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Show Notes – It's Your Water: Microplastics in Drinking Water

Key Topics Covered

1. What Are Microplastics & Nanoplastics?

- Microplastics: Defined as very small plastic particles, typically in the 0.1–1 micron range.
- Nanoplastics: Even smaller, at the nanoparticle level, requiring more advanced treatment.
- Industry confusion: many water professionals mistakenly lump the two together, but research communities distinguish them clearly.

2. Filtration & Treatment Technologies

- Microplastics removal: Achievable with sub-micron filtration, ultrafiltration (UF), and specialized membranes such as AO Smith's UltraPro membrane.
- Nanoplastics removal: Requires nanofiltration (NF) or reverse osmosis (RO).
- Debate: NF is often called "bad RO," but Justin emphasizes NF's unique value and underused applications.

3. Complexity of Keeping Water Clean

- Case study: A customer inadvertently re-introduced polyethylene microplastics into treated water when disinfectant flowed through plastic tubing before UF treatment.
- Materials issue: Plastic fittings, RO tanks with poly liners, and polyethylene tubing can all contribute to microplastic leaching.
- Reality check: Total elimination is rarely possible, but significant reduction is achievable—and still beneficial.

4. Regulatory & Certification Landscape

- No clear EPA standard yet for microplastics.
- Labs do test for microplastics, but methods and targets vary.
- Certification efforts: NSF/ANSI currently allows Class 1 particulate claims to cover microplastics reduction, but a dedicated microplastics certification standard is being developed.
- WHO stance: Still researching health impacts—major uncertainties remain about the long-term effects on the human body.

5. Broader Industry & Consumer Concerns

- Microplastics are increasingly viewed as the "next PFAS."
- As with most contaminants, more research tends to reveal greater risks rather than fewer.
- Consumer awareness is growing: stainless steel water bottles, RO systems at home, and reduced plastic use are becoming more common strategies.
- Environmental concern: microplastics are now present globally—even in atmospheric "plastic dust."



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Key Takeaways

- Microplastics ≠ Nanoplastics: Different particle sizes, different treatment strategies.
- Treatment works, but materials matter: UF and RO can remove microplastics—but system design must avoid reintroducing them.
- Regulation is coming: Expect updated standards and certifications specifically targeting microplastics.
- Awareness is growing: Just like PFAS, microplastics are becoming a defining contaminant of the decade.

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