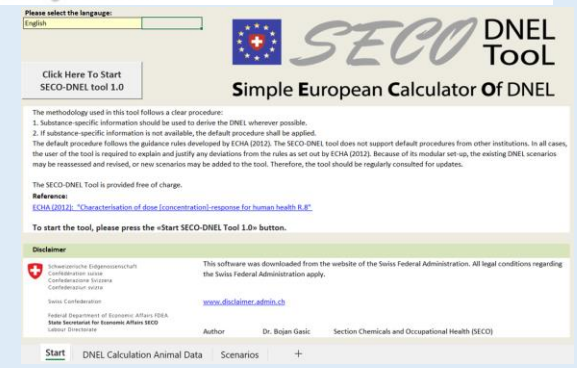
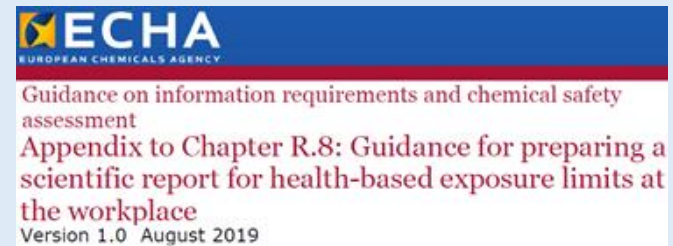
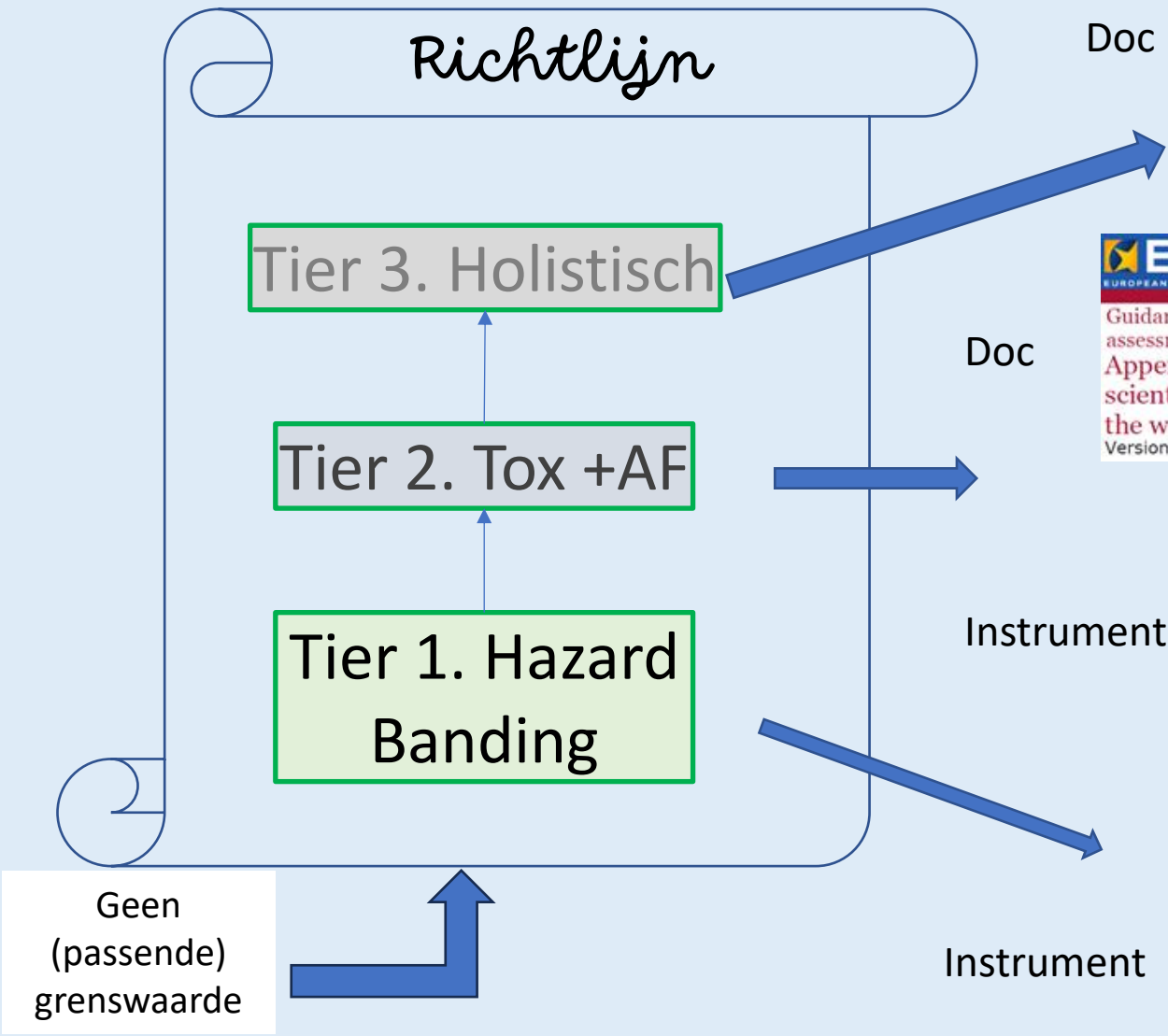
The Hague, December 21, 2021

Health Council of the Netherlands

Including Occupational Epidemiology/Health surveillance etc.

<https://www.healthcouncil.nl/documents/other/2021/12/21/guidance-for-recommending-classifications-and-health-based-occupational-exposure-limits>

Afleiden private grenswaarde NL



Kick-off values for gases/vapors
(base: DGUV IFA Spaltenmodell)

Hazard Band	4	3	2	1
H-statements	H300, H310, H330, H340, H350, H350i, EUH032	H301, H311, H317, H318, H331, H334, H341, H351, H360 (F/D/FD/Fd/Df), H370, H372, EUH029, EUH031, EUH070	H302, H312, H314, H332, H361 (f/d/fd), H362, H371, H373, EUH071	H304, H315, H319, H335, H336, EUH066, other H-statements n.o.s., REACH Annex IV
Gases/vapors (ppm)	0,001	0,01	0,1	5

Peilig Een NVvA leidraad grenswaarden afleiden a la NIOSH

- Moet kunnen en heeft toegevoegde waarde
- Zelfstandig als NVvA als kwaliteitsvereniging
- In (betaald) project met de SER
- Anders

Flowchart Finding & deducing private OELV

EU Working conditions compliance

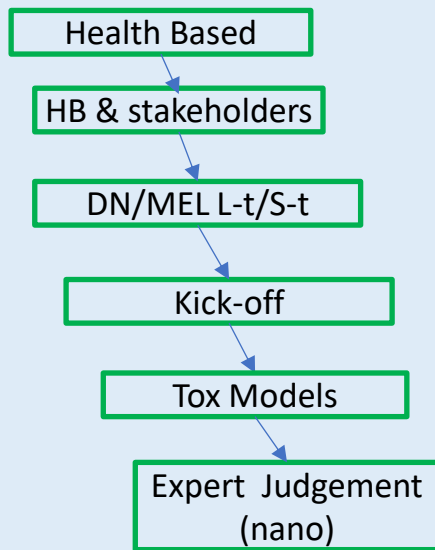
Legal limits with possible technical (and/or economical) feasibility:

- EU BLV
- NL legal OELV
- DE TRGS900
- Fr VLEP
- others
-
- 2. UK WEL
- 3. USA OSHA PEL
- 3.

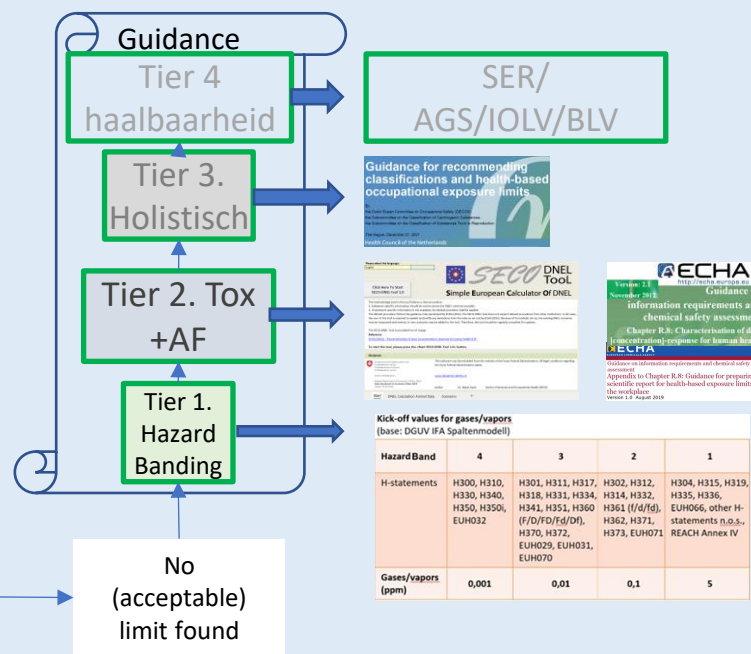
100 - 1000

Version 220106

Finding



deducing



Kick-off values for gases/vapors (base: DGUV IFA Spaltenmodell)

Hazard Band	4	3	2	1
H-statements	H300, H310, H330, H340, H350, H350, EUH032	H301, H311, H317, H318, H331, H334, H341, H351, H360 (F/D)/F0/F0/Df, H370, H372, EUH029, EUH031, EUH070	H302, H312, H314, H332, H361 (F/d)/f, H362, H371, H373, EUH071	H304, H315, H319, H335, H336, EUH066, other H-statements n.o.s., REACH Annex IV
Gases/vapors (ppm)	0,001	0,01	0,1	5

Tools & Guidelines

- 1: GHS/CLP H-code based Kickoff [DOHSBase \(2014\)](#)
- 2: Tox+Assessment-Factors [SECO-DNEL.xlsm \(2016\)](#)
- 3: Holistic [Health Council Netherlands \(2021\)](#)

Voorbeeld

Example Na-HexoBarbiturate 50-09-9

<https://www.echa.europa.eu/web/guest/substance-information/-/substanceinfo/100.000.009>

ECHA > Substance Information

IC

Substance Infocard

See a problem or have feedback?

Hexobarbital sodium

Regulatory process names 2 Other identifiers 1

RSS

EC / List no.: 200-009-1 **CAS no.:** 50-09-9 **Mol. Formula:**

Brief Profile

REACH registered
substance factsheets

C&L
Inventory

Biocidal active
substance factsheets

PACT tool

Regulatory Obligations

<https://gestis-database.dguv.de/search>



Home List AZ Search documents

Substance name ? 50-09-9 ?

molecular formula ? Full text search ?

Search

Exact search

There are no results for your search



DOHSB SE
eu Version

DASHBOARD SEARCH EXPORT DATA SUBSCRIPTIONS LANGUAGE USER GIVE FEEDBACK CRM ADMINISTRATION [MUN ACCOUNT]

Occupational load name: Hexobarbital, sodium salt

CAS-number: 50-09-9

Identity Physical Chemical Properties **Hazard Properties** Limit values & documents Sampling methods

Classification Annex III listing: Suspected hazardous to the aquatic environment,mutagen,persistent in the environment,toxic for reproduction,

Source REACH Annex III Inventory updated 18/05/2016

Identity Physical Chemical Properties Hazard Properties **Limit values & documents** Sampling methods

No results found

<http://pubchem.ncbi.nlm.nih.gov/>

<https://pubchem.ncbi.nlm.nih.gov/compound/Hexobarbital-sodium#section=Acute-Effects...>

PUBCHEM > HEXOBARBITAL SODIUM > ACUTE EFFECTS

CID 23664950

Hexobarbital sodium

Acute Effects

#	Organism	Test Type	Route	Dose	Reference
1	rat	LD50	oral	1 gm/kg	Archives of Toxicology., 54(275), 1983 [PMID:6667118]

[▶ ChemIDplus](#)

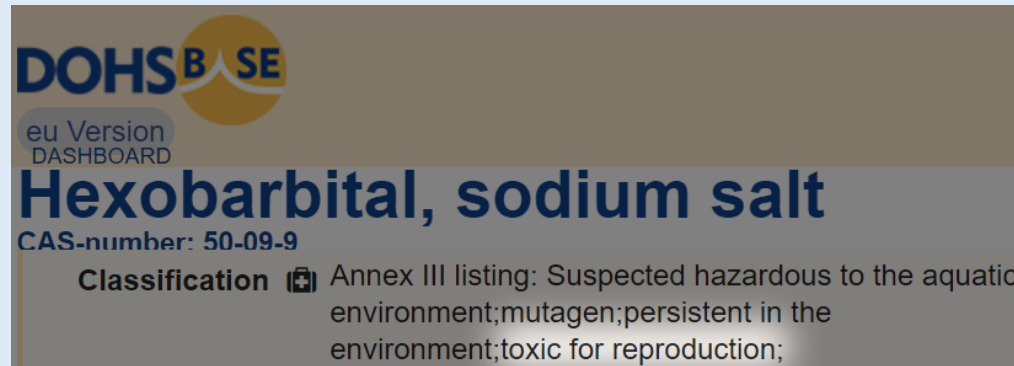
LD50 rat 1 g/kg -> GHS H302 ->
 Kick-off 0.1 mg/m³ for dust
 (COSHH hazard band engine)

<https://www.dohsbase.nl/kick-off-waarden-een-introd...>

Kick-off values for dust/aerosols
 (base: COSHH Essentials)

Hazard Group	4	3	2 *	1	level (& duration)		EU DSD[17,18], CLP [20] and REACH[19] non-dangerous			
					Quantity	Units	signal word	Health hazard Pictogram	CLP Health hazard class and category code	CLP H-Statement
H-statements	H334, H340, H341, H350, H350i	H300, H310, H330, H351, H360 (F/D/FD/ Fd/Df), H361 (f/d/fd), H362, H372	H301, H302, H311, H312, H314, H317, H318, H331, H332, H335, H370, H371, H373, EUH071	H303, H304, H305, H313, H315, H316, H319, H320, H333, H336, EUH066, other H-statements n.o.s., REACH Annex IV	5	mg/kg	D	GHS06	Acute Tox 1	300
					5-25	mg/kg	D	GHS06	Acute Tox 2	300
					25-50	mg/kg	D	GHS06	Acute Tox 2	300
					50-200	mg/kg	D	GHS06	Acute Tox 3	301
					200-300	mg/kg	D	GHS06	Acute Tox 3	301
					300-2000	mg/kg	W	GHS07	Acute Tox 3	302
Dusts (mg/m ³)	0,0001	0,01	0,1		5000	mg/kg	no REACH registration Exposure Scenario Considered to cause minimum risk REACH			

Suspected toxic for reproduction



DOHS BASE
eu Version
DASHBOARD

Hexobarbital, sodium salt

CAS-number: 50-09-9

Classification ⓘ Annex III listing: Suspected hazardous to the aquatic environment; mutagen; persistent in the environment; toxic for reproduction;

A study of the teratogenic and fetotoxic effects of large doses of barbital, hexobarbital and butobarbital used for suicide attempts by pregnant women

G Timmermann^{1,2}, AE Czeizel¹, F Bánhidý² and N Ács²

Toxicology and Industrial Health 2008; 24: 109–119

<http://tih.sagepub.com>

- <https://en.wikipedia.org/wiki/Hexobarbital#References>
- <https://journals.sagepub.com/doi/pdf/10.1177/0748233708089004>
- <https://ur.booksc.me/book/42015555/78ed83>

CompTox similar Barbitals

<https://comptox.epa.gov/dashboard/chemical/similar-molecules/DTXSID301018906>

Hexobarbital sodium [NF]
50-09-9 | DTXSID301018906
Searched by DTXSID

Searched with a similarity threshold of 0.8

Showing 84 chemicals

Read-across using CompTox

DOHSBase CompareEU 22-02

File Mode Language Help

Compare; file Hexobarbital_similarities_with_0.8_threshold

TOX: COSHH OELV: TWA 8 hr in mg/m3

List of substances sorted on Risk Assessment Score (RAS)

Name	CAS-number	Physical state	H/EUH-code(s)	TOX	C_sat	OELV	TIX	RAS
▶ pentobarbital	76-74-4	Solid	>=1 EU-CLP notified H361 H301 # 311 # 331	3	3,7 E-06	0,0100000	0,0	0,0

List of substances with no RAS-value

Name	CAS-number	Physical state	H/EUH-code(s)	TOX	C_sat	OELV
barbital sodium	144-02-5	Solid-like, vp<=1 ppb	>=1 EU-CLP notified H361	3	0 E+00	0,0100000
pentobarbital sodium	57-33-0	Solid	>=1 EU-CLP notified H361 H301 # 311 # 331	3	0 E+00	0,0100000
secobarbital sodium	309-43-3	Solid-like, vp<=1 ppb	>=1 EU-CLP notified H361 H301 # 311 # 331	3	0 E+00	0,0100000
5-allyl-5-(2-cyclopenten-1-yl)barbituric acid	76-68-6	Solid	>=1 EU-CLP notified H301 # 311 # 331	2	0 E+00	0,1000000
amobarbital sodium	64-43-7	Solid-like, vp<=1 ppb	>=1 EU-CLP notified H301 # 311 # 331	2	0 E+00	0,1000000

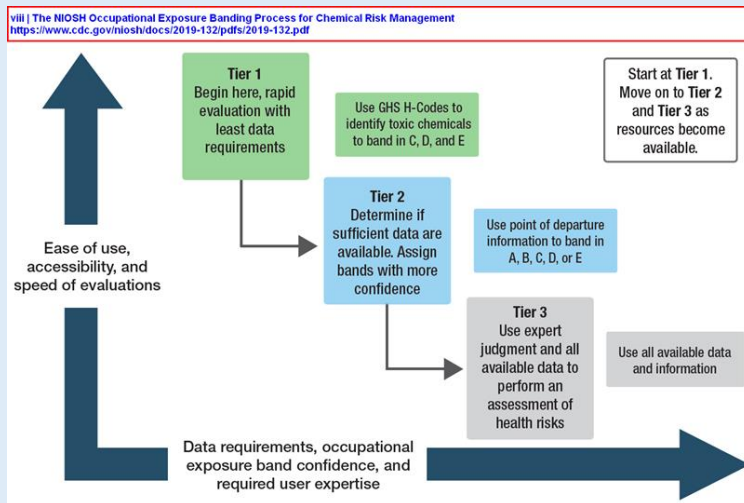
Size database Compare:: 97375 ; Selected: 21

1.635 MB 04-07-2022 23:40:44

Tier 1 Kickoff Na-hexobarbiturate

Data-poor

- Patchwork: only a LD50=> H302=> 0.1 mg/m³
- CompTox: read-across=> H361=> 0.01 mg/m³



NIOSH Occupational Exposure Banding e-Tool (version 1.1)

Tier One Recommendation

Overall Recommended Band
C

Vapor Range: > 1 and < 10 ppm
Particle Range: > 0.1 and < 1 mg/m³

Promoting productive workplaces through safety and health research **NIOSH**

Chemical Name: HEXOBARBITAL SODIUM SALT
CAS#: 50-09-9

Endpoint	Hazard Code	Hazard Category	Endpoint Band
Acute Toxicity	302	4	C
Skin Corrosion/Irritation			
Serious Eye Damage/ Eye Irritation			
Respiratory and Skin Sensitization			
Germ Cell Mutagenicity			
Carcinogenicity			
Reproductive Toxicity	361	2	C
Specific Target Organ Toxicity			
Overall Recommended Band			C

Swiss DNEL calculator



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,
Education and Research EAER

State Secretariat for Economic Affairs SECO
Working Conditions
Chemicals at work

Manual for the Simple European Calculator Of DNEL (SECO-DNEL Tool 1.0)

Date: 13.10.2016
For: public
Author: Dr. Bojan Gasic



SECO DNEL
Tool

Simple European Calculator Of DNEL

535-00003 \ COO.2101.104.7.901296

State Secretariat for Economic Affairs SECO

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<https://www.seco.admin.ch/seco/en/home/Arbeit/Arbeitsbedingungen/Chemikalien-und-Arbeit/Grenzwerte-am-Arbeitsplatz-DNEL.html>

$$OELV_A = N(L)OAEL/C_{corr} / AF_1 \times AF_2 \times \dots \times AF_n$$

Please select the language:

English



SECO DNEL Tool

Click Here To Start
SECO-DNEL tool 1.0

Simple European Calculator Of DNEL

9 end
points

The methodology used in this tool follows a clear procedure:

1. Substance-specific information should be used to derive the DNEL wherever possible.
2. If substance-specific information is not available, the default procedure shall be applied.

The default procedure follows the guidance rules developed by ECHA (2012). The SECO-DNEL tool does not support default procedures from other institutions. In all cases, the user of the tool is required to explain and justify any deviations from the rules as set out by ECHA (2012). Because of its modular set-up, the existing DNEL scenarios may be reassessed and revised, or new scenarios may be added to the tool. Therefore, the tool should be regularly consulted for updates.

The SECO-DNEL Tool is provided free of charge.

Reference:

[ECHA \(2012\): "Characterisation of dose \[concentration\]-response for human health R.8"](#)

To start the tool, please press the «Start SECO-DNEL Tool 1.0» button.

Disclaimer



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Federal Department of Economic Affairs FDEA
State Secretariat for Economic Affairs SECO
Labour Directorate

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www.disclaimer.admin.ch

Author

Dr. Bojan Gasic

Section Chemicals and Occupational Health (SECO)

Start

DNEL Calculation Animal Data

Scenarios

+

Excel Application, also for non-REACH substances

SECO Physchem + N(L)OAEEL

Physical-chemical information

Physical state of the substance/product	liquid	
Density	1000	kg/m ³
Pure vapour pressure	55	Pa
Molar fraction	99	
Molar mass	550	mg/mol
Log Kow	6	

Study information

Leading health effect	liver effects	
Study guideline	OECD TG 407	
Study duration	28	days
Species	rat	
Number of animals in the study	20	
Administration route	Oral	

Step 1: Select the relevant dose descriptor for the toxicological endpoint concerned

Toxicological endpoint:	Other effect - systemic	
NOAEL - oral route:	300	mg/kg bw/d

SECO C_{corr} , $AF_{1\dots n}$ & OELV/DNEL

Step 2: Modify the relevant dose descriptor per endpoint of the correct starting point

Starting point correction formula:

$\text{corr inh NOAEC} = \text{oral NOAEL} \times 1/\text{sRV}_{\text{an}} \times \text{Diff. exp. cond.} \times (\text{ABS}_{\text{oral,an}}/\text{ABS}_{\text{inh,hu}}) \times \text{sRV}_{\text{hu}}/\text{wRV}$

Relevant human exposure route:	inhalation	
$\text{ABS}_{\text{oral,an}}/\text{ABS}_{\text{inh,hu}}$	0.5	
Experimental animal:	rat	
Standard respiratory volume, animal (sRV _{an})	0.38	m ³ /kg bw/8 h
Standard respiratory volume, human (sRV _{hu})	6.7	m ³ / person
Worker respiratory volume (wRV)	10	m ³ / person
Differences experimental/human exposure conditions	1.4	

Corrected dose descriptor

corr inh NOAEC: 370.2631579 mg/m³

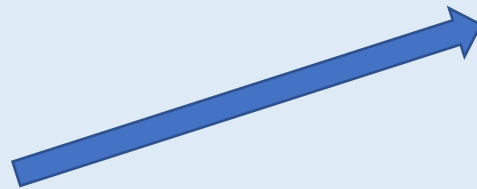
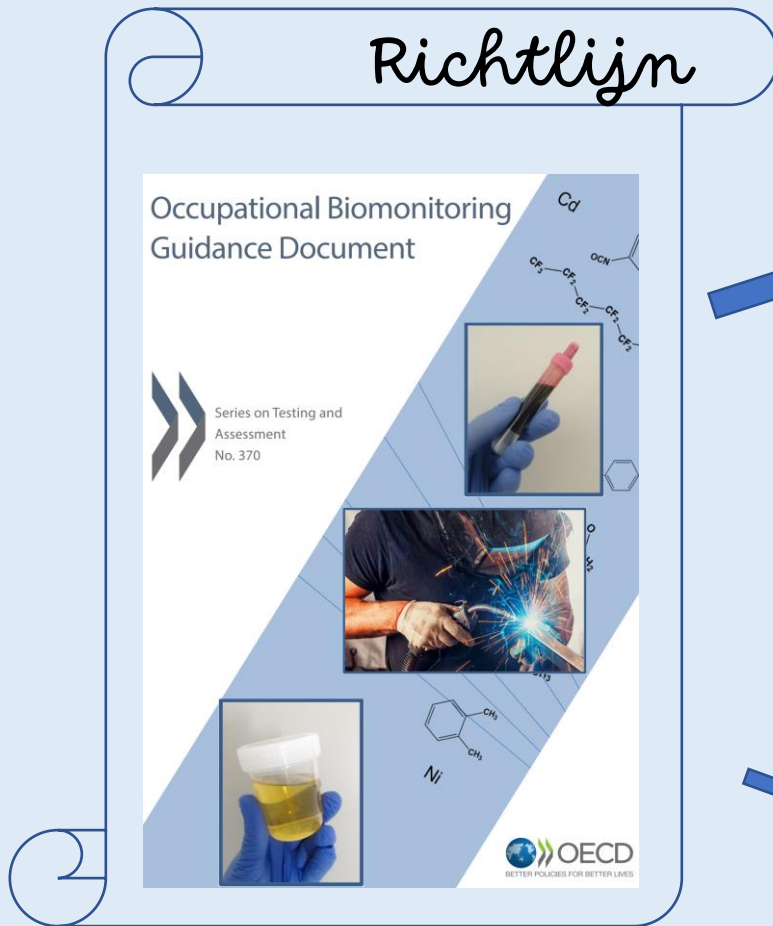
Step 3: Select assessment factors

Interspecies, AS	1
Interspecies, remaining differences	2.5
AF1: Interspecies, total	2.5
AF2: Intraspecies	5
AF3: Exposure duration	2
AF4: Dose response-relationship	1
AF5: Quality of the whole data base	1
Overall AF (= AF1xAF2xAF3xAF4xAF5)	25

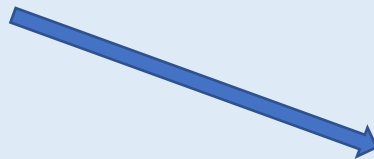
DNEL Results

worker-DNEL long-term for inhalation route-systemic-other effect: 14.81052632 mg/m³

Afleiden private BM grenswaarde (BLV)

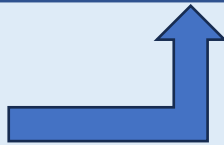


OBL



POBL

Geen
(passende)
grenswaarde



Data rich (Tox & Epidemiology) ->
Holistic

<-Data poor

Schiet maar lek/ complimenten/ aanvullingen?

Wie wil meedenken?

Wie wil meeschrijven?

BM deel ?

Tegenlezers

Laat je email achter