



Chemical Safety for Wineries and Vineyards

Focus on Chemical Labeling

Introduction

Wineries and vineyards operate in an environment where the careful handling of chemicals is not just a regulatory requirement but a cornerstone of safe and sustainable operations. From the nurturing of grapevines to the creation of fine wines, chemicals play a vital role—whether used for pest control, cleaning, sanitation, or in the winemaking process itself. However, each chemical brings potential risks to people, property, and the environment. This bulletin provides guidance on chemical safety with a particular focus on proper labeling to reduce loss, enhance workplace safety, and maintain compliance.

Common Chemicals in Wineries and Vineyards

Wineries and vineyards may use a broad array of chemicals, including:

- **Pesticides and Herbicides:** Glyphosate, copper sulfate, sulfur, and various fungicides for the protection of vines.
- **Cleaning and Sanitizing Agents:** Peracetic acid, sodium hydroxide, citric acid, chlorine-based cleaners, and quaternary ammonium compounds to maintain hygiene in production areas and equipment.
- **Preservatives and Additives:** Potassium metabisulfite, sulfur dioxide, tartaric acid, and bentonite, which are used during winemaking for stability, clarification, and preservation.
- **Laboratory Reagents:** Chemicals used for testing and monitoring, such as ethanol, acetic acid, and pH buffers.

Each of these chemicals, while essential, presents specific hazards that must be controlled.

The Importance of Chemical Safety

Improper handling or storage of chemicals can result in fires, explosions, environmental contamination, injury, and serious health consequences for workers. Producers must establish robust safety protocols and comply

with government regulations, such as OSHA's Hazard Communication Standard (29 CFR 1910.1200) in the United States and similar standards elsewhere. Effective loss control starts with the foundational element of labeling.

Labeling: The First Line of Defense

Chemical labeling is a vital component of hazard communication, providing immediate information to anyone handling or encountering chemicals. Proper labeling ensures that employees can identify chemicals quickly and understand the risks and safety precautions associated with their use.

REQUIREMENTS FOR CHEMICAL LABELING

Labels must be clear, durable, and accessible. Key elements include:

- **Product Identifier:** The name or number used for the chemical on the label.
- **Supplier Information:** The name, address, and telephone number of the manufacturer or importer.
- **Hazard Pictograms:** Standardized symbols that quickly convey health, physical, and environmental hazards.
- **Signal Word:** "Danger" or "Warning" depending on the severity of the hazard.
- **Hazard Statements:** Descriptions of the nature and degree of the chemical's hazards, such as "Causes severe skin burns and eye damage."
- **Precautionary Statements:** Steps to minimize risks, such as "Wear protective gloves/protective clothing/eye protection/face protection."

BEST PRACTICES IN LABELING

- Never remove or deface existing labels. If a label is damaged or illegible, replace it immediately.
- Ensure all secondary containers (such as spray bottles) are labeled with the chemical's name and

hazard information.

- Train employees to recognize and interpret label elements, particularly pictograms and hazard statements.
- Conduct periodic audits of chemical storage areas to verify that labels are present and up to date.

Integrating Labeling into Safety Programs

Creating a safety culture in wineries and vineyards requires active management of chemical risks. Integrating labeling protocols into daily operations is essential.

EMPLOYEE TRAINING

- Incorporate chemical safety and labeling awareness into onboarding and ongoing training programs.
- Run regular drills on emergency response, focusing on chemical spills, exposures, and fire scenarios.
- Provide language-appropriate materials to ensure comprehension among all staff.
- Encourage staff to ask questions and report any issues with chemical labeling.

REGULAR AUDITS AND INSPECTIONS

- Establish a schedule for inspecting chemical storage areas and checking labels.
- Document and address any deficiencies immediately.
- Involve supervisors and safety committees in the review process to encourage accountability.

INCIDENT REPORTING

- Maintain a clear system for reporting accidents, near misses, and unsafe conditions involving chemicals.
- Use incident data to improve chemical safety protocols and training.

Special Considerations for Wineries and Vineyards

Wineries and vineyards often operate in remote or outdoor locations, with seasonal and temporary staff. These factors underscore the importance of:

- Ensuring field workers have ready access to labeled chemicals.
- Using weatherproof labels for outdoor use.
- Adapting training to the needs of non-English speakers and temporary staff.
- Preventing chemical drift and runoff to protect water sources and neighboring properties.

Emergency Preparedness

Proper labeling supports effective emergency response. In the event of a spill, exposure, or fire:

- Quickly identify the chemical involved using its label.
- Follow recommended first-aid and containment procedures as outlined in workplace protocols.
- Notify local authorities if required, especially for significant releases.
- Decontaminate affected areas and equipment in line with guidelines.

Environmental Stewardship

Responsible chemical management protects not only workers but also the surrounding land, water, and communities. Labeling helps ensure chemicals are used, stored, and disposed of correctly—minimizing environmental risks.



Conclusion

Chemical safety in wineries and vineyards is a continuous process that demands diligence, awareness, and collaboration. By prioritizing accurate labeling, managers and staff can greatly reduce risks, prevent losses, and support a culture of safety and responsibility. The investment in chemical safety protects employees, customers, and the legacy of fine winemaking for generations to come.

References and Further Reading

- OSHA Hazard Communication Standard (29 CFR 1910.1200)
- NIOSH Pocket Guide to Chemical Hazards
- EPA Agricultural Worker Protection Standard
- Wine Institute – Guidelines for Sustainable Winegrowing
- National Association of American Wineries – Safety Resources

For More Information:



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