



Pollution that is not created does not have to be managed.

The Nuts and Bolts of Pollution Prevention (P2)

Pollution Prevention is Common Sense

Accountants call it loss control...engineers call it efficiency and managers call it total quality management... but most of us call it common sense!

Simply put, pollution prevention, also known as P2, is about avoiding the creation of pollution and waste, rather than trying to clean it up or manage it after the fact.

Traditionally, waste has been managed through treatment, recycling, control equipment, and landfilling. These are often referred to as “end-of-pipe” processes. These solutions cost money, and are sometimes not environmentally sound. P2 involves determining where waste is generated to identify how best to eliminate or reduce it at the source.

Common P2 Practices

Pollution prevention opportunities can be found throughout any operation. For instance, installing different equipment or technology, or changing raw materials or staff routines can result in pollution prevention. The ways in which P2 is achieved varies from one sector to another, but typically there are seven common practices.

1. Materials or Feedstock Substitutions

In many cases, it is possible to replace some of the materials/feedstock used in the production process or embedded within a product with non-polluting or less-polluting materials that perform equally well, or even better. This is sometimes referred to as source elimination.

P2 in action...

A commercial printer converted 80% of its work from solvent-based inks to UV curable inks reducing its use of volatile organic compounds (VOCs) from 7.8 tonnes to 3.9 tonnes in two years. Because UV ink has a longer shelf life than solvent inks, total ink consumption is reduced resulting in a reduction in ink deliveries, which in turn, reduces pollution caused by the transport of inventory.

2. Product Design or Reformulation

Think about company products — can a design change or reformulation improve efficiency and reduce environmental impact?

P2 in action...

Many products have been reformulated to reduce pollution while still performing their original functions. Mercury has been removed from thermostats and some fluorescent lights. Printing inks are available in water-based and UV-curable formats which reduce volatile organic compound (VOC) emissions.

3. Equipment or Process Modifications

Older equipment can be inefficient and existing processes may release an excess of pollutants and waste. In addition, there may be substitutes available for areas where pollutants are in use. Rethinking equipment and processes can result in improved efficiency and safety and reduced operating costs.

P2 in action...

A vehicle manufacturer developed a new packaging system and now receives 99% of its parts from suppliers in returnable packaging. This allowed the manufacturer to reduce waste, resulting from unusable wood pallets and cardboard, by 86% and 63% respectively.

4. Spill and Leak Prevention

Modifying existing procedures to prevent waste from spills or leaks can save money in product and clean-up costs as well as reduce worker exposure to hazards.

P2 tips...

- Install splash guards and drip trays around equipment.
- Install leak detection equipment.
- Conduct regular inspections and maintenance of pipes and storage containers.

5. On-site Reuse, Recycling or Recovery

All non-product outputs should be viewed as a loss of raw materials. On-site reuse and recycling could have significant environmental or economic benefits. Think of waste as a potential product that is being thrown away, and that a price is paid to manage that waste.

P2 in action...

A soap manufacturer reuses all excess plastic removed from bottles after molding when making new bottles. Water from product changeover clean-outs is collected in tote tanks and reused as process water in manufacturing. These reuse and recycling actions, along with other P2 initiatives, have reduced waste by an estimated 75% and yielded savings close to \$25,000 a year.

6. Improved Inventory Management or Purchasing Techniques

Many businesses are now practicing inventory techniques such as “first-in, first-out” or “just-in-time” delivery, which reduce waste and losses of material or product from expiration or over-stocking.

Think about implementing a policy to purchase products and raw materials that have a smaller impact on the environment over their entire lifecycle.

P2 tips...

- Avoid the need for drum disposal and purchase materials in reusable totes.
- Minimize inventory by establishing minimum and maximum storage quantities for chemical substances.
- Let suppliers know about P2 commitments... maybe they have some ideas!
- Purchase products certified by Environment Canada’s Environmental Choice Program (www.ecologo.org).

7. Good Operating Practices or Training

P2 can be part of ongoing efforts to enhance operating efficiencies and reduce health and safety risks through staff training and improved work procedures. Adjust production schedules to minimize equipment changeovers; review maintenance scheduling; and investigate staff training to improve material handling and identify P2 opportunities.

P2 in action...

Golf courses have found that improvements in maintenance and turf management can help reduce the areas treated with pesticides and fertilizers by up to 50%.

Give it a whirl!

P2 is as much about increasing company efficiencies, reducing waste management costs, improving flexibility and gaining a competitive advantage as it is about enhancing an ability to protect human health and the environment.

Want to know more?

Here are some additional sources of information about pollution prevention:

Pollution Prevention Planning Database and Web site

www.ec.gc.ca/cepap2

This site contains valuable information such as:

- *Pollution Prevention Planning Handbook and model plan*
- *Pollution Prevention Planning Fact Sheets*

Canadian Pollution Prevention Information Clearinghouse (CPPIC)

www.ec.gc.ca/cppic

An online P2 database and comprehensive resource that provides quick access to over 1800 relevant P2 resources including case studies, fact sheets, training manuals/guides, toolkits, web sites, and much more.

Pollution Prevention Success Stories

www.ec.gc.ca/pp

A web site showcasing over 100 success stories recognizing the P2 results achieved by companies, institutions, organizations, and facilities across Canada.

For further information, please contact

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