



# Environmental Information

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## Hazardous Waste Facts

The Resource Conservation and Recovery Act of 1976 requires the U.S. Environmental Protection Agency (EPA) to institute a national hazardous waste regulatory program. Key provisions are for development of criteria to determine which wastes are hazardous; institution of a system to track wastes from point of generation to point of disposal; and standards for operation of disposal facilities. States may obtain EPA authorization to conduct their own regulatory program. In States that choose not to develop a hazardous waste program, or do not gain authorization for a program, EPA must administer the program.

### Hazardous Waste Definition

Proposed Federal regulations list about 160 wastes and waste streams, in addition to four characteristics for identifying a waste as hazardous: ignitability, corrosivity, reactivity, and toxicity.

"Hazardous waste" includes acids, toxic chemicals, caustics, explosives, and other harmful or potential harmful wastes.

### Quantities of Hazardous Wastes

EPA estimates that 10 to 15 percent of the annual production of about 34.5 million metric tons (wet) of industrial waste is hazardous. Quantities of hazardous waste are expected to increase by 3 percent annually.

EPA estimates that 90 percent of hazardous waste is managed by practices which will not meet new Federal standards.

Major hazardous waste generators, among 17 industries EPA has studied in detail, are:

Million Metric  
Tons (Wet Basis)  
(1977 Estimates)

Organic Chemicals..	11.7	Textiles.....	1.9
Primary Metals.....	9.0	Petroleum Refining..	1.8
Electroplating.....	4.1	Rubber & Plastics...	1.0
Inorganic Chemicals	4.0	Other.....	1.0

Total 34.5

70 to 80 percent of these industries' hazardous waste is disposed of on the generator's property:

80 percent is disposed of in nonsecure ponds, lagoons, or landfills

10 percent is incinerated without proper controls

10 percent is managed acceptably as compared to proposed Federal standards, i.e., by controlled incineration, neutralization, secure landfills, and recovery.

About 60 percent hazardous waste is in the form of liquid or sludge.

Ten States generate 65 percent of all hazardous waste: Texas, Ohio, Pennsylvania, Louisiana, Michigan, Indiana, Illinois, Tennessee, West Virginia, California.

#### How Damage Occurs

Major routes for damage are:

- (1) direct contact with toxic wastes
- (2) fire and explosions
- (3) groundwater contamination via leachate
- (4) surface water contamination via runoff or overflow
- (5) air pollution via open burning, evaporation, sublimation, and wind erosion
- (6) poison via the food chain (bioaccumulation)

EPA has information on over 400 cases of damage to health or the environment due to improper hazardous waste management.

#### Technology and Facilities

Environmentally adequate technology options are feasible for treatment and disposal of hazardous wastes; their costs are substantially in excess of inadequate practices (e.g., open dumping). Secure chemical landfills are significantly less expensive than other treatment options; however, costs vary according to type and volume of waste handled.

Secure chemical landfill....	\$30-55/Metric Ton
Incineration (land based)...	\$75-265/Metric Ton (\$110 typical)
Landspreading.....	\$2-25/Metric Ton (\$6 typical)
Chemical fixation.....	\$10-30/Metric Ton
Physical, chemical, biological treatment.....	variable

The 17 industries EPA has studied in detail now spend \$155 million annually for hazardous waste management; this will increase to an estimated \$750 million a year under proposed regulations, according to EPA estimates. Cost of proper hazardous waste management will be about 0.28 percent of annual value of production (approximately \$267 billion) for the 17 industries.

At least 20 industrial waste exchanges, i.e., information clearing-houses that provide information on specific wastes to companies interested in using the wastes as raw materials, are now in operation.

## Federal Regulations

Seven sets of regulations and guidelines have been proposed and/or are being developed by EPA under Subtitle C of the Resource Conservation and Recovery Act:

Subtitle Section	Title of Regulation	Proposed in Federal Register
3001	Identification and listing of Hazardous Waste	December 18, 1978
3002	Standards Applicable to Generators of Hazardous Waste <sup>1</sup>	December 18, 1978
3003	Standards Applicable to Transporters of Hazardous Waste <sup>1</sup>	April 28, 1978
3004	Standards Applicable to Hazardous Waste Facilities	December 18, 1978
3005	Permits for Treatment, Storage or Disposal of Hazardous Waste <sup>2</sup>	February 1979 (tentative)
3006	Guidelines for Development of State Hazardous Waste Programs <sup>2</sup>	February 1, 1978 (to be repropoed in February 1979 (tentative))
3010	Notification System	July 11, 1978

Cradle-to-grave control via manifests and reporting is the keystone of the program; only permitted sites may treat, store, or dispose of hazardous waste.

EPA anticipates an estimated 285,000 notifications from generators, transporters, and those who treat, store, or dispose of hazardous waste. An estimated 30,000 permits will be issued by EPA and the States over the next 5 to 6 years to those who store, treat, or dispose of hazardous waste.

Other EPA Acts related to hazardous waste controls:

Clean Air Act--sets standards for hazardous air pollutants.

Clean Water Act--prohibits discharge of toxic pollutants in toxic amounts into navigable waters of the United States.

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<sup>1</sup>The Department of Transportation also proposed regulations pursuant to the Hazardous Materials Transportation Act pertaining to transportation of hazardous waste, which were published in the Federal Register, May 25, 1978.

<sup>2</sup>Sections 3005 and 3006 will be integrated with proposed rules under the Clean Water Act and the Safe Drinking Water Act.

Safe Drinking Water Act--authorizes EPA to set maximum contaminant levels for public drinking water systems.

Federal Insecticide, Fungicide, and Rodenticide Act--authorizes EPA to regulate registration, treatment, disposal, and storage of all pesticides, including labeling requirements.

Toxic Substances Control Act--authorizes EPA to obtain data on health effects of chemical substances and to regulate the manufacture, use, and disposal of a chemical substance or mixture where warranted.

State Programs

EPA anticipates that 41 States will apply for "interim authorization," which allows States to operate the program for a period of 2 years after promulgation of the Federal regulations while upgrading their programs.

Within 2 years of promulgation, States must apply for and secure "full authorization." The three criteria for "full authorization" are: (1) equivalence to Federal program; (2) consistency with other State and Federal programs; and (3) adequacy of enforcement.

FY 79 grants specifically for hazardous waste program development total \$15 million. The President's FY 80 budget requests \$18.4 million.

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