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## Chase H. Butler, M.S.

### Senior Environmental Chemist

Ms. Butler is a chemist with experience in designing sampling plans and testing protocols, assessing data quality, and interpreting data to support the fulfillment of various regulatory obligations. At Gradient, she has provided technical support for chemical registration and compliance in multiple geographic regions and countries and advises on the use of appropriate chemicals for read-across of toxicological data. Prior to joining Gradient, Ms. Butler conducted research at Yale's Center for Conservation and Preservation, studying the compounds generated during the degradation of contemporary materials used in art and art conservation.

### Selected Projects

**Regulatory Testing Oversight:** Provided technical support to an industry consortium as it implemented a tiered testing program on specialty chemicals in accordance with Consent Orders issued under the Toxic Substances Control Act (TSCA). Ensured that testing was done according to standard guidelines, with modifications as needed to accommodate the unique properties of the test substances. Assisted in communicating the results with US EPA, including providing context with industry-specific insights and recommendations for the scope of testing in subsequent tiers.

**PFAS Study Design and Data Validation:** Assisted in developing a customized sampling and analysis plan for measuring PFAS in multiple matrices at an industrial site. Validated and interpreted the data to support regulatory reporting.

**Global Product Portfolio Management:** Coordinated efforts to improve and maintain a custom online database for managing the regulatory compliance of products used globally.

**Chemical Compliance and Registration:** Prepared applications for new chemicals under various regulatory guidelines in several Asian-Pacific countries. Coordinated efforts involving technical research and input on physicochemical properties, chemical hazard profiles, and expected exposures to workers, the public, and the environment. Determined jurisdiction-specific, product-level hazard classifications; SDS disclosure requirements; and handling, storage, disposal, and release requirements. Aided client in achieving compliance under environmental health and safety regulations.

**Contaminated Site Assessment:** Reviewed historical documents and prepared historical timeline of former roofing manufacturing plants to support statistical source allocation analysis of an urban Superfund site. Reviewed environmental investigations and prepared summary of contamination at the site.

**Product Safety Evaluation:** Reviewed GC- and LC-MS data for the presence of skin sensitizers in various polyurethane-based products. Identified appropriate chemical surrogates to facilitate hazard assessments of data-poor chemicals. Provided technical expertise on polymer formulations and additives.

**Structure-Reactivity Analysis:** Assessed the comparability of alpha-diketone and beta-diketone chemistries based on first principles of physical organic chemistry.

### Selected Publications and Presentations

**Butler, CH.** 2024. "Responsible reinvigoration: The United States semiconductor industry and the CHIPS and Science Act." *Gradient Trends* 89. Winter.

Noble, A; **Butler, CH**; Lunsman, T; Lewis, A. 2016. "A Comprehensive Approach to Evaluating the Hazards of Microplastics in the Marine Environment." Presented at the 2016 Ocean Sciences Meeting, New Orleans, LA.

Zhang, J; Kneeland, JM; **Butler, CH.** 2015. "Using Professional Judgment to Validate Structural Alert-Based Predictive Toxicity." Presented at the Society of Toxicology (SOT) 54th Annual Meeting, San Diego, CA, March 22-26.

**Butler, CH**; Whitmore, PM. 2013. "Measurement of peroxides in the volatile degradation products of polypropylene photooxidation." *Poly. Degrad. Stab.* 98:471-473.

### Areas of Expertise

- Chemistry
- Analytical Testing Methods
- Regulatory Testing
- Materials Science & Degradation Pathways

### Services

- Chemistry/Forensics
- Toxic Substances Control Act (TSCA)
- Chemical Portfolio Hazard/Risk Analysis
- Data Quality Management
- Third-Party Profiling
- Historical Site Analysis

### Education

- M.S., Chemistry, Carnegie Mellon University
- B.S., Chemistry, Yale University
- US EPA Sustainable Futures Workshop