WORLD SENSORIUM CONSERVANCY

THE ENVIRONMENTAL JOURNEY OF SYNTHETIC FRAGRANCE CHEMICALS: FROM BOTTLE TO OCEAN

The journey of synthetic fragrance chemicals through the environment is complex and far-reaching, affecting air, water, aquatic life, and plants in interconnected ways. These chemicals, often found in personal care products, air fresheners, cleaning supplies, and perfumes, include compounds such as phthalates, synthetic musks, and terpenes, many of which are persistent, bioaccumulative, and toxic PBTs (Persistent Bioaccumulative Toxic substances).

A MULTIDIMENSIONAL EFFECT

ENVIRONMENTAL COMPONENT	PATHWAYS	KEY EFFECTS
Air	• Volatile compounds released from scented products and industrial processes. • Undergo atmospheric reactions (e.g., with ozone, hydroxyl radicals). • Transported long distances globally.	• Formation of secondary pollutants (e.g., formaldehyde, SOAs). • Contribution to smog and indoor air pollution. • Respiratory issues, migraines, hormone disruption in humans. • Pollutants reach remote areas (e.g., Arctic, high mountains).
Water Systems	• Washed off during bathing, cleaning, laundry. • Partial removal in wastewater treatment plants (WWTPs). • Released into surface waters or leach into groundwater.	• Persistent contamination of rivers, lakes, and coastal waters. • Sediment accumulation or dispersion in water. • Groundwater contamination via leaching, septic systems, or runoff.
Aquatic Life	• Exposure through contaminated water and sediments. • Interaction with other pollutants (e.g., pesticides, heavy metals).	• Bioaccumulation in fish, mussels, crustaceans. • Endocrine disruption affecting reproduction and growth. • Behavioral changes and altered gene expression. • Increased toxicity from pollutant combinations.
Plants	• Uptake of contaminated water through roots and shoots. • Exposure to fragrance-polluted air and water.	• Disruption of plant hormone signaling and growth. • Negative impacts on germination and microbial symbiosis. • Interference with pollinator attraction due to scent masking.

WHAT YOU CAN DO

Make meaningful changes to reduce the environmental and health harms caused by synthetic fragrance chemicals

Stay Conscious

Choose fragrance-free or naturally scented products:
- Choose fragrance-free versions of laundry detergents, soaps, shampoos, and cleaning products.
- If scent is important, use products scented with essential oils from verified sustainable sources.

Avoid air fresheners and scented candles:
- Use alternatives such as activated charcoal or essential oil diffusers.

Buy less, buy cleaner:
- Reduce consumption of highly fragranced cosmetics and cleaners.
- Support eco-certified brands that are transparent about ingredients (e.g., EWG Verified, Made Safe, USDA Organic).

Ask brands for ingredient transparency:
- Many companies hide synthetic chemicals under the vague terms “fragrance” or “parfum”: ask for full disclosure of fragrance ingredients.

Be an Advocate for Change

Support legislation for fragrance regulation:
- Back laws like the Fragrance and Flavors Right to Know Act and international equivalents that push for stricter oversight of chemical disclosures and bans on harmful compounds.

Follow and support environmental organizations:
- Groups like the Environmental Working Group (EWG), Women’s Voices for the Earth, and Campaign for Safe Cosmetics.

Educate others:
- Share information about the impact of synthetic fragrances.
- Encourage friends, schools, and local businesses to go fragrance-free.

Get involved in local environmental cleanups and monitoring efforts:
- Help keep synthetic chemical residues out of waterways by participating in local water quality initiatives or citizen science air monitoring.