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The common processes and raw materials used in manufacturing paints and coatings have the potential to impact the quality of water, air, earth and a businesses bottom line. There are many federal, state and local regulations that may apply to the processes used in coating manufacturing. Below are descriptions of how air, water and soil are affected by manufacturing processes. Also, a table of the associated costs of compliance is provided.

Environmental Compliance

Air Quality
Paint and coatings manufacturing affects air quality in two ways. First, the raw materials required to produce a finished product contain Volatile Organic Compounds (VOCs). These VOCs, ingredients in forming low-level ozone smog, are emitted into the air during transfer, blending, settling or any other time the material is exposed to air. Many VOCs have been listed as hazardous air pollutants (HAPs), which are regulated under air pollution programs. HAPs (or air toxics) are chemicals that cause serious health and environmental hazards. The products used for cleaning equipment also typically contain VOC and HAP chemicals. Secondly, the pigment dust that may be generated during the manufacturing process, known as particulate matter emissions (or PM-10 emissions; the 10 refers to the size of dust particles), can also have an adverse effect on air quality and workplace health. This particulate matter, which can contain HAPs, heavy metals, and other solids, is emitted into the air during transfer and blending of the materials, and is mostly associated with fugitive dust and baghouse emissions.

Water Quality
Paint and coatings manufacturing affects water quality in a variety of ways. Most contamination of waterways occurs either from stormwater run-off or process (cleaning/cooling) wastewater discharge. Stormwater is affected mainly from storing raw materials and hazardous wastes outside. Process wastewater and other controlled discharges of cleaning and process wastewater often are contaminated with solvents and heavy metals.

Hazardous Waste
Paint and coatings manufacturers generate a number of wastes from their processes. The raw materials required in the manufacturing process contain Volatile Organic Compounds (VOCs) and heavy metals, as do many of the by-products of the process, such as off-specification paint that is unusable, or material from the cleanup of spills and equipment. If the presence of VOCs and heavy metals in the resulting waste stream exceeds allowable levels for solid waste, as determined by regulatory standards, the paint and coatings manufacturer is required to handle the waste as a hazardous or dangerous waste.

Solid Waste
Paints and coatings manufacturers generate solid waste in a number of ways. Examples include used containers, spent filters, dried paints, pallets, and packaging materials. The solid waste can be in the form of solids, liquids, or sludges. These materials, if not determined to be a dangerous waste, are subject to solid waste regulations, since the improper disposal of wastes can result in pollution of groundwater, surface water and air.

Costs of Compliance

Using raw materials and processes that have an environmental impact are very costly. Most often, businesses usually only account for waste disposal costs rather than considering all of the associated costs with operating inefficient equipment and using toxic raw materials.

The following table shows the different categories of costs associated with simply being in compliance and those costs incurred that are typically accounted for as oversight. Considering all of the costs associated with wasteful practices may motivate a business to change. (Note: Italicized items are costs that are often overlooked, but can really add to the total costs of managing waste.)

Compliance Costs	Oversight Costs

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Topic Hub: Paint & Coating Manufacturing **Subsection : Reasons for Change**

Receiving Area
- Spill response equipment
- Emergency response plan

Raw Materials
- *Storage facilities*
- Secondary containment
- Right-to-know training
- Reporting and records
- *Safety training*
- Container labels

Process Area
- Safety equipment
- Right-to-know training
- Waste collection equipment
- *Emission control equipment*
- *Sampling and Testing*
- *Reporting and records*

Solid and Hazardous Waste
- *Sampling and Testing*
- *Containers*
- Labels and labeling
- Storage areas
- Transportation Fees
- *Disposal fees*

Air and Water Emissions Control
- *Permit preparation*
- *Permit fees*
- *Capital costs*
- *Operating expenses*
- Recovered materials
- Inspection and monitoring
- Recording and reporting
- Sampling and testing
- Emergency planning
- *Discharge fees*

Purchasing
- *Product/vendor Research*
- Regulatory impact analysis
- *Inventory control*

Engineering
- Hazard analysis
- *Sampling and testing*

Production
- *Employee training*
- Emergency planning
- Medical monitoring
- *Re-work*
- Waste collection
- *Disposal management*
- Inspections and audits

Marketing
- Public relations

Management
- Regulatory research
- *Legal fees*
- Information systems
- *Penalties and fines*
- Insurance

Finance
- *Credit costs*
- Tied-up capital

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The Topic Hub™ is a product of the Pollution Prevention Resource Exchange (P2RX™)

The Paint & Coating Manufacturing Topic Hub™ was developed by:

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