Supporting Information for:

Chemical Emissions from Cured and Uncured 3D-Printed Ventilator Patient Circuit Medical Parts

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Contents:

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Figure S1: 3D-printed parts used in the second round of measurements. Each photo shows 2 oxygen enrichment ports and 2 flow splitters made from different resin and cure types. The photo on the left shows parts printed using the standard Clear resin. Starting from the top left part and going around clockwise, the captions read: Y-connector, clear resin uncured; Y-connector, clear resin, uncured; oxygen enrichment port, clear resin, uncured; oxygen enrichment port, clear resin, uncured; oxygen enrichment port, clear resin, 30 min cure @ 60 C; oxygen enrichment port, clear resin, 30 min cure @ 60 C; Y-connector, clear resin, 30 min cure @ 60 C; Y-connector, clear resin, 30 min cure @ 60 C. The photo on the right shows parts printed using the Surgical Guide resin. From the top left part going clockwise the captions read: Y-connector, surgical guide, uncured; Y-connector, surgical guide, uncured; oxygen enrichment port, surgical guide, uncured; oxygen enrichment port, surgical guide, uncured; oxygen enrichment port, surgical guide, 30 min cure @ 60 C; oxygen enrichment port, surgical guide, 30 min cure @ 60 C; Y-connector, surgical guide, 30 min cure @ 60 C; Y-connector, surgical guide, 30 min cure @ 60 C. The photos were taken by the authors.

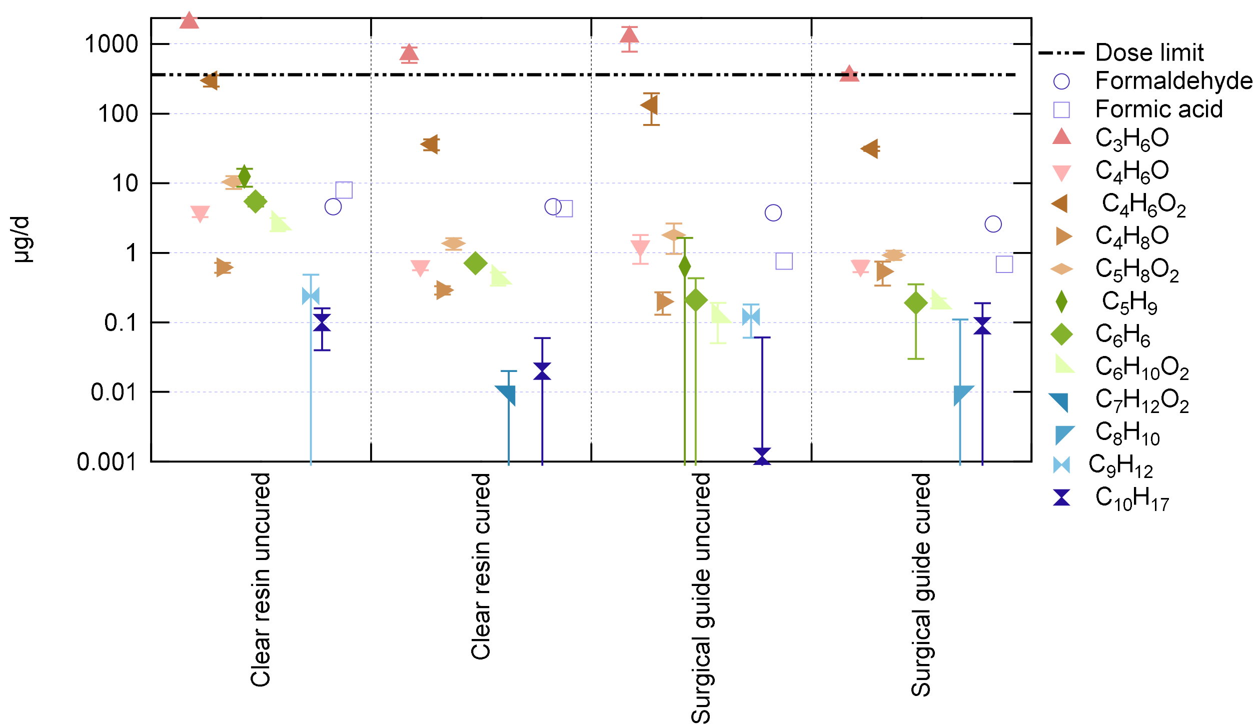

Figure S2: Emission factors for 3D printed oxygen enrichment ports in units of micrograms per day (μg/d). Emissions are plotted with a dose limit of 360 μg/d as recommended by ISO 18562-3:2017.

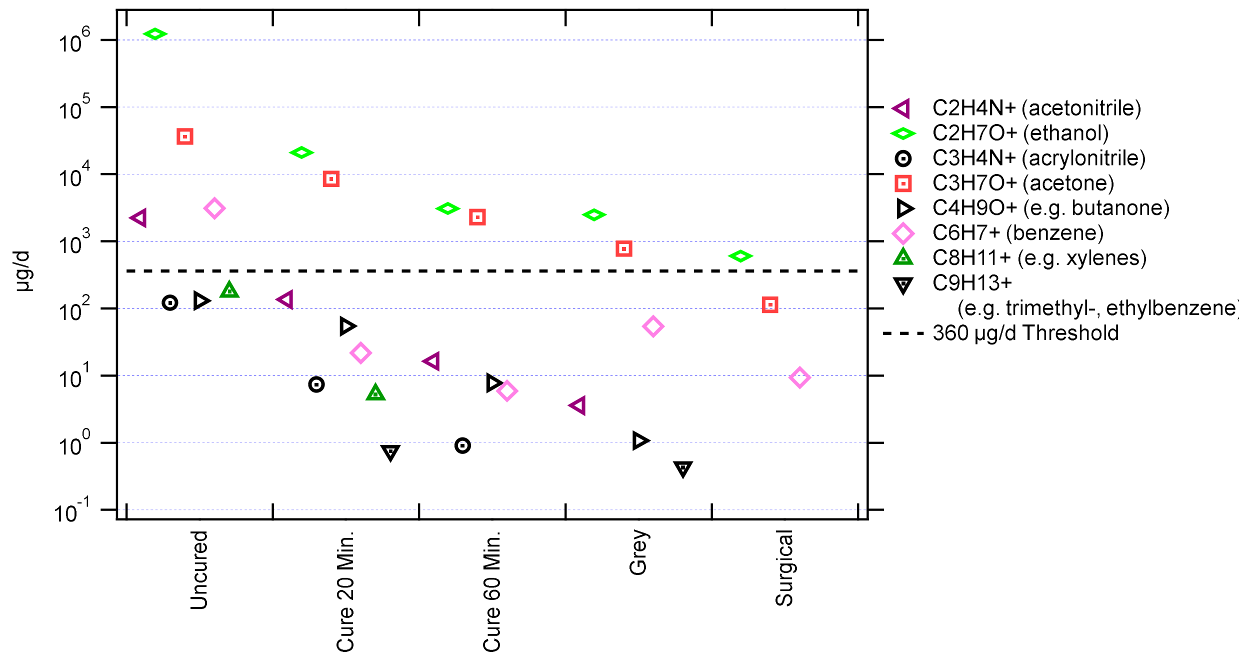

Figure S3: Measurements of additional resins and curing types, including an uncured clear resin part, a clear resin part with shorter 20 minute and 60 minute curing times, an alternative grey resin, and the surgical guide resin. The grey resin and surgical guide resin were uncured.

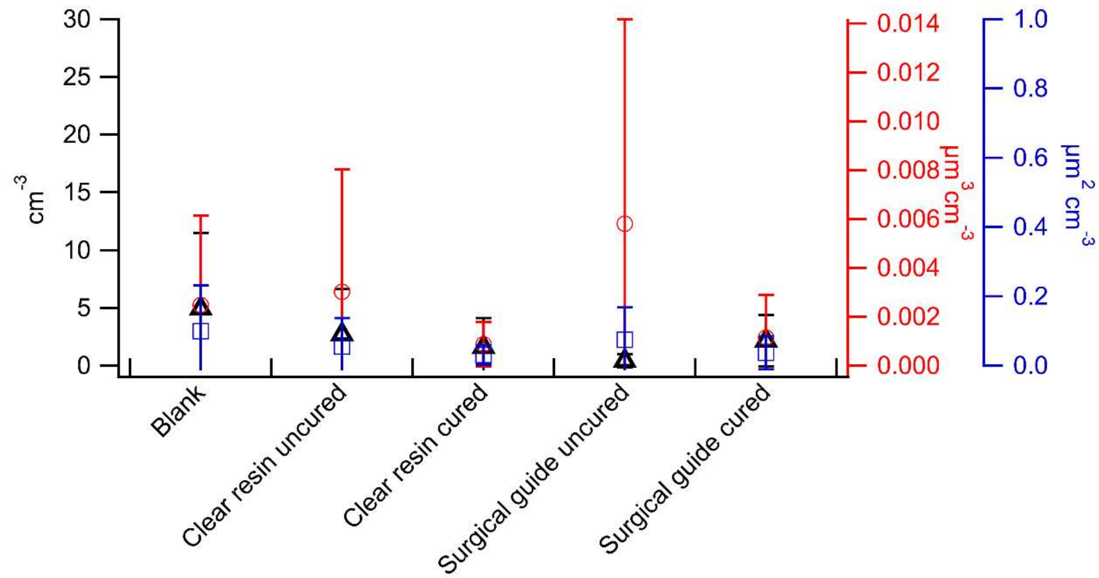

Figure S4: SMPS-measurements of particle number concentration, volume, and surface area of 3D printed parts. All are at or less than the value of the analytical blank.

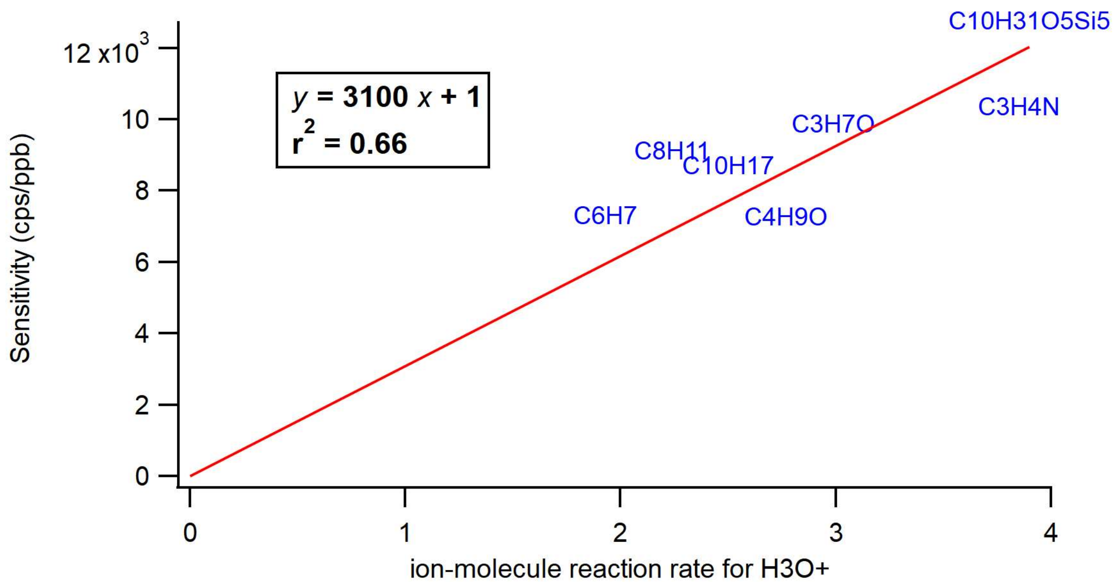

Figure S5: Relationship between explicitly calibrated compounds used in this study and the ion-molecule kinetic capture rate for H3O+ and the target neutral analyte. A linear least squares regression was used to determine the linear relationship shown.

Table S1: A list of the ions presented in the main paper, with assumed and possible structures from previous PTR-MS literature.

Formula	**Detected ion with H^+ (m/z)**	**Assumed primary structure**	**Other possible structures**
C3H3N	54	Acrylonitrile	
C3H6O	59	Acetone	Propanal
C4H6O	71	Methacrolein	Methyl vinyl ketone, 2-butenal,
C4H6O2	87	Methyl acrylate	gamma-butyrolactone, cyclopropanecarboxylic acid, 2,3-butanedione
C4H8O	73	Butanal	2-butanone, tetrahydrofuran

C5H8O2	101	methyl methacrylate	
C5H9	69	Cyclopentene	isoprene
C6H6	79	Benzene	
C6H10O2	115	ethyl methacrylate	
C7H12O2	129	propyl methacrylate	
C8H10	107	C_8 aromatics	
C9H12	121	C_9 aromatics	
C10H17	137	monoterpenes	