



manufacturing
Safety Alliance of BC

Air Quality

Ask Me Anything!

Format of this webinar

- Air Quality Basics
- Regulatory Overview
- Ask me anything!



What first comes to mind when you think
air quality?

DEFINITIONS

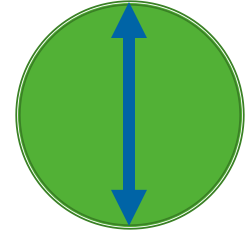


Aerosols

Liquid which has
atomized into droplets
in the air

- Ex: Paint or pesticide spraying

Fog (1-50 μm)
Mist (50- 100 μm)
Drizzle (100 – 400 μm)
Rain (400 – 5000 μm)

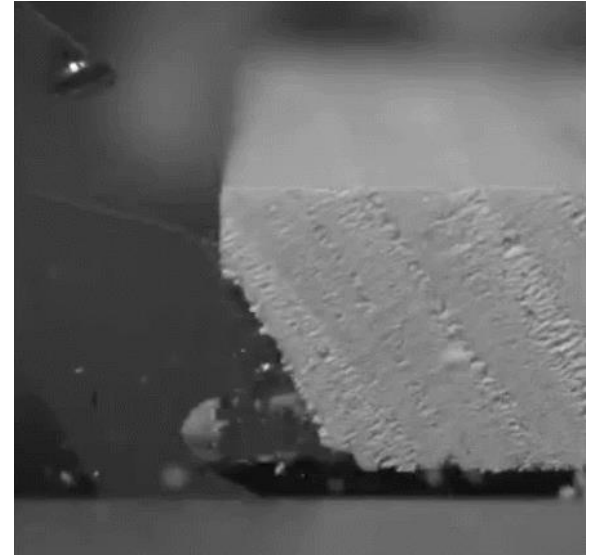
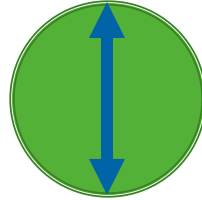


Dusts

Irregular shaped particles generated by some type of disintegration process, which creates particles in smaller and smaller sizes

Grinding
Sanding
Sawing

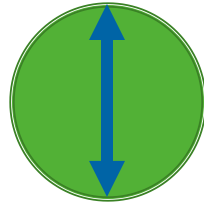
0.5-500 μm



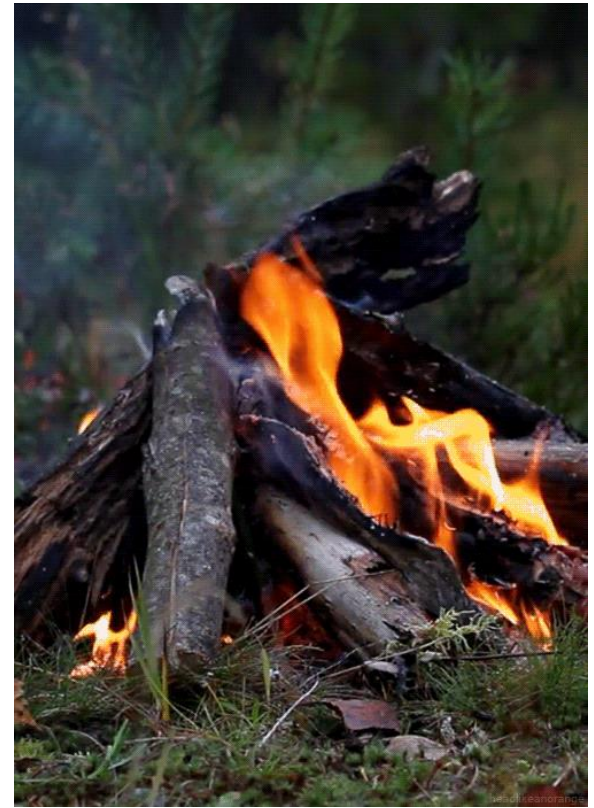
Ex: Wood Dust,

Smoke

Spherical particles
produced by the
combustion of
carbonaceous materials



0.01-1 μm

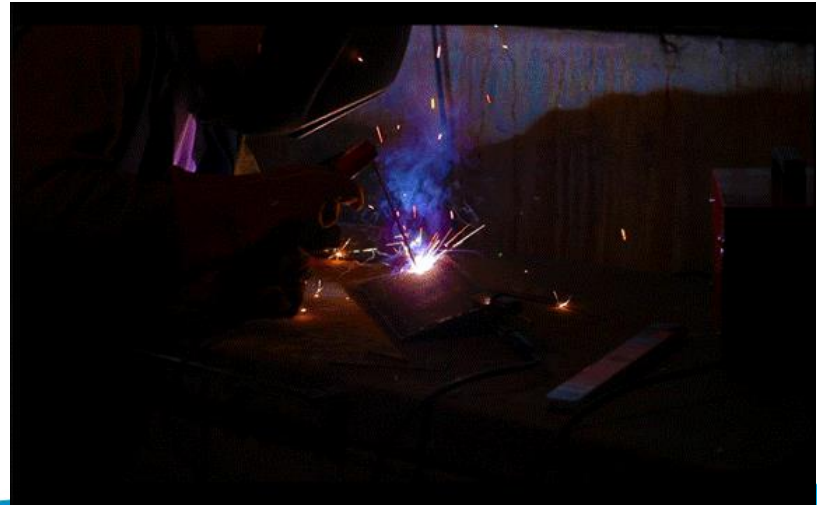
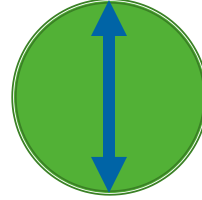


Ex: Wood Fire

Fumes

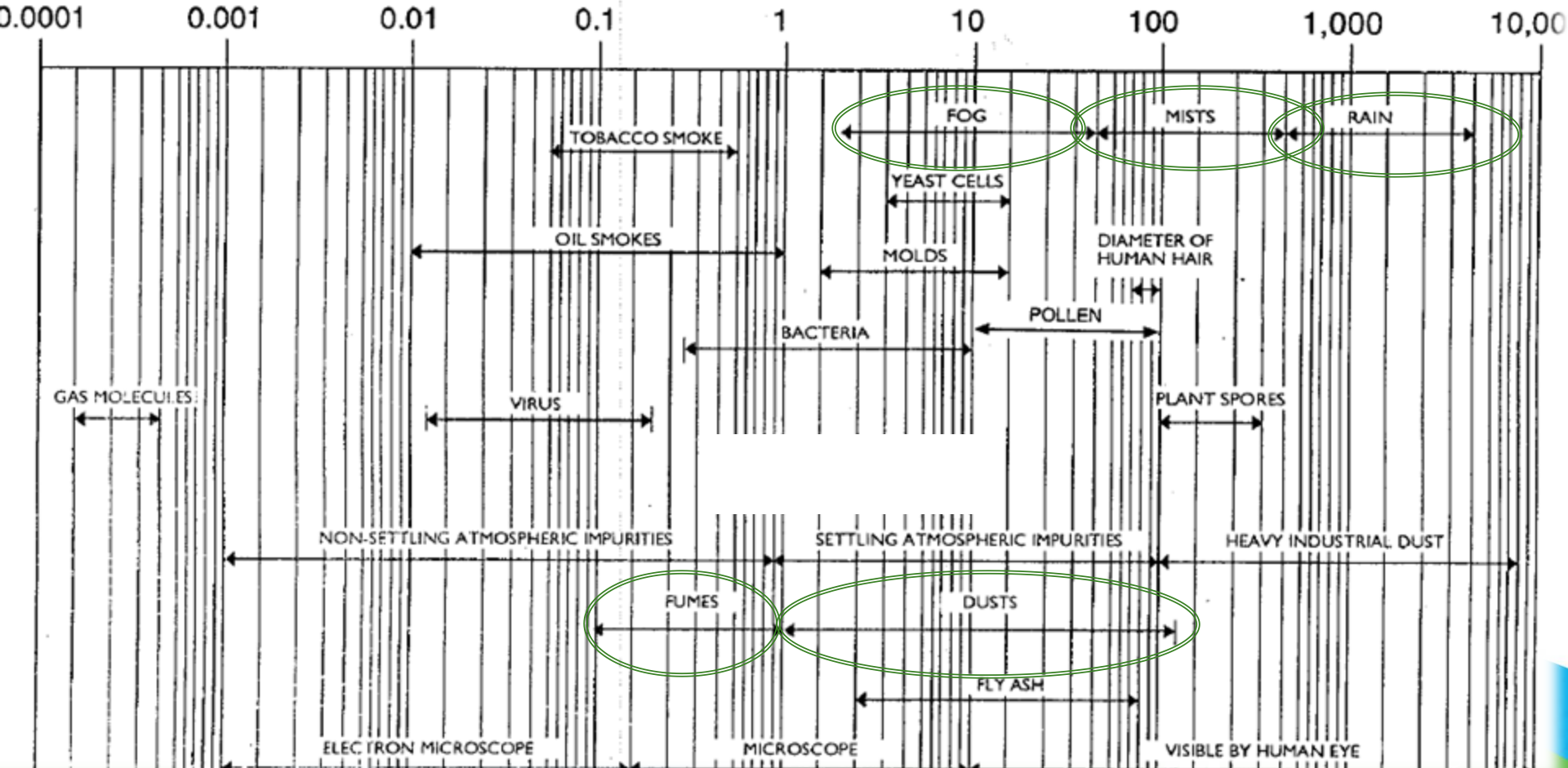
Particles created
after the combustion
of non-carbonaceous
materials like metals

0.01-5 μm



Ex: Welding Fumes

Particle Diameter (Micrometers)



Total Vs. Thoracic Vs. Respirable

Total Fraction (or the inhalable fraction)

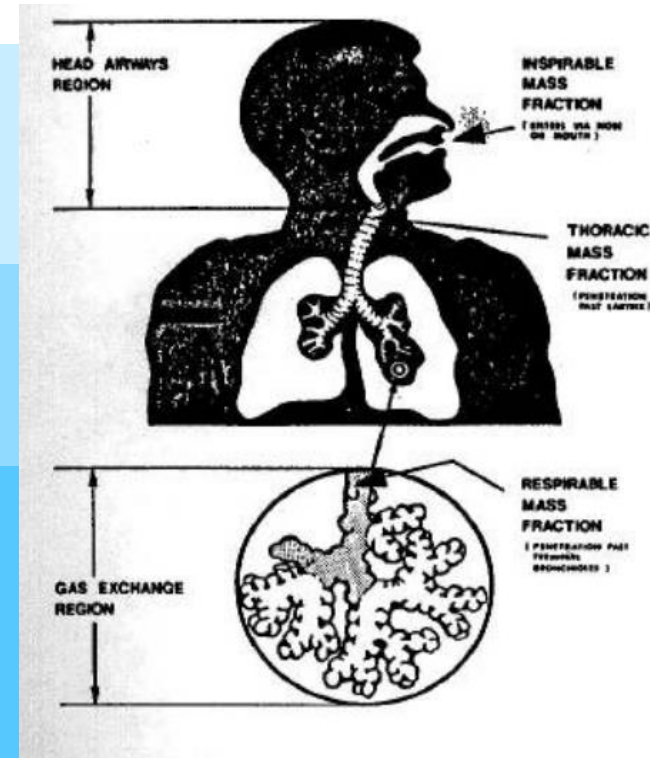
- 0-100 μm

Thoracic Fraction

- 0-25 μm

Respirable Fraction

- 0-10 μm





Toxicological Data

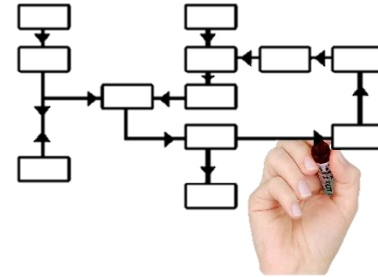


Safety Data Sheets, WHMIS

Surveillance



Understanding Production Processes



Compare with the regulations

5.48 Exposure limits

Except as otherwise determined by the Board, the employer must ensure that no worker is exposed to a substance that exceeds the ceiling limit, short-term exposure limit, or 8-hour TWA limit prescribed by ACGIH.

Table of Exposure Limits

What is it?

It is a document, which lists chemicals, along with the acceptable worker exposure limits

Where can I find it?

On the WorkSafeBC website

Available for download (PDF)

Table of exposure limits for chemical and biological substances

Updated 2017/06/01

Occupational Health and Safety Regulation section 5.48 provides established exposure limits for a worker's exposure to hazardous chemical substances. Generally, these exposure limits are established according to the Threshold Limit Values ("TLVs") adopted by the American Conference of Governmental Industrial Hygienists ("ACGIH"). WorkSafeBC (the Workers' Compensation Board) has the authority to make exceptions and adopt occupational exposure limits for specific chemical substances that are not consistent with the TLVs established by the ACGIH. Policy R5.48-1 sets out those exceptions. The below Table of Exposure Limits for Chemical and Biological Substances shows all occupational exposure limits for British Columbia workplaces, i.e., adopted TLVs and exposure limits developed by exception.

WorkSafeBC publishes this exposure limit table in accordance with its mandate under the *Workers Compensation Act* to provide information and promote public awareness. This table does not represent the official exposure limits and designations. WorkSafeBC does not warrant the accuracy or the completeness of the information in this table, and none of its board of directors, employees or agents shall be liable to any person for any loss or damage of any nature arising from this version.

Where WorkSafeBC has adopted a TLV or ACGIH designation, the official exposure limit is in the ACGIH TLV documentation. Where an exposure limit is adopted by exception, the official exposure limit is found in Policy R5.48-1. The official source of the International Agency for Research on Cancer (IARC) carcinogenicity designations is the IARC set of monographs.

Explanation of table entries

General notes regarding the Table entries.

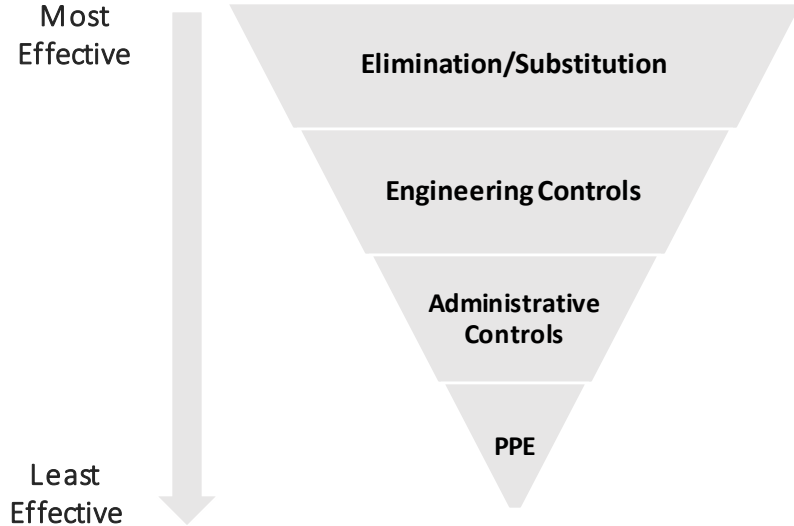
- Chemicals and other substances are listed in alphabetical order. Numerals and prefixes, for example, 1,3-, tert-, o-, sec-, cis-, are disregarded in determining alphabetical order.
- In square brackets is the Chemical Abstracts Services (CAS) registry number. This is a unique identification number

Table of exposure limits for chemical and biological substances

Updated 2017/06/01

Substance [CAS No.]	TWA	STEL/Ceiling	Notations
Bromochloromethane [74-97-5]	200 ppm	250 ppm	
Bromoform [75-25-2] Revised 2009	0.5 ppm		
1-Bromopropane [106-94-5] Revised 2005	10 ppm		R
1,3-Butadiene [106-99-0]	2 ppm		A2, 1
Butane, isomers:			
n-Butane [106-97-8]	600 ppm	750 ppm	
Isobutane [75-28-5]			(I)
n-Butanol [71-36-3]	15 ppm	C 30 ppm	
sec-Butanol [78-92-2]	100 ppm		
tert-Butanol [75-65-0]	100 ppm		
Butenes, all isomers, including Isobutene [106-98-9; 107-01-7; 590-18-1; 624-64-6; 25167-67-3; 115-11-7]			(I)
2-Butoxyethanol (EGBE) [111-76-2] Revised 2003	20 ppm		
2-Butoxyethyl acetate [112-07-2] Revised 2003	20 ppm		
n-Butyl acetate [123-86-4]	20 ppm		
sec-Butyl acetate [105-46-4]	200 ppm		
tert-Butyl acetate [540-88-5]	200 ppm		
n-Butyl acrylate [141-32-2]	2 ppm		S(D)
n-Butylamine [109-73-9]		C 5 ppm	Skin
Butylated hydroxytoluene (BHT), Inhalable, (2,6-Di-tert-butyl-p-cresol) [128-37-0]	2 mg/m ³ (V)		
tert-Butyl chromate, as CrO ₃ [1189-85-1]		C 0.1 mg/m ³	Skin
n-Butyl glycidyl ether (BGE) [2426-08-6] Revised 2005	3 ppm		Skin; S(D); P

Controls



5.55 Type of controls

- (1) If there is a risk to a worker from exposure to a hazardous substance by any route of exposure, the employer must eliminate the exposure, or otherwise control it below harmful levels and below the applicable exposure limit established under section 5.48 by
- (a) substitution,
 - (b) engineering control,
 - (c) administrative control, or
 - (d) personal protective equipment.

Ask me anything!