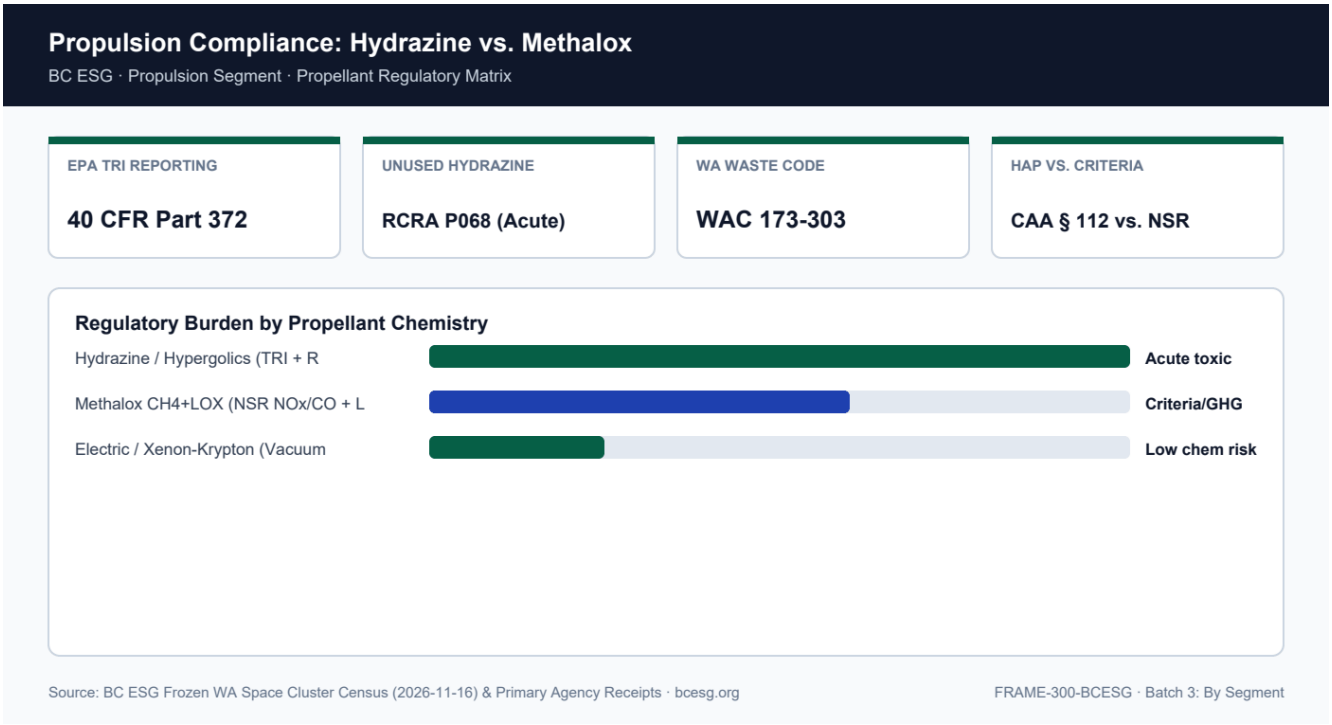
Propulsion Compliance: EPA TRI, RCRA P068 Hydrazine & Methalox Air Permits

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Verification & Scope Baseline: Hydrazine triggers EPA TRI (40 CFR 372), RCRA acute P068 / WAC 173-303, and CAA § 112 HAP scrubbers; methalox triggers NSR criteria pollutants and 40 CFR 98 GHG reporting.



Rule / Statute	Propellant Trigger	Binding Requirement	Primary Source
EPCRA § 313 / EPA TRI (40 CFR 372)	Hydrazine, nitric/ammonia streams, solvents	Annual toxic release & off-site transfer reporting	EPA TRI Program
RCRA P068 / WAC 173-303	Unused or spent hydrazine	Acute hazardous waste storage, manifest & disposal	WA Ecology Dangerous Waste
Clean Air Act § 112 (HAP) vs. NSR	Hypergolics vs. Methalox	Closed-loop vapor scrubbers vs. flares/LDAR	EPA Clean Air Act

Why Propellant Chemistry Dictates the Entire Compliance Surface

In propulsion, environmental compliance is strictly governed by propellant chemistry. **Hydrazine and hypergolic propellants** ($ ext{N}_2 ext{H}_4$, MMH, $ ext{N}_2 ext{O}_4$) are Clean Air Act Section 112 Hazardous Air Pollutants (HAPs) requiring closed-loop chemical vapor scrubbers, fence-line monitoring, **EPA Toxics Release Inventory (TRI)** reporting under 40 CFR Part 372, and acute hazardous waste management (**RCRA P068** / **WAC 173-303**).

By contrast, **methalox ($ ext{CH}_4$ + LOX)** systems—used by launch-adjacent propulsion programs—produce predominantly $ ext{CO}_2$ and water vapor with trace CO and thermal $ ext{NO}_x$, shifting permitting to Clean Air Act New Source Review (NSR), methane Leak Detection and Repair (LDAR), and 40 CFR Part 98 GHG reporting.

Verified Primary Sources & Internal Bridges

- EPA Toxics Release Inventory (TRI): https://www.epa.gov/toxics-release-inventory-tri-program
- WA Ecology Dangerous Waste Guidance: https://ecology.wa.gov/regulations-permits/guidance-technical-assistance/dangerous-waste-guidance
- EPA Clean Air Act Overview: https://www.epa.gov/clean-air-act-overview
- WA Legislature WAC 173-303: https://apps.leg.wa.gov/wac/default.aspx?cite=173-303