

## Pollution Prevention (P2) for the Chemical Warehousing and Handling Industry

Pollution prevention (P2) is any activity that reduces waste at the source. Chemical warehousing and handling companies can incorporate various P2 activities in partnership with their customers to reduce waste. This informational fact sheet has been designed to provide the chemical warehousing and handling industry with P2 tips and suggestions to reduce waste at the source.

### Inventory Control

- Avoid raw material expiration! Follow the First-In, First-Out (FIFO) method which follows the logic that the oldest material is used first, while the newest material remains in inventory.
- Set up good inventory tracking procedures! A well designed Excel spreadsheet can track and flag material in storage that is close to expiration.
- Work with your customers to determine the best time to acquire and inventory material that is closer to the date they will need it.
- Determine the root cause for raw material rejection by the customer to assure it does not recur. Contamination from trace metals or from the container's materials of construction may cause the raw chemical to be outside the customer's required specifications and no longer usable.
  - ⇒ If the material cannot be used by the customer verify if it can be diverted to a secondary market.

### Fuel Economy Matters!

If you distribute chemicals to customers consider the fuel economy of your fleet.

See the official government source for fuel economy information; [www.fueleconomy.gov](http://www.fueleconomy.gov)<sup>2</sup>.

Learn about the [SmartWay program](#)<sup>3</sup> to help you achieve supply chain sustainability.

### Secondary Market Identification

Many companies in the chemical warehousing and handling industry store chemicals such as solvents and acids for their customers. When raw material becomes a waste, which can result from expiration, off specification (spec) chemicals, or demand shifts in the market, it is typically disposed. Prior to disposal, consider an outlet for the unused raw material.

- Verify if there is a secondary market for raw material that can no longer be used by your customers.
  - ⇒ Set up proper contracts with your customers that clearly define the process for identifying a secondary market for excess material.
- Contact customers regarding selling or using material that is approaching or has passed the expiration date.
- Talk to your waste vendors to see if they can assist you in finding secondary markets for off spec or expired material.
- Stay in compliance by following proper solid and hazardous waste regulations. Read [EPA's Final Rule: 2015 Definition of Solid Waste](#)<sup>1</sup> for further information.

### Spill and Leak Prevention

- Identify the root cause of chemical spills and leaks by tracking the amount of waste generated, or material released, and activities and areas in which they commonly occur.
- Complete a thorough written report on all spills and leaks and near misses as well as the implemented corrective actions that took place.
- Prevent leaks by properly training employees on stocking, loading and unloading material.
- Calibrate filling station equipment or train employees to avoid overfilling of containers.
- Check received containers and regularly inspect inventoried containers for cracks, rust, dents, corrosion and other damage that can cause leaks and spills.

## Improve Operating Procedures

- Ensure that all containers (containing both raw and waste material) are properly closed to avoid releases through emissions or spills.
- Keep waste streams separate and avoid mixing material.
- Keep storage and work areas clean, organized and make sure raw material containers are labeled with the contents and expiration dates. Make sure waste containers are properly labeled with contents and accumulation start dates.
- Follow the proper hazardous waste rules and regulations when disposing or recycling of hazardous waste. Visit [EPA's hazardous waste website](#)<sup>4</sup> or your local state environmental regulation agency for more information.

## Energy Conservation

Save energy and money by implementing simple changes from turning off lights or installing occupancy sensors to benchmarking your energy. See the following links for more information:

- [Build an energy program](#)<sup>5</sup> - Don't reinvent the wheel. Use the available energy resources from Energy Star to start developing your program.
- [EPA Portfolio Manager](#)<sup>6</sup> - This is an online tool to help you measure energy and water use as well as greenhouse gas emissions at your facility.

## Reducing Packaging and Container Waste

- Use the proper quality, packaging material and size for the specific need.
- Design efficient packaging with minimal material that is strong and durable.
- Reuse packaging material such as crates and boxes whenever possible .
- Request that your customer return material to you in the same packaging box or crate received from your company, when possible.
- Determine if you can return containers to the manufacturer such as empty totes or drums. Verify compliance with Department of Transportation (DOT) regulations and the hazardous waste and wastewater regulations related to washing or rinsing containers.



## Resources

<sup>1</sup> EPA. *Final Rule: 2015 Definition of Solid Waste*: <https://www.epa.gov/hwgenerators/final-rule-2015-definition-solid-waste-dsw>.

<sup>2</sup> Fuel Economy. *The Official U.S. Government Source for Fuel Economy Information*: <http://www.fueleconomy.gov/>.

<sup>3</sup> EPA. *SmartWay*: <https://www.epa.gov/smartway/learn-about-smartway>.

<sup>4</sup> EPA. *Hazardous Waste*: <https://www.epa.gov/hw>.

<sup>5</sup> Energy Star. *Build an Energy Program*: <https://www.energystar.gov/buildings/about-us/how-can-we-help-you/build-energy-program>.

<sup>6</sup> EPA. *Portfolio Manager*: <https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager>.

## Additional Resources

ADEQ. *Recycling Locator*: <http://www.azrecycles.gov/>.

Energy Star. *Energy Treasure Hunt Guide: Simple Steps to Finding Energy Savings*: [https://www.energystar.gov/sites/default/files/buildings/tools/Energy\\_Treasure\\_Hunt\\_Guide\\_Jan2014.pdf](https://www.energystar.gov/sites/default/files/buildings/tools/Energy_Treasure_Hunt_Guide_Jan2014.pdf)

Energy Star. *Data Trends - Energy Use in Non-Refrigerated Warehouses*: [https://www.energystar.gov/sites/default/files/tools/DataTrends\\_NRWarehouse\\_20150129.pdf](https://www.energystar.gov/sites/default/files/tools/DataTrends_NRWarehouse_20150129.pdf)