

Air Quality Monitor Cheatsheet

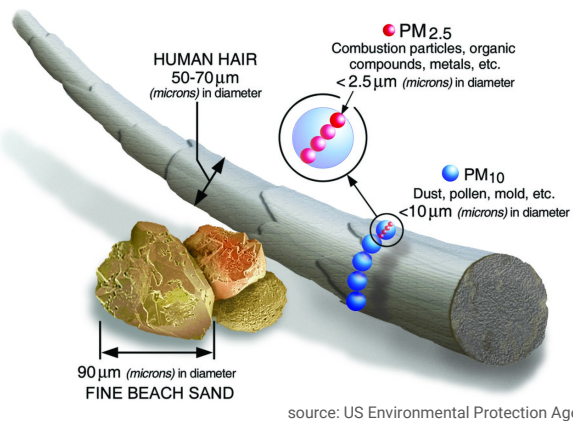
Hey! Those numbers on your air monitor might seem like a cryptic code, but they can actually unlock a wealth of information about the air you breathe.

This quick guide will help you decode those numbers and understand what they mean for your health.

Particulate Matter (PM)

Key Take-Aways:

- **Small particles** in the air, especially below 2.5 μm (0.0025 mm) are dangerous and can cause all kinds of **serious long term health consequences**. In heavy polluted countries, people can lose up to ten years of their life expectancy due to pollution.
- There are conflicting indexes and colors used across different countries. Make sure you know the PM2.5 value in $\mu\text{g}/\text{m}^3$.
- **There are no safe levels of PM**. It should be as low as possible. The WHO recommends below 5 $\mu\text{g}/\text{m}^3$ annual average.
- Use **HEPA based** air purifiers indoors or **N95** masks outdoors to reduce your exposure.



World Health Organisation:
Keep annual PM2.5 below 5 $\mu\text{g}/\text{m}^3$
The closest to zero the better.



Air Quality Life Index (AQLI). Find out how much life expectancy you lose due to PM air pollution.

Carbon Dioxide (CO2)

Key Take-Aways:

- **Carbon dioxide (CO2)** is a gas in our atmosphere and **outside at around 430ppm**.
- When **we breathe, we exhale CO2** and thus it can increase in occupied rooms quite quickly.
- High levels of CO2 can cause **headaches** and also **impact our brain's performance**.
- Most CO2 sensors do an **automatic baseline calibration (ABC)**. For these to work correctly, the room needs to be **ventilated frequently**, e.g. once a week. If this does not happen, these sensors might show too low readings.
- Make sure your CO2 sensor used NDIR technology, as this type of sensor measures CO2 directly and accurately.
- To **reduce CO2**, you can **open windows** or increase the fresh air rate of your HVAC system.
- Please note that normal wall-based A/C systems do not improve CO2 as they **only circulate** the indoor air.

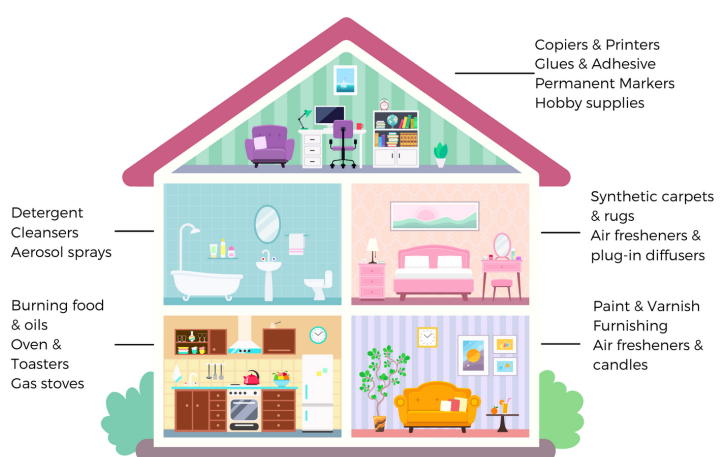
- Excellent**
< 700ppm
- Acceptable**
700 - 1000 ppm
- Not Ideal**
1000 - 1333 ppm
- To be avoided**
> 1666 ppm

VOCs (Volatile Organic Compounds)

Key Take-Aways:

- There are **more than 10,000 VOCs in the air**. Some **extremely harmful**, some **harmless**. Both trigger VOCs values. So it is very important to know the specific VOC to make any judgement.
- Old VOC sensors in some air monitors were tested in special lab settings using just one type of alcohol (ethanol). This doesn't reflect real-world air, where many different VOCs exist. So, the **numbers these sensors show might not tell you exactly how much harmful VOCs are actually in your air**.
- More modern sensors now focus on the **VOCs change** in e.g. the last 24h rather than absolute concentrations.
- If you **observe spikes** over the day and you can **identify the source**, you can try and **reduce** these chemicals.

SOURCE OF VOC IN YOUR HOUSE



More details on our blog about VOCs:
<https://www.airgradient.com/blog/tvoc-explainer/>