

# KNOW YOUR PRINT

3D printers emit a wide range of particles and volatile organic compounds (VOCs) during use. Individual filament emissivity varies. This chart displays general emission data and associated health risks gathered using ANSI/CAN/UL 2904 for a variety of commonly used filaments and additives<sup>1</sup>.

## How can you reduce exposure to 3D printer emissions?

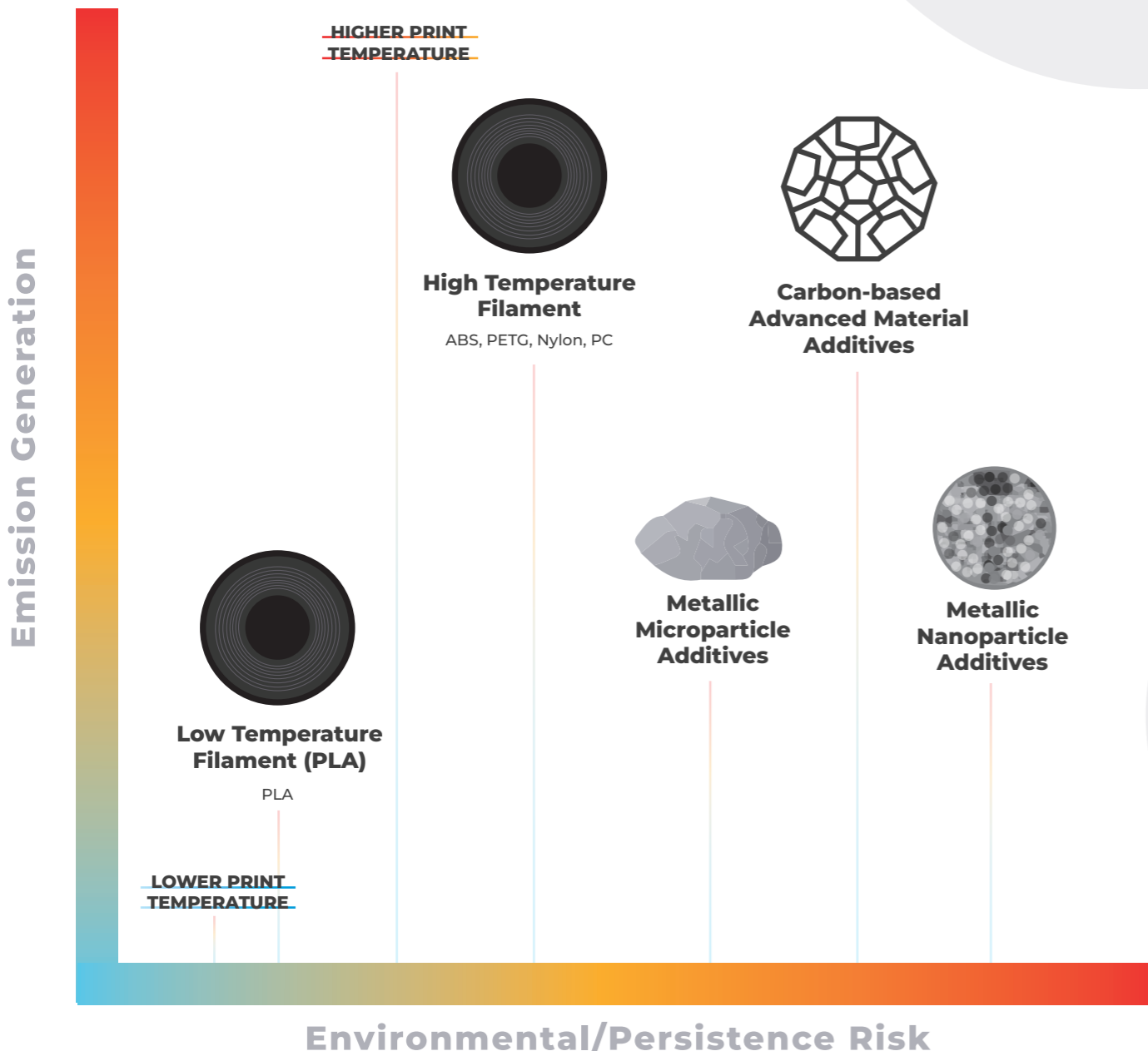
When possible, print at **lower temperatures** within the usable range

**Local ventilation and filtration** are proven strategies for reducing exposure to 3D printer emissions

**Limiting exposure time** will reduce associated health risks; consider operating printers away from personnel

Fume smells are related to VOCs - but **particles may not have any detectable scent**

Reduce risk by **1) decreasing printing temperatures when possible** and **2) taking extra precautions when using filaments incorporating additives**



<sup>1</sup>Hill WC, Seitz DW, Hull MS, Ballentine ML, Kennedy AJ. Additives influence 3D printer emission profiles: Implications for working safely with polymer filament composites. *Indoor Air*. 2022; 32:e13130. doi: 10.1111/ina.13130