Supporting Information

# Characterizing the distribution of aromatic amines between polyester, cotton, and wool textiles and air

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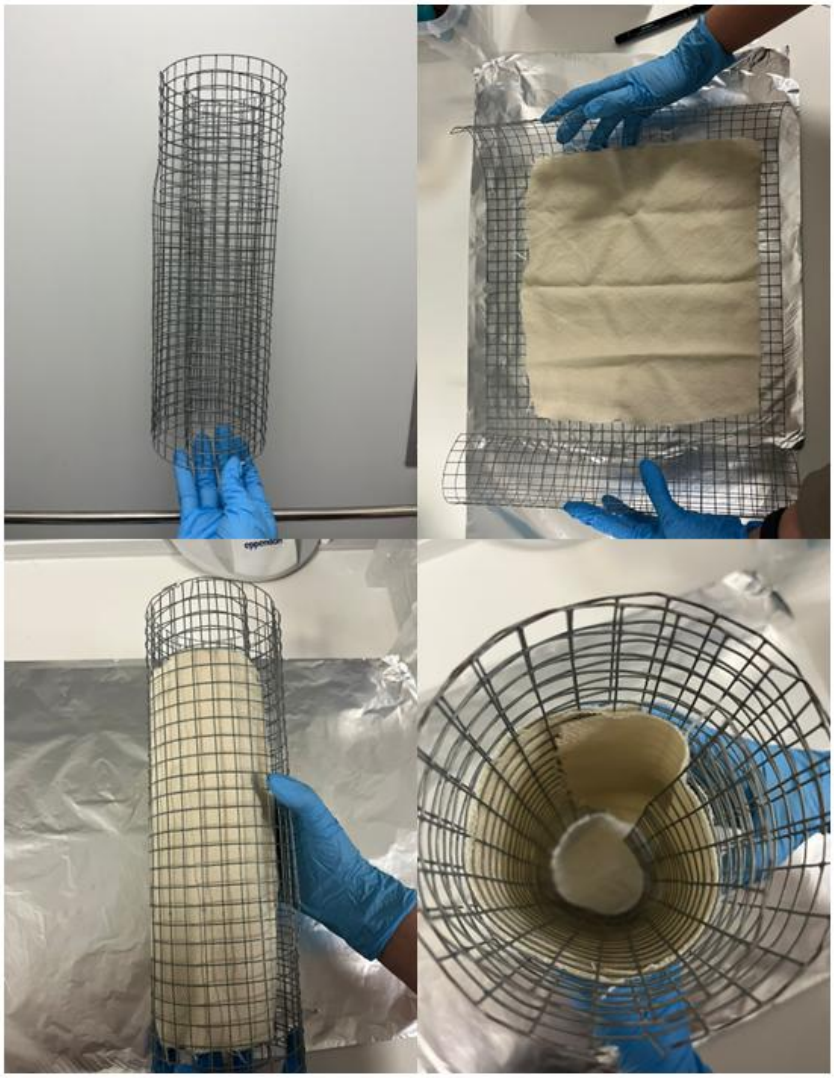

*Figure S1. Details of the chamber set-up with the textile wrapped around the mesh*

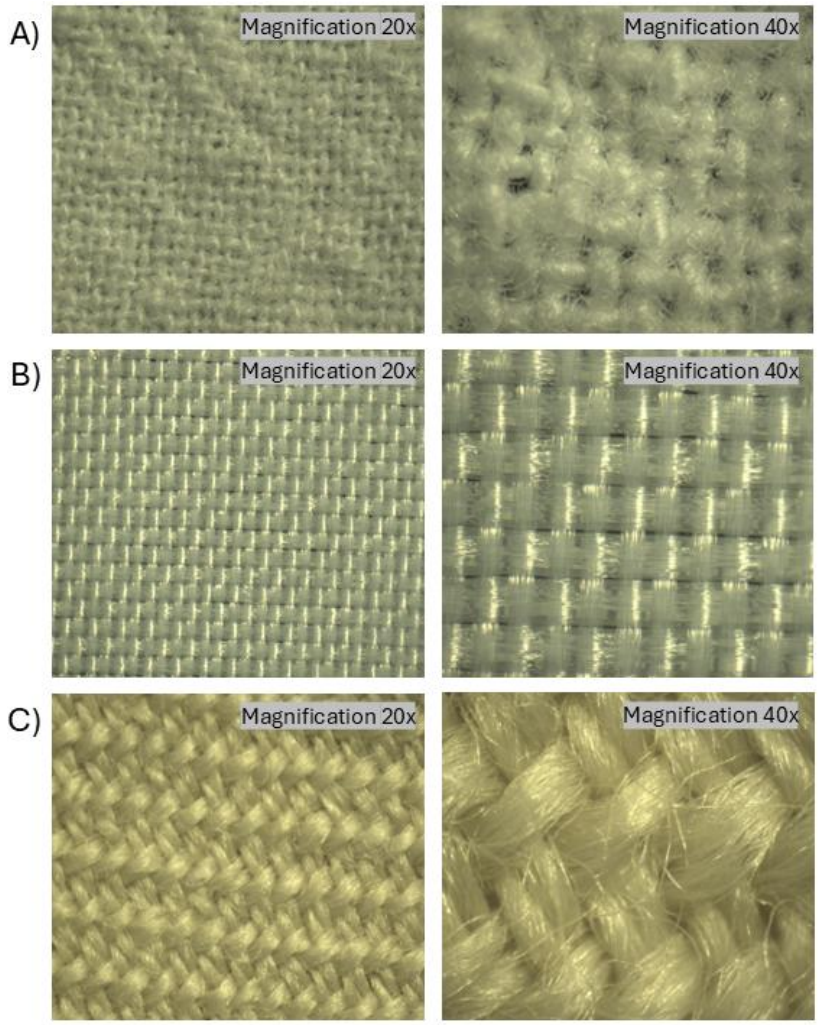


*Figure S2. Microscopic structure of 3 types of textiles; A) Cotton, B) Polyester and C) Wool (Zoom Stereo Microscope; Olympus-SZ61, Tokyo, Japan).*

## Text S1. Details of textile preparation

*Materials.* Three types of fabrics were procured for the study:

Plain weave Cotton: Sourced from Classic Fabrics (classicfabrics.nl), this fabric was white

Diagonal Twill Wool: Also from Classic Fabrics, this undyed white fabric

Polyester: Purchased from DůmLátek.cz, this fabric was white

*Preparation.* The fabrics were cut using the textile cutting board and textile cutter knife into sections measuring 27 cm by 8 cm to test different extraction procedures.

*Cleaning and Drying Procedure.* The cleaning process involved using an overhead tumbler (Fig. S2), which functioned similarly to a washing machine. The fabrics were added to a washing cycle with water only (no detergent) for two hours, simulating a standard washing procedure to remove any surface contaminants. This cleaning protocol was uniformly applied to all three types of textiles. The textiles were transferred onto aluminum foil and placed in an oven to dry. Once dried, the fabrics were wrapped in aluminum foil until further use.

*Figure S3. Overhead Tumbler for textile washing*

*Table S1. Textile properties*

| Textile type | Density (g/cm$^3$) | Thickness (cm) | Length (cm) | Mass (g) | Width (cm) |
|---|---|---|---|---|---|
| Wool | 0.3 | 0.11 | 300 | 1221 | 148 |
| Cotton | 0.2 | 0.09 | 300 | 630 | 140 |
| Polyester | 0.1 | 0.05 | 300 | 258 | 148 |

*Table S2. AA compounds and identifiers (CAS number, InChIKey, molecular formula)*

| Compound | Abbre-viation | CAS RN | InChIKey | Molecular Formula |
|---|---|---|---|---|
| Aniline | ANI | 62-53-3 | PAYRUJLWNCNPSJ-UHFFFAOYSA-N | C6H7N |
| 2-Aminopyridine | 2APY | 504-29-0 | ICSNLGPSRYBMBD-UHFFFAOYSA-N | C5H6N2 |
| o-Toluidine | OTLD | 95-53-4 | RNVCVTLRINQCPJ-UHFFFAOYSA-N | C7H9N |
| o-Anisidine | OANI | 90-04-0 | VMPITZXILSNTON-UHFFFAOYSA-N | C7H9NO |
| 4-Chloraniline | 4CHA | 106-47-8 | QSNSCYSYFYORTR-UHFFFAOYSA-N | C6H6ClN |
| p-Cresidine | PCRE | 120-71-8 | WXWCDTXEKCVRRO-UHFFFAOYSA-N | C8H11NO |
| 3-Chloro-o-Toluidine | 3CHOT | 87-60-5 | ZUVPLKVDZNDZCM-UHFFFAOYSA-N | C7H8ClN |
| 4-Chloro-o-Toluidine | 4CHOT | 95-69-2 | CXNVOWPRHWWCQR-UHFFFAOYSA-N | C7H8ClN |
| 2-Amino-4-nitrotoluene | 2A4NT | 99-55-8 | DSBIJCMXAIKKKI-UHFFFAOYSA-N | C7H8N2O2 |
| Benzidine | BNZD | 92-87-5 | HFACYLZERDEVSX-UHFFFAOYSA-N | C12H12N2 |
| o-Aminoazotoluene | OAAT | 97-56-3 | PFRYFZZSECNQOL-UHFFFAOYSA-N | C14H15N3 |
| 1-Naphthylamine | 1NAPA | 134-32-7 | RUFPHBVGCFYCNW-UHFFFAOYSA-N | C10H9N |
| 2-Naphthylamine | 2NAPA | 91-59-8 | JBIJLHTVPXGSAM-UHFFFAOYSA-N | C10H9N |
| p-Aminoazobenzene | PAAZB | 60-09-3 | QPQKUYVSJWQSDY-UHFFFAOYSA-N | C12H11N3 |
| 3,3’-Dichlorobenzidine | 33DCB | 91-94-1 | HUWXDEQWWKGHRV-UHFFFAOYSA-N | C12H10Cl2N2 |
| o-Dianisidine | ODAN | 119-90-4 | JRBJSXQPQWSCCF-UHFFFAOYSA-N | C14H16N2O2 |
| 4,4'-Methylenebis(2-chloroaniline) | MBOCA | 101-14-4 | IBOFVQJTBBUKMU-UHFFFAOYSA-N | C13H12Cl2N2 |
| 2-Aminobiphenyl | 2AMB | 90-41-5 | TWBPWBPGNQWFSJ-UHFFFAOYSA-N | C12H11N |
| 4-Aminobiphenyl | 4AMB | 92-67-1 | DMVOXQPQNTYEKQ-UHFFFAOYSA-N | C12H11N |

## Text S2. Dosing procedure of aromatic amines to textiles

To ensure homogeneously spiked solutions on textiles, homogeneity tests were performed using three different dosing procedures prior to conducting chamber tests.

*Dosing with Tray.* The first method involved dosing with a tray (Figure S3). The tray was lined with aluminum foil, and textiles were placed in it. A dosing solution was prepared, with 1 ml of dosing standards added to acetone and diluted to ensure a sufficient volume for uniform application. Acetone was chosen as the solvent due to its rapid evaporation. The diluted solution was then applied to the textiles in the tray, which was subsequently placed in a fume hood to allow for complete evaporation. Following evaporation, 15 textile pieces were taken and extracted for analysis. The coefficient of variation (CV) for this method is presented in Table S1.

*Dosing with Rotary Evaporator.* The second method involved using a rotary evaporator (Figure S4). The textiles and diluted solution were prepared similarly to the tray method. However, in this procedure, the textile pieces were placed in a rotary flask and mixed thoroughly. The mixture was rotated in the rotary evaporator to ensure an even distribution of the analytes. After rotation, the solvent evaporated by rotation of the sample under mild vacuum (556 mbar, 40°C). This procedure was conducted with two different exposure times: a one-hour dosing period followed by evaporation, and a six-hour dosing period followed by evaporation. The results for these trials are detailed in Figure S2.

These preliminary tests were crucial in determining the most effective method for achieving homogeneously spiked textiles, essential for the reliability and accuracy of subsequent chamber tests. The coefficient of variation was used to assess the relative variability of data. When the CV exceeds 30 %, it often signals inconsistencies.[1] The lowest CV values were achieved with the 6-hour exposure design with a rotary evaporator, so this method was adopted to dose textiles for the subsequent chamber experiments.

*Figure S4. Dosing with the tray*

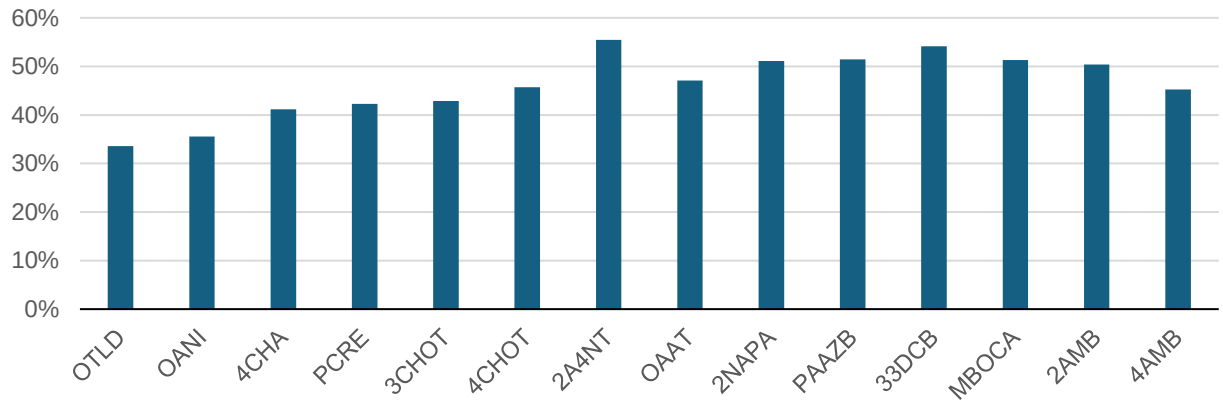


*Figure S5. CV of AAs in polyester to evaluate homogeneity of fabrics based on dosing with the tray*

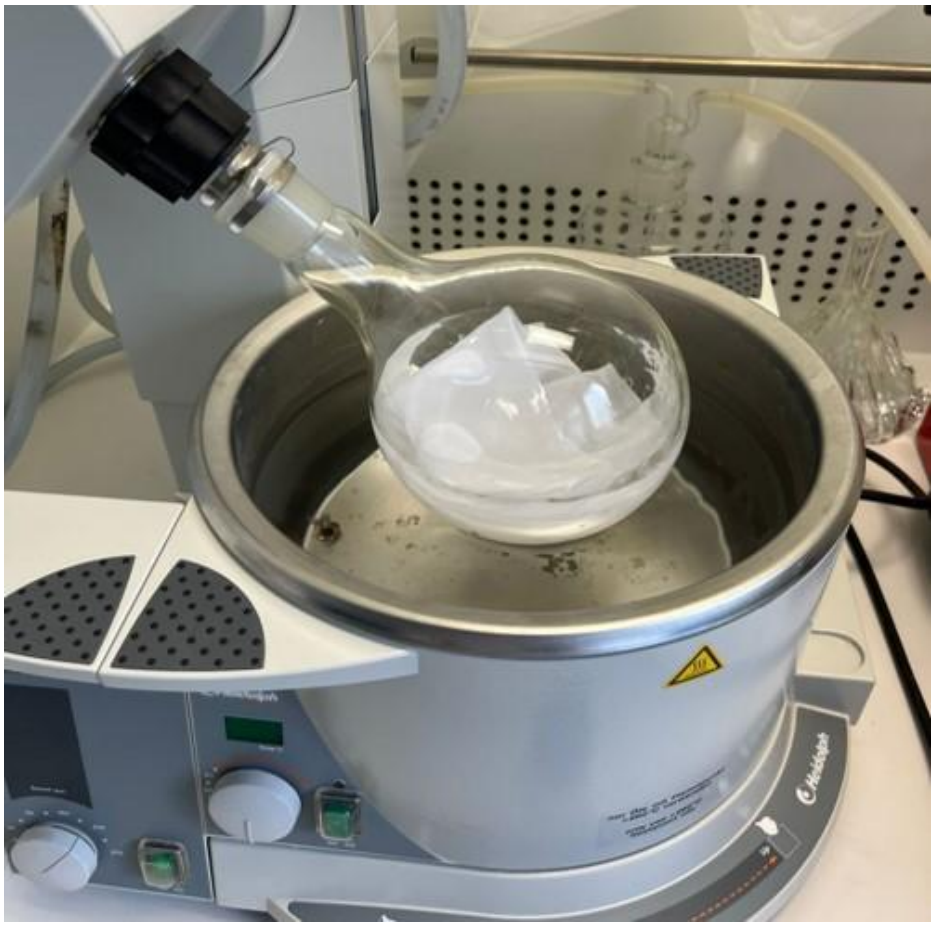

*Figure S6. Dosing with Rotary Evaporator*

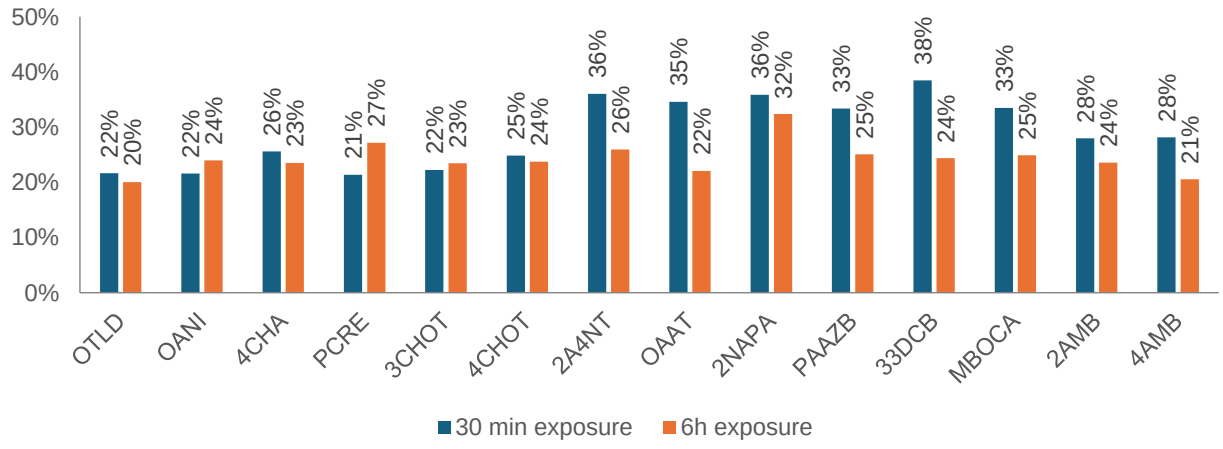


*Figure S7. CV of AAs in polyester to evaluate the homogeneity of spiked AAs in fabrics based on dosing with rotary evaporator*

*Table S3. Nominal concentration of dosed AA on an 864 $cm^2$ area of textile surface*

| Compounds | Nominal Concentrations of spiked AAs (µg) | Producer |
|---|---|---|
| ANI | 20 | Chemcruz, Germany |
| 2APY | 40 | Sigma-Aldrich, USA |
| OTLD | 10 | |
| OANI | 40 | |
| 4CHA | 20 | |
| PCRE | 30 | AccuStandard, USA |
| 3CHOT | 40 | |
| 4CHOT | 40 | |
| 2A4NT | 20 | |
| BNZD | 60 | Sigma-Aldrich, USA |
| OAAT | 90 | AccuStandard, USA |
| 1NAPA | 20 | Tokyo Chemical Industry (TCI Co.), Japan |
| 2NAPA | 20 | AccuStandard, USA |
| PAAZB | 70 | fluorochem, UK |
| 33DCB | 20 | Sigma-Aldrich, USA |
| ODAN | 50 | AccuStandard, USA |
| MBOCA | 40 | |
| 2AMB | 40 | |
| 4AMB | 40 | Sigma-Aldrich, USA |

## Text S3. Extraction tests of aromatic amines from textiles

*Acetonitrile.* Initial tests used 1% $NH_3$ in 180 mL acetonitrile (ACN) as the extraction solvent. The extraction method was adapted from Krupčíková et al.,[2] Textile pieces (27 x 8 cm) were placed in a 250 ml amber bottles. Primary AA standards (o-Toluidine, o-Anisidine, 4-Chloraniline, p-Cresidine, 3-Chloro-o-Toluidine, 4-Chloro-o-Toluidine, 2-Amino-4-nitrotoluene, o-Aminoazotoluene, 2-Naphthylamine, p-aminoazobenzene, 3,3'-Dichlorbenzidine, 4,4'-methylenebis(2-chloroaniline), 2-Aminobiphenyl, 4-Aminobiphenyl) spiked (500 ng/ml) on to textiles. Subsequently, the solvent was added, and the mixture was shaken on a flat orbital shaker for approximately 24 hours. This extraction process was performed three times, with only pure ACN used for the second and third extractions. The collected extracts were then concentrated to approximately 0.5 mL using a multi-position Buchi Syncore Analyst rotary evaporator. The extracts were filtered through a nylon syringe filter (Chromafil Xtra PA-20/13, pore size 0.20 µm, diameter 13 mm, Macherey-Nagel, Germany) into clean GC minivials to ensure purity and readiness for subsequent analysis.

*Acetone.* Acetone was used as the extraction solvent. Textile pieces (27 x 8 cm) were placed in 250 mL amber bottles. Textiles were dosed with the same analytes with the acetonitrile method and placed in vials. The extraction process began with the addition of 180 mL of acetone to each vial. The samples were then subjected to ultrasonication for 15 minutes. Extract transferred to the Syncore Evaporator bottles. This extraction step was repeated to maximize analyte recovery. The combined extracts were then concentrated using a Syncore Evaporator, reducing the solvent volume to approximately 0.5-1 mL. The concentrated extract underwent the same clean-up procedure with ACN to eliminate any remaining impurities. The extracts were filtered through a nylon syringe filter (Chromafil Extra PA-20/13, pore size 0.20 μm, diameter 13 mm, Macherey-Nagel, Germany) into clean mini-vials.

*Methyl-tert-butyl Ether (MTBE).* The same procedure as for acetone was followed, using MTBE as the extraction solvent.

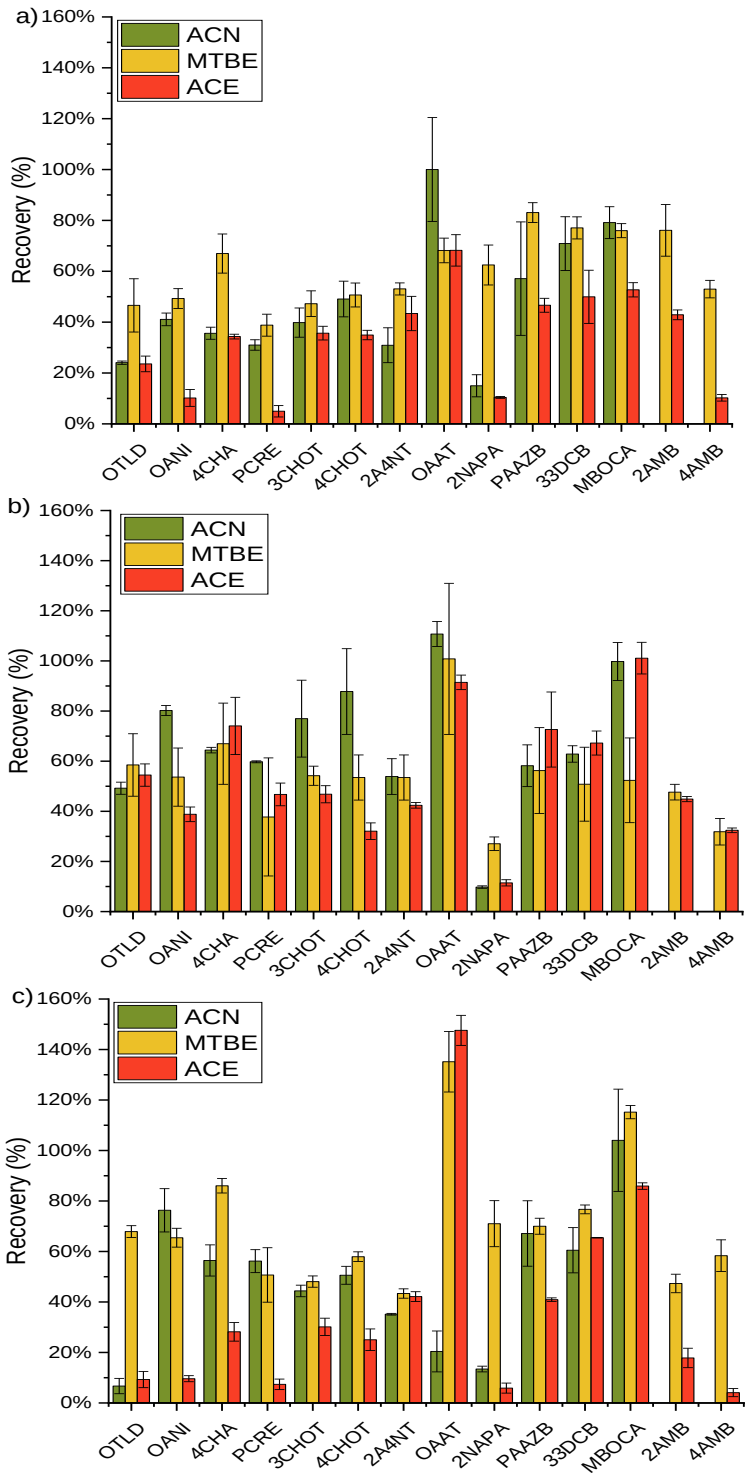


Figure S8. Extraction efficiencies for 3 different extraction solvents for a) polyester, b) cotton and c) wool. MTBE demonstrated high extraction efficiency across various textile types, particularly for compounds such as o-toluidine and 2-naphthylamine. Acetone shows effective performance for certain compounds in wool and polyester, although its efficiency is less consistent across different analytes. Acetonitrile, while exhibiting moderate efficiency comparable to acetone, generally falls short of the effectiveness observed with MTBE. MTBE is the most consistent and efficient solvent for extracting a range of analytes from diverse textile materials, highlighting its suitability for comprehensive textile analysis.

*Table S4. Target analytes and internal standards (ISTDs; labelled in yellow, see* section 2.5. Analysis *in the main text).*

| Compound | Ret. Time (s) | Exact Mass $[M+H]^+$ | Precursor Ion | Product Ion | | Collision Energy (V) | |
|---|---|---|---|---|---|---|---|
| 2-Aminopyridine[4] | 1.27 | 95.06037 | 95.01 | 78 | 51 | 20 | 35 |
| Nicotine[1] | 1.32 | 162.1157 | 163.1 | 132 | 130 | 15 | 20 |
| Benzidine[1] | 1.44 | 185.10732 | 185.1 | 168 | 141 | 20 | 30 |
| Benzidine-*d8*[1] | 1.45 | 193.1575 | 193.2 | 176 | 149 | 20 | 30 |
| Aniline[1] | 1.45 | 94.06513 | 94.1 | 77 | 67 | 14 | 14 |
| Dianilinomethane-*d4*[1] | 1.45 | 203.1481 | 203.1 | 186 | 108 | 15 | 30 |
| *o*-Anisidine[4] | 2.00 | 124.07569 | 124.1 | 109 | 80 | 14 | 30 |
| *o*-Anisidine-*d3*[4] | 2.00 | 127.0945 | 127.1 | 109 | 80 | 20 | 30 |
| *o*-Toluidine-*d3*[2] | 2.12 | 111.0996 | 111.1 | 94 | 67 | 18 | 30 |
| *o*-Toluidine[4] | 2.14 | 108.08078 | 108.1 | 91 | 65 | 18 | 26 |
| *p*-Cresidine[4] | 2.80 | 138.09134 | 138.1 | 123 | 106 | 14 | 22 |
| *o*-Dianisidine[5] | 2.89 | 245.12845 | 245.1 | 230 | 187 | 10 | 30 |
| 4-Chloraniline-*d4*[3] | 3.19 | 132.0513 | 132.1 | 115 | 97 | 22 | 18 |
| 4-Chloraniline[3] | 3.24 | 128.02615 | 128.0 | 111 | 93 | 22 | 18 |
| 2-Naphthylamine[4] | 3.84 | 144.08078 | 144.1 | 127 | 77 | 20 | 30 |
| 1-Naphthylamine[4] | 4.14 | 144.08078 | 144.1 | 127 | 77 | 20 | 35 |
| 4-Chloro-*o*-toluidine[4] | 4.55 | 142.04180 | 142.0 | 125 | 107 | 18 | 14 |
| 4-Aminobiphenyl-*d9*[4] | 4.62 | 179.1529 | 179.2 | 162 | 160 | 22 | 30 |
| 4-Aminobiphenyl[4] | 4.69 | 170.09643 | 170.1 | 152 | 128 | 30 | 26 |
| 3-Chloro-*o*-toluidine[4] | 5.01 | 142.04180 | 142.0 | 125 | 107 | 18 | 14 |
| 2-Amino-4-nitrotoluene[2] | 5.22 | 153.06585 | 153.1 | 107 | 90 | 14 | 26 |
| 2-Aminobiphenyl[4] | 5.42 | 170.09643 | 170.1 | 152 | 128 | 30 | 26 |
| Aniline yellow[4] | 6.19 | 198.10257 | 198.1 | 93 | 77 | 22 | 18 |
| 3,3'-Dichlorobenzidine-*d6*[5] | 6.28 | 259.0670 | 259.1 | 223 | 188 | 18 | 30 |
| 3,3'-Dichlorobenzidine[5] | 6.30 | 253.02938 | 253.0 | 217 | 182 | 18 | 30 |
| MBOCA[4] | 6.33 | 267.04503 | 267.0 | 231 | 140 | 18 | 30 |
| *o*-Aminoazotoluene[4] | 6.97 | 226.13387 | 226.1 | 107 | 91 | 22 | 22 |

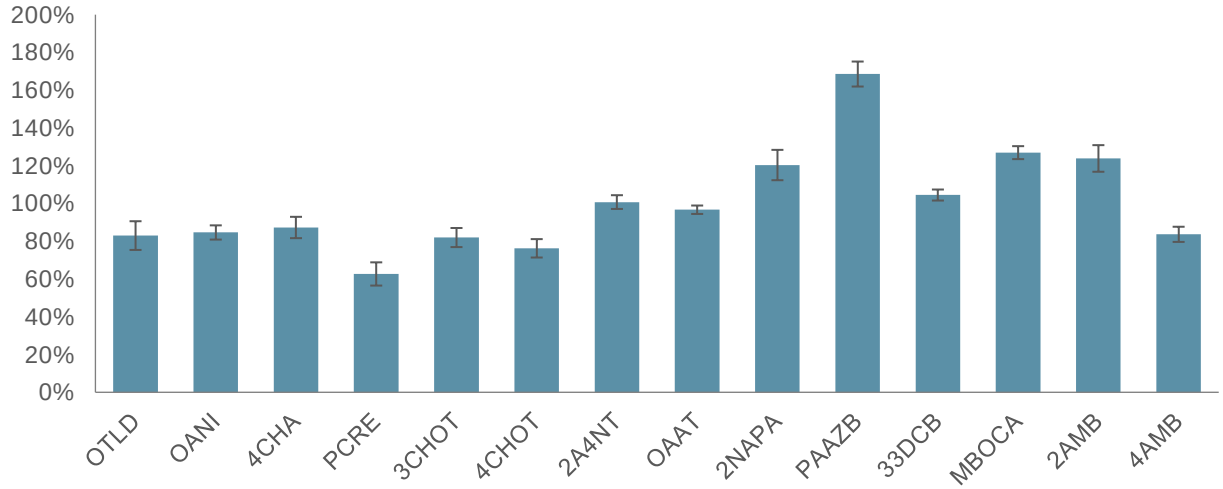


*Figure S9. Tenax tubes (n=3) extraction efficiency for method development*

*Table S5. Breakthrough test results. Breakthrough tests were conducted using a second Tenax tube connected to the chamber system to ensure no breakthrough occurred that could affect the chamber concentration. Breakthrough percentage calculations based on the concentrations (ng/L) from the second Tenax tube (control) divided by the concentrations from the first Tenax tube, expressed as percentages.*

| Textile in chamber | Duration | ANI | 2APY | OTLD | OANI | 4CHA | PCRE | 3CHOT | 4CHOT | 2A4NT | BNZD | OAAT | 1NAPA | 2NAPA | PAAZB | 33DCB | ODAN | MBOCA | 2AMB | 4AMB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Wool** | **8H** | 34% | 6% | 4% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Wool** | **8H** | 12% | 2% | 3% | 0% | 1% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Wool** | **8H** | 15% | 3% | 6% | 1% | 1% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Cotton** | **8H** | 1% | 1% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Cotton** | **8H** | 7% | 1% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Cotton** | **8H** | 7% | 2% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Poly-ester** | **8H** | 2% | 2% | 0% | 1% | 1% | 6% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Poly-ester** | **8H** | 3% | 1% | 0% | 1% | 2% | 3% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Poly-ester** | **8H** | 1% | 2% | 1% | 2% | 3% | 7% | 1% | 2% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Wool** | **24H** | 40% | 4% | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Wool** | **24H** | 1% | 1% | 2% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Wool** | **24H** | 4% | 3% | 2% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Cotton** | **24H** | 0% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Cotton** | **24H** | 2% | 1% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Cotton** | **24H** | 16% | 2% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Poly-ester** | **24H** | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Poly-ester** | **24H** | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| **Poly-ester** | **24H** | 0% | 1% | 0% | 0% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

*Table S6. Recoveries (average and standard deviation) of AAs from textiles after chamber exposure, deuterated standards d8-benzidine (BNZD-d8) and d3-o-anisidine (OANI-d3), 100 ng/sample.*

| Samples | 8h Polyester | | 8h Cotton | | 8h Wool | | 24h Polyester | | 24h Cotton | | 24h Wool | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | OANI-d3 | BNZD-d8 | OANI-d3 | BNZD-d8 | OANI-d3 | BNZD-d8 | OANI-d3 | BNZD-d8 | OANI-d3 | BNZD-d8 | OANI-d3 | BNZD-d8 |
| **n** | 27 | 27 | 26 | 26 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 |
| **Range** | 44-91% | 20-54% | 70-85% | 53-73% | 35-79% | 14-76% | 44-114% | 7-71% | 46-76% | 31-66% | 61-81% | 43-76% |
| **Average** | 65% | 39% | 78% | 65% | 66% | 43% | 87% | 42% | 66% | 51% | 72% | 62% |
| **Standard deviation** | 13 | 8 | 4 | 6 | 12 | 17 | 16 | 21 | 7 | 8 | 6 | 10 |

*Table S7. Recoveries of AAs from Tenax after chamber test exposure, deuterated standards d8-benzidine and d3-o-anisidine, 100 ng/sample.*

| Samples | 8h Polyester | | 8h Cotton | | 8h Wool | | 24h Polyester | | 24h Cotton | | 24h Wool | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | OANI-d3 | BNZD-d8 | OANI-d3 | BNZD-d8 | OANI-d3 | BNZD-d8 | OANI-d3 | BNZD-d8 | OANI-d3 | BNZD-d8 | OANI-d3 | BNZD-d8 |
| **Average** | 90% | 77% | 83% | 90% | 84% | 95% | 118% | 103% | 81% | 88% | 85% | 98% |
| **Standard deviation** | 5 | 7 | 3 | 3 | 2 | 4 | 3 | 9 | 2 | 4 | 2 | 4 |

## Text S4 Uncertainty calculation and formula for the $K_{TA}$

The formula calculates the uncertainty in the $K_{TA}$ by considering the calculation of uncertainties associated with several input variables. The general formula is:

$$SDK_{TA} = K_{TA}\sqrt{{RSD_{NT}}^2 + {RSD_{VA}}^2 + {RSD_{MT}}^2 + {RSD_{NA}}^2}$$

Where:

- $K_{TA}$: The textile-air partition coefficient
- NT: Variability of textiles (textile recoveries)
- VA: Volume of air (pump and flow meter-related uncertainties)
- MT: Mass of the textiles (scale-related uncertainties)
- NA: Variability in the air (Tenax tubes recoveries)
- SD: Standard deviation
- RSD: Relative standard deviation

This approach quantifies how measurement variability in each contributing factor affects the overall uncertainty in $K_{TA}$ calculations.

*Table S8. Volume normalized distribution coefficient data ($LogK_{vol}$). Recalculated from $K_{TA}$ values (Table 1. in the main text)*

| AAs | $LogK_{vol}$ Polyester | $LogK_{vol}$ Cotton | $LogK_{vol}$ Wool |
|---|---|---|---|
| ANI | 4.4 | 4.8 | 4.9 |
| 2APY | 5.1 | 6.1 | 5.9 |
| OTLD | 4.5 | 4.7 | 4.9 |
| OANI | 5.0 | 5.4 | 5.5 |
| 4CHA | 5.3 | 5.4 | 5.8 |
| PCRE | 5.6 | 5.7 | 5.8 |
| 3CHOT | 5.0 | 5.3 | 5.5 |
| 4CHOT | 5.3 | 5.4 | 5.7 |
| 2A4NT | 7.0 | 7.3 | 7.3 |
| BNZD | 7.9 | 8.5 | 8.1 |
| OAAT | 8.3 | - | - |
| 1NAPA | 6.8 | 6.6 | 6.8 |
| 2NAPA | 6.6 | 6.9 | 7.1 |
| PAAZB | 8.0 | - | - |
| 33DCB | 7.0 | 7.6 | 7.5 |
| ODAN | 6.6 | - | - |
| MBOCA | 8.7 | - | - |
| 2AMB | 5.8 | 6.1 | 6.2 |
| 4AMB | 7.3 | 7.5 | 7.4 |

- : Indicates that air concentration data was unavailable, preventing the calculation of $K_{vol}$ values.

*Table S9. Summary of statistical tests across replicates and durations to see if the results are statistically different.*

| Textile Type | Experiment Duration | Replicates Number | ANOVA Test (α = 0.05) - Significant Difference (Yes/No) |
|---|---|---|---|
| Polyester | 8H | 1-2 | No |
| Polyester | 8H | 1-3 | No |
| Polyester | 8H | 2-3 | No |
| Polyester | 24H | 1-2 | No |
| Polyester | 24H | 1-3 | No |
| Polyester | 24H | 2-3 | No |
| Polyester | 8H-24H | 1-2 | No |
| Polyester | 8H-24H | 1-3 | No |
| Polyester | 8H-24H | 2-3 | No |
| Wool | 8H | 1-2 | Yes |
| Wool | 8H | 1-3 | Yes |
| Wool | 8H | 2-3 | No |
| Wool | 24H | 1-2 | Yes |
| Wool | 24H | 1-3 | Yes |
| Wool | 24H | 2-3 | No |
| Wool | 8H-24H | 1-2 | Yes |
| Wool | 8H-24H | 1-3 | Yes |
| Wool | 8H-24H | 2-3 | No |
| Cotton | 8H | 1-2 | Yes |
| Cotton | 8H | 1-3 | Yes |
| Cotton | 8H | 2-3 | No |
| Cotton | 24H | 1-2 | Yes |
| Cotton | 24H | 1-3 | Yes |
| Cotton | 24H | 2-3 | No |
| Cotton | 8H-24H | 1-2 | Yes |
| Cotton | 8H-24H | 1-3 | Yes |
| Cotton | 8H-24H | 2-3 | No |

*Table S10. Cotton fabric $LogK_{vol}$ - $LogK_{OA}$ linear fit parameters. AAs [This study], phthalates[3], and PCBs[4] : At a significance level of 0.05, the slope of the regression model is significantly different from zero, showing a meaningful relationship between $LogK_{vol}$ - $LogK_{OA}$.*

| Equation | $LogK_{vol}$ = Intercept + Slope× $LogK_{OA}$ | | | | | |
|---|---|---|---|---|---|---|
| Plot | AAs [This study] | PCBs[5] | Phthalates[3] | Phthalates[5] | PCBs[4] | Meth-amphetamine[7] |
| Intercept | 1.70± 1.33 | 16.76 ± 2.69 | -3.65 ± 0.24 | -1.89 ± 3.66 | 4.87 ± 0.48 | -- |
| Slope | 0.77 ± 0.17 | -1.33 ± 0.33 | 1.20 ± 0.03 | 0.97 ± 0.45 | 0.32 ± 0.10 | -- |
| Pearson's r | 0.75 | -0.94 | 1.00 | 0.83 | 0.61 | -- |
| R-Square (COD) | 0.56 | 0.89 | 1.00 | 0.70 | 0.37 | -- |
| Standard Error | 0.17 | 0.33 | 0.03 | 0.45 | 0.1 | - |
| Adj. R-Square | 0.54 | 0.83 | 1.00 | 0.55 | 0.33 | -- |
| Prob>\|t\| | 0.0038 | 0.06 | 2.2E-6 | 0.2 | 0.006 | - |

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