

**Área: EDU**

## Environmental legislation in university laboratories

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### Environmental legislation in universities

Improper disposal can cause accidents, environmental damage, and fines of up to R\$ 50 million, in addition to imprisonment.

Managing chemical waste in laboratories is a legal obligation, not just an environmental responsibility.

### Resumo/Abstract

Environmental legislation applied to university laboratories in Brazil consists of federal laws, resolutions, and technical standards aimed at ensuring safety, environmental protection, and proper disposal of waste from teaching, research, and outreach activities. These regulations provide clear guidelines for managing hazardous waste, especially chemical waste.

CONAMA Resolution No. 357/2005 is a key legal foundation, defining criteria for handling hazardous waste—treatment, storage, and transportation—to minimize risks to health and the environment. It is complemented by ABNT NBR 10004, which classifies solid waste, with Class I for hazardous waste based on flammability, corrosivity, reactivity, and toxicity. Generators must issue a Waste Classification Report (LCR) with technical responsibility.

Law No. 12.305/2010, the National Solid Waste Policy (PNRS), sets general guidelines for waste management, focusing on reduction, reuse, and recycling. Universities must implement environmental management plans and ensure proper disposal, especially in laboratories.

Law No. 9.605/1998 defines penalties for non-compliance, reinforcing institutional legal responsibility. Effective waste management involves a hierarchy of actions: source reduction, segregation, on-site treatment, and environmentally sound disposal.

Segregation must be daily, separating waste by category and avoiding incompatible mixtures. Labeling is mandatory and must follow the Hommel Diagram, indicating health risks from 0 to 4. NR 26 provides guidance on safety signage, requiring hazardous waste to be clearly identified and stored appropriately, away from heat sources and with ventilation. Temporary storage should occur in the lab, with precautions, as the generator is responsible.

Lack of control and improper disposal can cause accidents, contamination, and legal sanctions—administrative, civil, and criminal. Penalties include imprisonment from one to four years and fines. Individuals may be required to repair damage and restore the environment.

The university, as generator, is responsible from creation to final disposal. Absence of a management plan and irregular disposal are serious infractions. The most common sanction is an administrative fine from R\$ 5,000 to R\$ 50 million, depending on severity, pollution potential, or recurrence.

Activities may be suspended until issues are resolved. In outsourced services, the contracting party may be held subsidiarily liable due to negligence in selection (*culpa in eligendo*) or supervision (*culpa in vigilando*).

ABNT. NBR 10004:2004 – Classificação de Resíduos Sólidos. 2004.

ABNT. NBR 10004-1:2024 – Classificação de Resíduos – Parte 1: Requisitos. 2024.

CONAMA. Resolução nº 357, de 17 de março de 2005. 2005

BRASIL. Lei nº 12.305, de 2 de agosto de 2010 – Política Nacional de Resíduos Sólidos. 2010.

BRASIL. Lei nº 9.605, de 12 de fevereiro de 1998 – Lei de Crimes Ambientais. 1998.

### Acknowledgments

A UNIOESTE e ao programa de pós-graduação em Ciências ambientais

*31º Encontro de Química da Região Sul- Unioeste – Campus Toledo*