

**Practical Spray  
Technology  
Fundamentals and Practice**

Charles W. Lipp

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## ***Preface***

My desire is to provide knowledge so a person can develop an understanding of a specific subject in sufficient depth and breadth to solve a problem. The writing for the book began after teaching a spray technology course for spray practitioners. The content provides an overview of available technologies, practical design considerations, and the fundamentals. Emphasis is on the application to resolve common design problems. One objective was to format the book so a user can rapidly find information useful in solving problems. Example calculations and qualitative application comments provide engineering insight. These examples show the specifics of how to apply an equation to solve a problem. Today's increasing demands and shorter time-lines require managers and engineers to solve problems expeditiously. All photographs and illustrations, including the design of the book cover, were created by the author to achieve clarity and consistency.

My background of more than 35 years as an industrial problem solver taught me that solutions that work in the long term must consider the influence of the systems surrounding the atomizer. Selecting the most appropriate nozzle is a critical aspect but only the beginning. The optimum design of spray systems is sensitive to energy cost and requires high reliability. The increasing need for highly reliable designs is critical to many applications and significantly impacts the preferred system design. A successful design often considers and evaluates systematically the potential failure modes. Reliable designs also require the proper feed and control systems to yield the optimized result. System considerations can greatly influence the spray technology selected. Operational and system design issues are critical to the application for most users; consequently three chapters are devoted to this subject. These complement the spray nozzle manufacturers' web based nozzle selection tools.

## ***Structure of Chapters***

This book has five sections as outlined in the table below. Readers are encouraged to use the sections that fit their problem solving needs.

<b>Section</b>	<b>Chapters</b>	<b>Content</b>
1	1-3	Introduction, overview of historical developments, classification of types of spray nozzles, and overview of spray applications
2	4-6	Measuring spray characteristics, spray fundamentals, and modeling
3	7-11	Spray nozzle types and technologies, different types of spray nozzles, examples, and performance characteristics
4	12-15	Design considerations, system reliability, technology selection, and operational considerations
5	Appendix	Glossary of terms, nomenclature, unit conversions, and selected physical properties