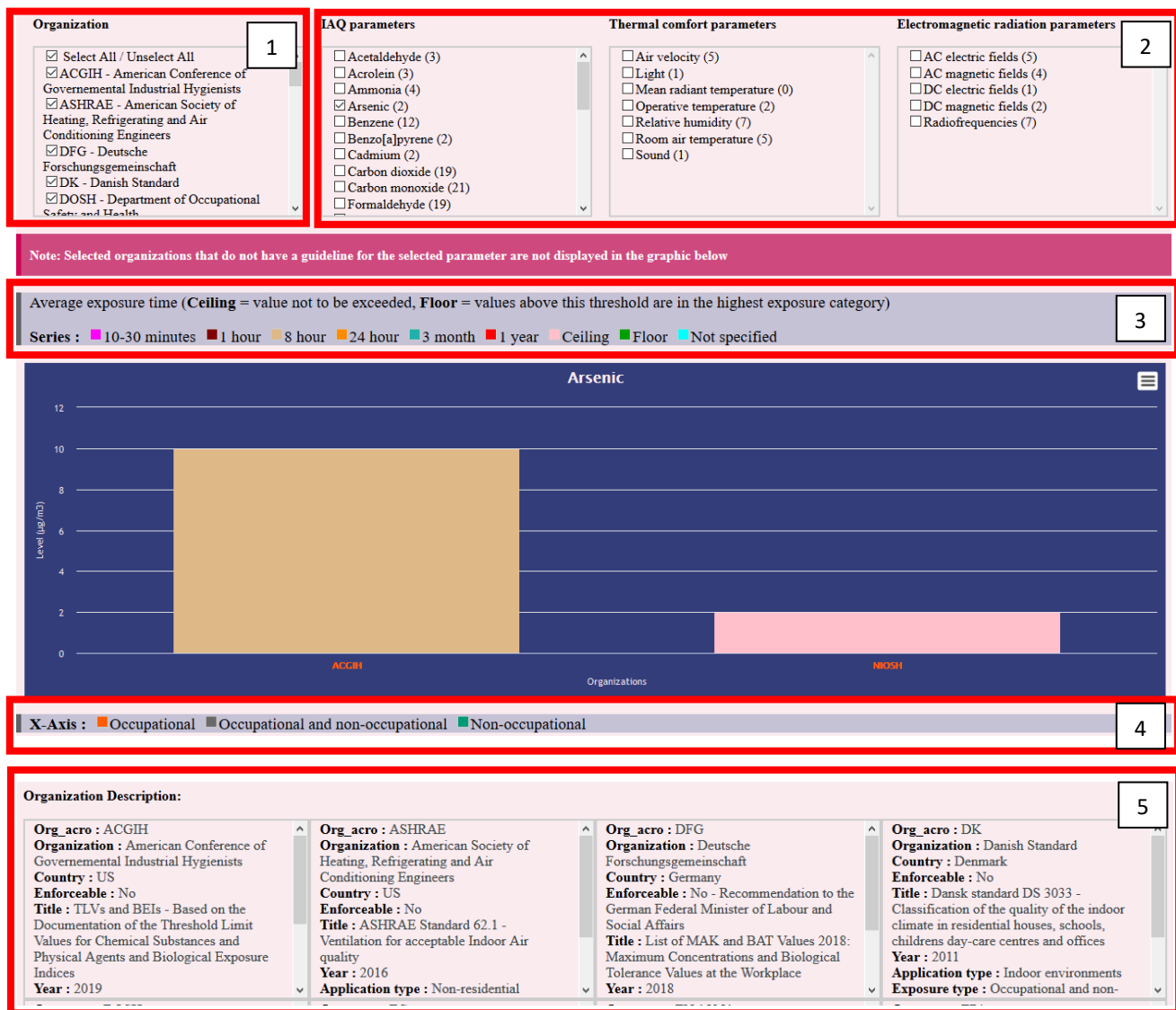


# HOW TO USE THE IEQ DATABASE

- 1) Select the organizations of interest, use **Select All / Unselect All** as needed.
- 2) Select one IEQ parameter of interest among the three boxes: **IAQ parameters**, **Thermal comfort parameters**, and **electromagnetic radiation parameters**. The number in parenthesis indicates the number of organizations that have a guideline for a specific parameter e.g. for arsenic two organizations provide guidelines.
- 3) The color of the bar chart indicates the average exposure time associated with this guideline, as depicted in the first grey box.
- 4) The color of the organization names indicates if this organization is covering occupational exposures, occupational and non-occupational exposures or non-occupational exposure.
- 5) This section presents important information characterizing the selected organizations: a) acronym; b) full name; c) country; d) whether the guidelines are enforceable or not; e) title of reference document; f) publication year of reference document; g) application type (e.g. indoor/outdoor, home/offices); h) exposure type (e.g. occupation or non occupational); i) web reference link; j) whether the reference document is open access or not, with link if open access



- 6) This section presents a brief description of the parameter: explanation of the nature of the parameter/substance; main sources (natural and/or man-made); main impacts on human health; references.
- 7) This section allows users to visualize the guideline values in a tabular format. a) Select your organization of interest; b) Select your parameters from interest from the 3 parameters boxes.
- 8) World map: this section allows to visualize reference levels for national organizations on a color scale world map. a) Select the countries of interest in the box **Country** (here All in this example). b) Select one IEQ parameter in three parameter boxes (here carbon monoxide in this example). c) Select the average exposure time (here 8 hour in this example). The map will then display the reference levels according to the selected parameters in a green color scale. Refer to the color legend for matching the color intensity with the reference level (the units are indicated in the title, here ppm in this example).

**Parameter Description:**

Arsenic is a naturally occurring element present in the earth's crust that can be found in the air, water, food, and soil. It often combines with natural elements to form inorganic arsenic compounds in the environment. In animals and plants, arsenic combines with carbon and hydrogen to form organic arsenic compounds. Arsenic is used in copper chromated arsenate to pressure-treat lumber. Although it is banned for residential applications in the US, it is still in use for industrial applications.

Breathing inorganic arsenic can provoke sore throats and irritated lungs. Ingestion of a small amount can cause nausea, vomiting, abnormal heart rate, and damage to blood vessels. It causes death at higher levels. Skin contact can cause redness and swelling. It can increase the risk of skin cancer and liver, bladder, and lung cancers. Arsenic can cross into the placenta and is found at low levels in breast milk.

References:

ATSDR (2007) Arsenic. Available at: [https://www.epa.gov/sites/production/files/2014-03/documents/arsenic\\_toxfaqs\\_3v.pdf](https://www.epa.gov/sites/production/files/2014-03/documents/arsenic_toxfaqs_3v.pdf)

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**Organization** DOSH

**IAQ parameters**

- ☒ Acetaldehyde (3)
- ☒ Acrolein (3)
- ☒ Ammonia (4)
- ☒ Arsenic (2)
- ☒ Benzene (12)
- ☒ Benzo[a]pyrene (2)
- ☒ Cadmium (2)
- ☒ Carbon dioxide (19)
- ☒ Carbon monoxide (21)
- ☒ Formaldehyde (19)

**Thermal comfort parameters**

- ☒ Air velocity (5)
- ☒ Light (1)
- ☒ Mean radiant temperature (0)
- ☒ Operative temperature (2)
- ☒ Relative humidity (7)
- ☒ Room air temperature (5)
- ☒ Sound (1)

**Electromagnetic radiation parameters**

- ☒ AC electric fields (5)
- ☒ AC magnetic fields (4)
- ☒ DC electric fields (1)
- ☒ DC magnetic fields (2)
- ☒ Radiofrequencies (7)

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Parameter	Symbol	Level	Unit	Average Time	Note
Carbon dioxide	CO <sub>2</sub>	1000.0	ppm	Ceiling	
Carbon monoxide	CO	10.0	ppm	8 hours	
Ozone	O <sub>3</sub>	50.0	ppb	8 hours	
Total suspended particles	TSP	150.0	µg/m <sup>3</sup>	8 hours	Respirable particulates
Formaldehyde	HCHO	100.0	ppb	8 hours	
Total volatile organic compounds	TVOC	3000.0	ppb	8 hours	
Total bacterial counts	TBC	500.0	cfu/m <sup>3</sup>		
Total fungal counts	TFC	1000.0	cfu/m <sup>3</sup>		

Parameter	Symbol	Level	Unit	Average Time	Note
Room air temperature	Ta	23.0	°C	Floor	
Room air temperature	Ta	26.0	°C	Ceiling	
Relative humidity	RH	40.0	%	Floor	
Relative humidity	RH	70.0	%	Ceiling	

Parameter	Symbol	Level	Unit	Average Time	Note

**World Map**

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**Country**

- ☒ Select All / Unselect All
- ☒ Australia - SWA
- ☒ Canada - HealthCAN
- ☒ China - SEPA
- ☒ Denmark - DK
- ☒ Finland - FiSIAQ
- ☒ Hong Kong - HKSAR
- ☒ Japan - MOE
- ☒ Kuwait - KEPA
- ☒ Malaysia - DOSH

**IAQ parameters**

- ☐ Acetaldehyde (3)
- ☐ Acrolein (3)
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- ☐ Air velocity (5)
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- ☐ Relative humidity (7)
- ☐ Room air temperature (5)
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**Electromagnetic radiation parameters**

- ☐ AC electric fields (5)
- ☐ AC magnetic fields (4)
- ☐ DC electric fields (1)
- ☐ DC magnetic fields (2)
- ☐ Radiofrequencies (7)

☐ 10-30 minutes 
 ☐ 1 Hour 
 ☒ 8 Hour 
 ☐ 24 Hour 
 ☐ 3 Month 
 ☐ 1 Year 
 ☐ Ceiling 
 ☐ Floor

Carbon monoxide (ppm)

0 10 20 30 40