

### Exposure to CCA-contaminated soils via dermal contact



### Metal(loid)s in-vitro bioaccessibility (%) $\pm$ standard deviation

|           | Sweat A (pH 6.5) | Sweat B (pH 4.7) |
|-----------|------------------|------------------|
| <b>As</b> | 1.2 $\pm$ 1.0    | 2.3 $\pm$ 1.5    |
| <b>Cr</b> | 0.1 $\pm$ 0.03   | 4.8 $\pm$ 9.1    |
| <b>Cu</b> | 0.6 $\pm$ 0.7    | 12.4 $\pm$ 22.0  |
| <b>Ni</b> | 3.7 $\pm$ 7.5    | 8.1 $\pm$ 16.5   |
| <b>Pb</b> | 1.7 $\pm$ 1.9    | 16.0 $\pm$ 15.1  |
| <b>Zn</b> | 7.5 $\pm$ 14.7   | 18.9 $\pm$ 32.4  |

### Speciation of metal(loid)s in synthetic sweat

|           | Sweat A (pH 6.5)                | Sweat B (pH 4.7) |
|-----------|---------------------------------|------------------|
| <b>As</b> | As(v)<br>100%                   | As(v)<br>100%    |
| <b>Cr</b> | Cr(VI)<br>57%<br>Cr(III)<br>43% | Cr(III)<br>100%  |
| <b>Cu</b> | Cu(II)<br>100%                  | Cu(II)<br>100%   |
| <b>Ni</b> | Ni(II)<br>100%                  | Ni(II)<br>100%   |
| <b>Pb</b> | Pb(II)<br>100%                  | Pb(II)<br>100%   |
| <b>Zn</b> | Zn(II)<br>100%                  | Zn(II)<br>100%   |

### In-vitro permeation

#### Dermal bioaccessibility

Sweat A  
2 hours  
36°C

#### In-vitro permeation

Franz cell  
Strat-M  
24 hours  
37°C

Synthetic skin coating with sebum increases Cr permeation

No clear influence of skin sebum coating on the permeation kinetics of Cr and Cu

As, Ni, Pb, and Zn did not permeate synthetic skin