



Advancing Worker Health Protection

9th - 13th June | Aviva Stadium | Dublin

1. Basic Characterisation and Similar Exposure Groups

(AIHA 4th edition, EN689 clause 5.1).

NVvA 2024 – PBC Woudschoten 9-4-2024

IOHA 2024 – PDC-150 Dublin 9-6-2024

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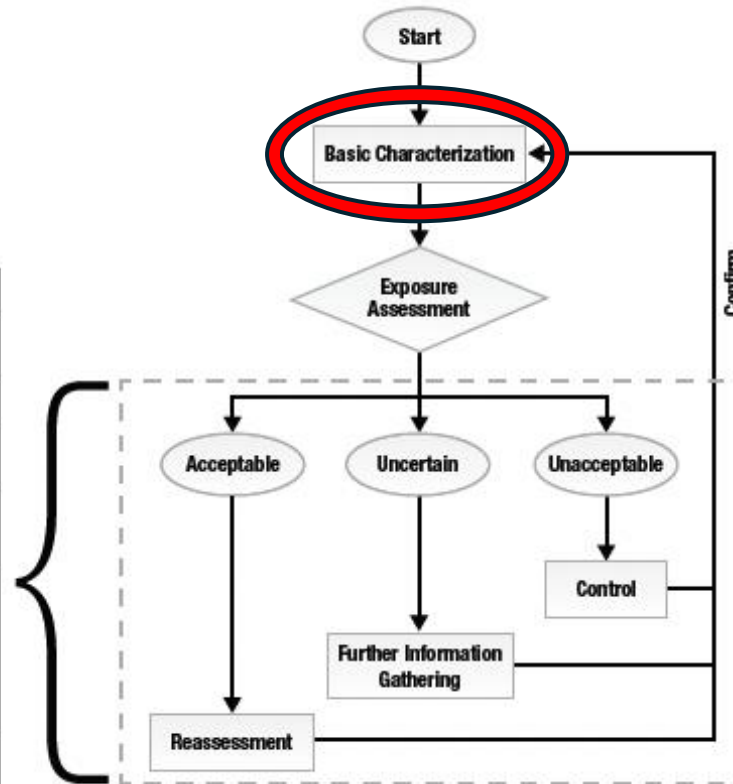
Theo Scheffers



Basic Characterisation: the fundamental principle of exposure assessment and control

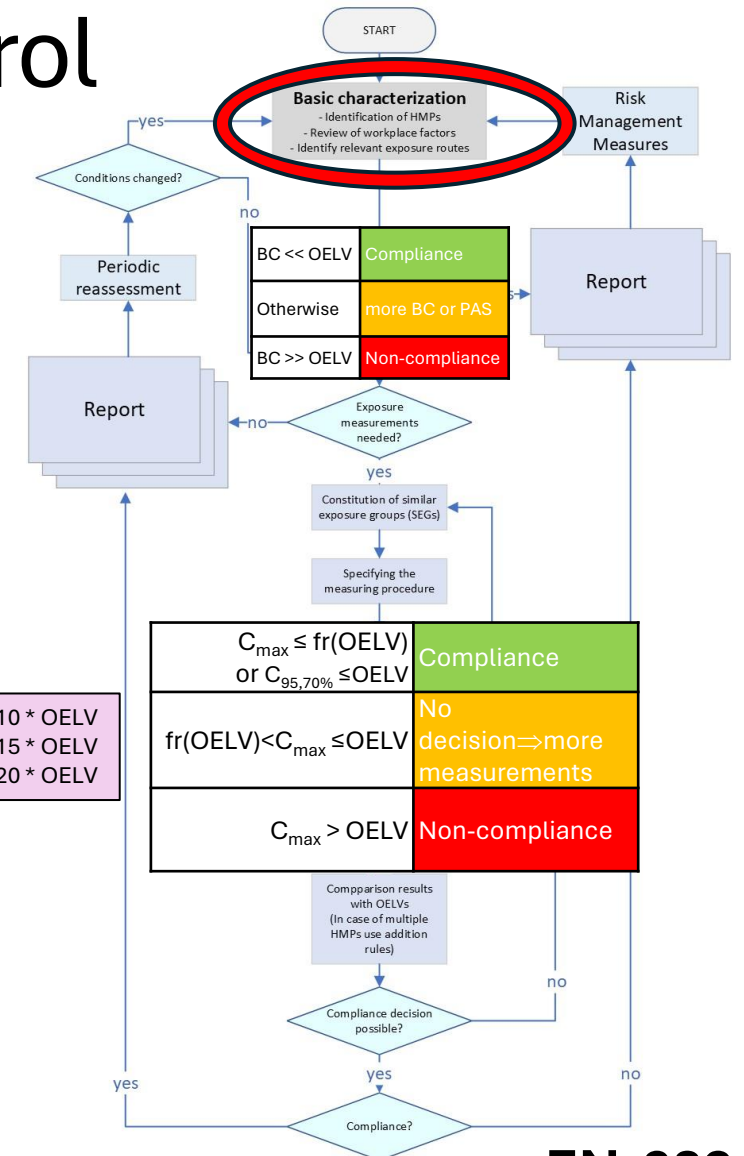
Management and Exposure Control Categories		
	SEG Exposure Control Category**	Applicable Management/ Controls
	0 (<1% of OEL)	no action
	1 (<10% of OEL)	procedures and training, general hazard communication
	2 (10-50% of OEL)	+ chemical specific hazard communication, periodic exposure monitoring
	3 (50-100% of OEL)	+ required exposure monitoring, workplace inspections to verify work practice controls, medical surveillance, biological monitoring
	4+ (>100% of OEL, Multiples of OEL; e.g., based on respirator APFs)	+ implement hierarchy of controls, monitoring to validate respirator protection factor selection

**Upper Tail Statistic decision = 90th, 95th, 99th percentile



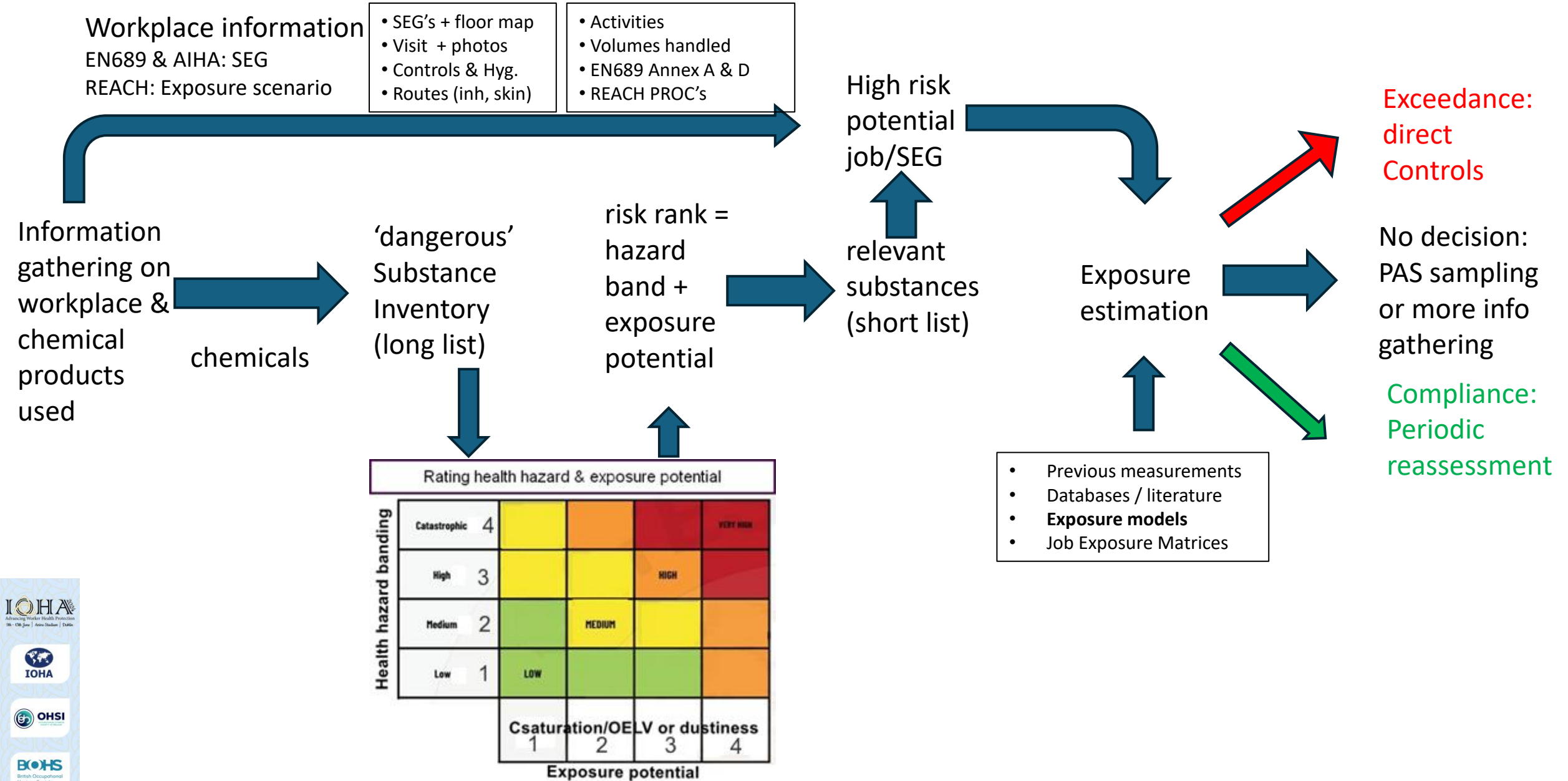
AIHA 4th edition 2015

N=3: $fr(OELV)=0.10 * OELV$
 N=4: $fr(OELV)=0.15 * OELV$
 N=5: $fr(OELV)=0.20 * OELV$



EN-689 2018

Generic basic characterisation



Constitution of Similar Exposure Groups (SEGs)

- Based on the substances and the workplace factors in the Basic Characterisation, exposure profiles are constructed.
 - AIHA 4th edition 2015
 - EN-689 2018
- SEG's are groups of workers with comparable exposure profiles; also in frequency and duration.
- Finetuning possible after exposure modelling.
- Permits PAS sampling on a limited number of workers in the SEG.
- Requires occupational hygiene expertise.

Summary

Take home messages

- A basic characterisation is a systematic evaluation of the product flow
=> "open the black-box":
 - process-flow through a plant, department, workplace
 - hazards of substances
 - emission of substances: workplace factors – chemical-physical properties
 - normal production, cleaning, maintenance, specific conditions
 - exposed workforce (which staff is doing what, where, when)
 - historic data: exposures, results of health surveillance
 - professional experience and insight of the appraiser / industrial hygienist
- The identification of a similar exposure group (SEG) is the result of the basic characterisation (*and not the start of sampling-strategy*).
- SEG: workers encountering similar risk factors (next topic)