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Sigma-Aldrich

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Introduction

Sigma-Aldrich: The Story of An American Company is a comprehensive exploration of one of the most influential and dynamic enterprises in the story of American scientific achievement and industry. What started as two small, regionally focused chemical companies—Sigma Chemical Company in St. Louis, Missouri, and Aldrich Chemical Company in Milwaukee, Wisconsin—grew to become a global leader in biochemicals, organic chemicals, and laboratory tools, leaving an indelible mark on life sciences, biotechnology, and innovation worldwide.

This book charts not just the corporate evolution but also the spirit of entrepreneurship, scientific curiosity, and relentless pursuit of quality that anchored Sigma-Aldrich and its predecessors. It is a story shaped by its founders' ingenuity—from Aaron Fischer and Daniel Broida's pivot into specialty chemicals during a time of need, to Alfred Bader's vision of democratizing access to organic research chemicals. These early decisions defined the company's DNA and established the tone for decades of growth, adaptability, and service to scientists around the globe.

Through the lens of pivotal mergers, strategic acquisitions, and constant reinvention, Sigma-Aldrich's narrative mirrors the broader shifts in American business—embracing globalization, fostering research and development, harnessing the power of branding, and adapting to the rapidly changing technological landscape. Its integration into Merck KGaA and rebranding as MilliporeSigma mark a new chapter, but its legacy and culture remain deeply rooted in its American origins and its commitment to enabling scientific progress.

Beyond business metrics and product lines, this volume seeks to illuminate the ways in which Sigma-Aldrich has shaped modern science: by empowering academic and industrial laboratories, supporting pioneering research in genetics and medicine, and setting standards for reliability and excellence. The reach of its catalog has spanned continents and disciplines, enabling countless breakthroughs and supporting innovation in fields as varied as pharmaceuticals, agriculture, and materials science.

Yet, the company's journey has not been without challenges. From regulatory scrutiny and shifting competitive landscapes to controversies in compliance and questions about its role in the larger corporate ecosystem, Sigma-Aldrich's history offers lessons in resilience and the complexity of operating at the crossroads of science and commerce.

As the Sigma-Aldrich brand moves forward within the global framework of

MilliporeSigma, its commitment to social responsibility, sustainable business practices, and community engagement will play an increasingly vital role. This book offers both a chronicle of the past and a roadmap for the future, capturing the enduring relevance of Sigma-Aldrich—as both a business and as a symbol of the transformative power of science, innovation, and American enterprise.

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CHAPTER ONE: The Crucibles of Chemistry: Early American Roots

The story of Sigma-Aldrich, a company whose name would become synonymous with scientific research and discovery, begins not as a single entity, but as two distinct entrepreneurial ventures, each born from the fertile, yet challenging, landscape of mid-20th century America. These were the Sigma Chemical Company, rooted in the industrial heartland of St. Louis, Missouri, and the Aldrich Chemical Company, which took shape amidst the dynamic atmosphere of Milwaukee, Wisconsin. Their independent beginnings, separated by just over a decade, laid the groundwork for a future merger that would redefine the landscape of chemical and biochemical supply.

The 1930s were a period of immense change and innovation in the United States, even as the nation grappled with the lingering effects of the Great Depression. It was in this environment that the seeds of Sigma Chemical Company were sown. In St. Louis, Missouri, in 1935, two brothers, Aaron Fischer and Bernard Fischlowitz, both chemical engineers, established a small consulting firm they called Midwest Consultants. Their initial focus was broad, assisting local businesses in the production of various specialty items, including everything from cosmetics to inks and adhesives for cardboard packaging. The company formally incorporated in 1935, and it wasn't long before they brought in another talented chemical engineer, Daniel Broida, a Washington University graduate, to help manage their expanding consulting and production operations.

As the world plunged into World War II, the needs of American industry shifted dramatically. Midwest Consultants, like many businesses across the nation, found itself contributing to the war effort, manufacturing components for ammunition and parts for signal flares. Amidst the pervasive shortages brought on by the war, a particular scarcity emerged: saccharin. This artificial sweetener, a once readily available commodity, became a critical need. Recognizing this opportunity, Daniel Broida, with a keen eye for market demand and a pragmatic approach to chemistry, spearheaded the formation of Sigma Chemical Company as a division of Midwest Consultants. His determination was clear: to make Sigma Chemical Company a significant player in saccharin production. This strategic pivot marked Sigma's official entry into the chemical manufacturing arena.

Sigma's early success with saccharin laid the foundation for a much larger ambition. The true breakthrough, and a defining moment for the fledgling company, arrived in 1946. It was then that Sigma Chemical Company achieved a remarkable feat: becoming the first company to successfully manufacture pure adenosine triphosphate,

or ATP. ATP, often referred to as the "molecular currency" of intracellular energy transfer, is a crucial biochemical compound indispensable for countless biological processes. Its large-scale production by Sigma was a turning point, propelling the company squarely into the biochemical and diagnostic product markets. This marked a strategic shift, focusing Sigma's energies toward serving the burgeoning needs of research scientists.

With ATP as its flagship product, Sigma quickly cultivated a diverse customer base, ranging from hospitals to university laboratories. The company's commitment to high-quality products and, perhaps more importantly, exceptional customer service, became hallmarks of its burgeoning reputation. Under Daniel Broida's leadership, Sigma Chemical Company began to build a formidable name for itself, a reputation that would extend far beyond the borders of Missouri. This focus on the needs of the scientific community and a dedication to quality would prove to be a powerful engine for growth in the years to come.

Meanwhile, in Milwaukee, Wisconsin, another American entrepreneurial spirit was at work, laying the groundwork for what would become Aldrich Chemical Company. The year was 1951, and the principal figure was Dr. Alfred R. Bader, a Harvard-educated chemist with a unique vision. Bader, who had experienced firsthand the frustration of obtaining obscure organic chemicals as a graduate student, envisioned a company that would cater specifically to the unmet needs of research laboratories. He partnered with his friend, attorney Jack Eisendrath, and together, they launched Aldrich Chemical Company with an initial investment of just \$250 each.

Aldrich began as a straightforward mail-order business, a practical approach for a startup seeking to reach a broad scientific audience without a massive sales force. Their initial strategy was to focus on manufacturing organic chemicals that were not readily available from larger, more established companies like Eastman Kodak, which at the time was a leader in the chemical industry. Aldrich's very first product, 1-methyl-3-nitro-1-nitrosoguanidine (MNNG), a methylating reagent, exemplified this niche-filling approach. Other early offerings included compounds like 3-hydroxypyridine, which would later become a bestseller for Aldrich, ethyl diazoacetate, tetranitromethane, and ethanedithiol.

Dr. Bader's ambition, however, quickly expanded beyond merely filling gaps in the market. He soon aimed for direct competition with larger players, aspiring to offer a comprehensive array of organic chemicals to research laboratories, particularly those within pharmaceutical companies. This vision was underpinned by a commitment to the needs of the organic chemist, ensuring that a diverse range of starting materials was readily available, thereby allowing researchers to dedicate more of their time to their actual projects rather than the laborious synthesis of basic compounds.

The company's catalog quickly became a significant reference tool within the scientific

community. What started as a single-page listing in the early 1950s, meticulously compiled by Bader himself, rapidly expanded to include an impressive 40,000 chemicals. This comprehensive catalog, much like Sigma's dedication to customer service, became a distinguishing characteristic of Aldrich. It was not just a list of products; it was a testament to the company's commitment to providing a wide selection of organic chemicals, complete with structures, physical data, and literature references, making it an invaluable resource for chemists worldwide. Aldrich Chemical Company, through its targeted approach and commitment to variety, was steadily building its own foundation as a crucial supplier to the world of organic chemistry.

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