

Pollution Prevention (P2) for the Military Sector

This informational fact sheet provides basic tips to reduce pollution for the military sector including general hazardous waste reduction techniques and specific hazardous waste reduction options for painting, firing ranges and toxic substance use reduction.

General Hazardous Waste Reduction

Tips

- Conduct a process analysis to determine if the hazardous chemicals used are necessary.
- Develop and use lists of authorized hazardous materials, restricted hazardous materials, and approved alternatives. Consult the [Significant New Alternatives](#)¹ (SNAP) program developed by the Environmental Protection Agency (EPA) for a listing of possible substitutes for various industrial sectors.
- Conduct a facility-wide waste audit to determine where hazardous waste is generated.
- Check and maintain equipment to reduce leaks, spills and hazardous waste generation.
- Ensure hazardous materials are being characterized properly per 40 CFR, Part 261 and disposed of accordingly.



Reducing Hazardous Waste Related to Painting

Many paints in the military sector contain toxic chemicals that may need to be managed as hazardous waste when disposed. Paints are used to protect aircrafts, vehicles and other equipment from rust and corrosion. To avoid paint waste:

- Consider less toxic paints and coating substitutes. Find chrome-free primers and paints with low volatile organic compounds (VOCs). See the [Environmental Management at Washington State National Security Facilities](#)² for P2 opportunities in painting operations.
- Inventory existing paint supplies and consider first in-first out (FIFO) to reduce the accumulation of expired paint.
- Purchase paint as needed based on inventory and projects.
- Train employees on the proper use, waste identification, handling and disposal of paint and paint-related waste².
- Mix enough paint for the specific project as needed.
- Explore alternatives to chemical stripping and eliminate hazardous stripping agents.³
- Reduce wash water and wastewater generated by placing liners on hangar floor to collect loosened dry paint and spent stripper solution. Properly dispose of dried scraps/stripping solution to remain in compliance with hazardous waste regulations.



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Reduce Toxic Substance Use:

- Coordinate with vendors for demonstrations or samples of environmentally friendly solvents.
- Check out EPA's [Safer Choice](#)⁴ to identify safer [chemicals](#)⁵ and [products](#)⁶ for performing the task.
- Implement the use of biodegradable solvents or aqueous parts washers².

Reduce Hazardous Waste From Firing Ranges

- Substitute lead ammunition with lead-free alternatives and recycle lead generated from the firing range activities, if feasible⁷.
- Use a proper bullet containment system and ventilation to reduce airborne lead particulates.
- Consider laundering and reusing shop rags to extend life of rags.
- Create an inventory to track ammunition orders.



Success Stories

Joint Base Lewis-McCord:

A facility located in Washington State instituted a hazardous materials reuse program that increased its hazardous waste diversion rate from 24% in 2003 to 69% in 2009. The facility reduced hazardous waste generation by collecting excess hazardous materials in a centralized location and reusing them beneficially in other process areas, rather than disposing of them as waste. Due to this and other projects, the facility reused 293,286 pounds of hazardous materials and reduced its waste generation by 2,300 55-gallon drums in 2009 alone, leading to cost savings of \$1,683,801⁸.

Project Management Office—Stryker Brigade Combat Team (PMO SBCT)

This team reduced the amount of hazardous materials used in production of the Stryker family of vehicles by adding language to contracts with parts suppliers that restricted the use of highly toxic or carcinogenic materials. They used P2 databases and other sources to identify alternatives for hexavalent chromium-containing materials and reduced the number of parts per vehicle containing hazardous material by 75%⁹.

Resources

The following is a list of resources to assist you with pollution prevention for the military sector.

¹ Significant New Alternatives Policy (SNAP) Program: <https://www.epa.gov/snap>.

² Environmental Management at Washington State National Security Facilities <https://fortress.wa.gov/ecy/publications/documents/0004004.pdf>.

³ Logistics Management Institute Army Pollution Prevention Program Proposal for a Pollution Prevention Investment Fund. <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA302526> (direct link to PDF document).

⁴ Safer Choice: <https://www.epa.gov/saferchoice>.

⁵ EPA Safer Chemical Ingredient List: <https://www.epa.gov/saferchoice/safer-ingredients>.

⁶ EPA Safer Choice - Search Products that Meet the Safer Choice Standard: <https://www.epa.gov/saferchoice/products>.

⁷ US Military -Green bullet' as effective as M*55 round consistently. <https://www.army.mil/article/56157>.

⁸ Medina, V.F., and Weisner, S.A. "Military Solid and Hazardous Wastes—Assessment of Issues at Military Facilities and Base Camps" (2011); p361: https://www.researchgate.net/profile/Victor_Medina9/publication/269874533_Military_Solid_and_Hazardous_Waste_-_Assessment_of_Issues_at_Military_Facilities_and_Base_Camps/links/549885ca0cf2c5a7e342c28d.pdf.

⁹ [2012 Secretary of Defense Award: Project Management Office Stryker Brigade Combat Team.](#)