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Abstract



Introduction

- Per- and polyfluoroalkyl substances (PFAS) are anthropogenic chemicals
- Known for oil and water-repellent properties
- Persistent and mobile
- >4700 types of PFAS, most unregulated
- Used in non-stick pans, textiles, fire-fighting foams, food packaging, cosmetics
- Study Aims:
 1. Determine occurrence of PFAS in cosmetics
 2. Evaluate relationship between PFAS presence and disclosure, or lack thereof, on ingredient labels

Methods

- 214 cosmetic products from U.S. and 17 from Canada, including mascara, foundation, lipstick and others
- Samples analyzed for total F using PIGE spectroscopy
- 29 products (including 20 with high total F) selected for targeted LC and GC analysis of Σ_{53} PFAS

Results & Discussion

Key findings:

1) Foundations had highest median total F; mascaras had largest range of total F

2) Σ_{53} PFAS conc. up to 10,500 ng/g

3) Only 8% of samples had PFAS ingredients listed

Take-home:

Avoid cosmetics marketed as:
“long lasting”
“waterproof”
“wear-resistant”

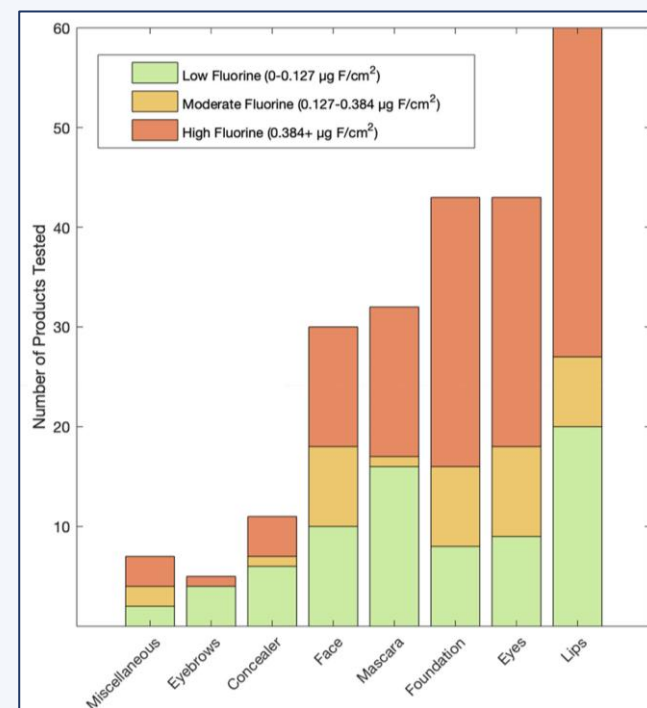


Fig. 1: Total fluorine measured by PIGE