Per- and Polyfluoroalkyl Substances

PFAS – NASF CONCERNS AND ACTIVITIES

What PFAS are found in current mist suppressant formulations?

- ✓ As part of an overall effort to eliminated the use of PFOS, the U.S. chrome mist suppressant formulations changed to use 6:2 FTS as the predominant active PFAS. However, it is unknown whether formulations contain any trace levels of PFOS or other long-chain polyfluorinated chemicals that can degrade into PFOS or PFOA.
- ✓ NASF is engaged with state and federal regulators to ensure that this data gap can be addressed efficiently and effectively.
- ✓ NASF is working with their supply chain to understand the chemical composition of mist suppressant formulations, and, if present, how to eliminate PFOS or long-chain precursors.

Why is there still residual PFOS detected in plating shop effluent?

- ✓ Due to its stability and "stickiness", residual PFOS used before the 2012-15 phase-out may linger in plating shop facilities, which could potentially result in the release of legacy PFOS in plating shop effluent.
- ✓ NASF is working with regulators and plating shop owners to develop a pilot program for testing plating processes and facilities for the presence of PFOS, and, if present, determine how to cost-effectively eliminate the source of residual PFOS.

How do potential PFAS releases from metal plating shops contribute to the larger PFAS environmental conceptual model?

- ✓ Metal plating shop effluent is only one potential source of PFAS entering waste water treatment plants (WWTPs) including those that are publically owned (publically owned treatment works; POTW).
- ✓ NASF is engaged with POTWs, and other key stakeholders and trade groups to help address the larger question of PFAS sources to human drinking water and/or food supplies. An important component of this is filling the information gaps in the environmental transformation, transport and fate of PFAS.

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Conceptual Site Model for PFAS Fate & Transformation Through a Publicly Owned Treatment Works (POTW)

- ✓ There may be multiple PFAS containing waste streams entering a single POTW and can range from urban to industrial sources including city stormwater runoff, airport (municipal or Department of Defense) stormwater and wastewater, and various types of industrial waste effluent. The relative contribution of PFAS from each source is site-specific and highly variable.
- ✓ Metal plating shops treat their industrial waste in-house prior to discharge to a city's POTW using various types of treatment systems. However, these treatment processes are not likely to remove PFAS.
- ✓ Once PFAS-containing effluent enters a POTW, the PFAS will undergo various transformations, depending on the POTW treatment stages in place and plant operations. Formation of terminal perfluoroalkyl acids from the degradation of polyfluoroalkyl precursors within treatment facilities has been demonstrated.
- ✓ PFAS may leave a POTW and enter the environment through both the liquid effluent that is discharged to surface water bodies or in the biosolid sludge that is typically used as a land amendment in agriculture.
- ✓ Human exposure may occur via the use of the POTW's effluent receiving water as drinking water or the consumption of fish in the vicinity. For areas where biosolids have been applied, there may be exposure through the consumption of agricultural products or the seepage of PFAS from the soil to underlying groundwater, which may in turn be a drinking water source.