



SUMMARY

- **Experience:** 40+ years of experience in the development, manufacturing and quality control of aerosol products. Worked with multiple aerosol product categories: Household, Health & Beauty, Industrial and Food Aerosols. Aerosol product types included: Personal Care (hairsprays, body sprays, mousse), Household Products: (surface cleaners, air fresheners, insecticides, lubricants, etc.), Food Aerosols: cooking release sprays (PAM) and aerosol flavoring spray, Medical devices (MDI's).

- **Accomplishments:** Extensive experience in the hands-on development of aerosol consumer package goods from laboratory prototypes through commercialization. Developed numerous aerosol product types for regional, national and international markets. Implemented the scale-up of aerosol products from R&D into full scale production. Designed product specific Quality Assurance programs. Worked extensively with aerosol contract packagers. Extensive troubleshooting experience leading to successful resolution of technical issues in R&D, Quality and Manufacturing.

- **Areas of Technical Expertise:**
 - ***Aerosol Technology:*** Broad based experience in Aerosol Formulations, Propellants, and Packaging Systems (valves and containers).

 - ***Education / Training:*** Develop and deliver customized seminars in Aerosol Technology, Spray Performance Optimization, Aerosol Safety Training, and, Aerosol Product Quality Assurance Systems. As well as provide -on training in aerosol laboratory procedures & lab safety evaluations.

 - ***Aerosol Manufacturing:*** Assist marketers of aerosol products with identifying suitable packagers, develop product specific aerosol QA systems, conduct aerosol safety audits.

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WORK EXPERIENCE

6/01 – Present: **AEROSOL TECHNICAL SOLUTIONS, LLC, (ATS)** Raymond, New Hampshire.

Owner / Principal Consultant: ATS provides technical consulting services relating to all aspects of Aerosol Technology, Aerosol Product & Package Development, Quality Assurance, and Manufacturing Support. Projects include: assisting in R&D projects, troubleshooting issues in R&D, aerosol manufacturing, product quality – root cause analysis to reduce customer complaints, co-packager management & auditing, and optimizing aerosol spray performance, among others. ATS also designs & presents customized on-site technical training programs in Aerosol Technology, Aerosol Product Development, and Aerosol QA. ATS also provides on-site safety audits of laboratories and manufacturing operations.

6/99 – 6/01: **SUMMIT PACKAGING SYSTEMS**, Manchester, New Hampshire.

Technical Manager: Responsible for customer technical support, and aerosol development programs focused to provide Marketers and Contract Packagers with suitable valve systems to meet their needs for new and existing products. Also, continually on-call to travel to customer locations to diagnose technical issues, and, provide technical support for customer driven development programs as well as internal plant support projects.

7/91 – 6/99: **CONAGRA / AMERICAN HOME FOODS / IHF**, Milton, PA.

Technical Manager: (7/93 to 6/99) Direct responsibility for the Technical support and PD functions for Private Label, FoodService, PAM, Polaner, and Guldens Mustard product lines. Combined sales of managed Product Lines: \$550MM/yr. Responsible for the innovation and development of: new Aerosol Products, Canned Pasta, Condiments, and Snacks. Also, acted as the company's primary Technical Sales Representative for Private Label New Business accounts. Manage a staff of 7 professionals.

Section Head / Food Enhancements: (7/91 to 6/93) Primary responsibilities: to build a state of the art aerosol research lab, and to hire and train a group of professionals in Aerosol Technology and Aerosol Product Development. Brand Responsibility included PAM Cooking Sprays (\$85MM/yr. sales). Invented and developed a novel aerosol technology to exceed national VOC regulatory requirements for aerosol cooking sprays. A patent application was filed. Managed a staff of three (3) professionals.

1/88 - 5/91: **BRISTOL-MYERS / CLAIROL DIVISION**, Stamford, Connecticut.

Project Supervisor: (11/90 - 5/91) Responsible for the development of novel products for Clairol's consumer and professional haircare product lines. Brand responsibility included: Final Net, ClairMist, Logics and Condition. Identified and developed new resin technology for use in low/no VOC "next-generation" water based fixative products. Awarded US patent # 5,314,684.

Project Leader: (1/88 - 11/90) Developed the following product introductions: FINAL NET ULTIMATE HOLD AND SPRITZ (contains novel resin/neutralization system), CLAIRMIST AEROSOL LINE (six SKU's). Also responsible for the management of the aerosol filling laboratory.

7/86 - 1/88: **CHESEBROUGH-PONDS / UNILEVER CORP.**, Trumbull, Connecticut.

Senior Research Chemist: Developed new aerosol and liquid products for the SPECTRACIDE, RID-A-BUG and HOT SHOT insecticide lines. Designed and implemented development programs to evaluate new active ingredients. Coordinated joint development programs with suppliers and Universities. Provided technical support to contract packagers for the Division. Supervised start-ups for all formula changes and new products. Trained technicians and chemists in aerosol technology. Managed a staff of three.

8/85 - 7/86: **SUMMIT PACKAGING SYSTEMS**, Manchester, New Hampshire.

Technical Service / Technical Sales Representative: Responsibilities included the development of aerosol valve systems, primarily for Midwest & East Coast accounts. Product categories included: insecticides, air fresheners, lubricants, polishes, AP's, deodorants, and colognes. Responsible for technical sales presentations and trouble-shooting production start-ups at: Noxell, Boyle-Midway, Faberge, Lehn & Fink, Carter-Wallace, and other primary accounts. Assisted sales reps in developing new business opportunities. Designed a new total release fogger actuator and worked closely with Summit's sales force to secure order commitments.

6/78 - 8/85: **AMERICAN HOME PRODUCTS CORP. BOYLE-MIDWAY DIV.** Cranford, New Jersey.

Product Development Supervisor: (6/84 - 8/85) Primary responsibilities: to design & implement product development programs which culminated in novel aerosol products. Product lines: Wizard Air Freshener, Black Flag Insecticides, 3-in-1 Oil, Woolite Carpet Cleaner, EasyOff Oven Cleaner, PAM cooking Spray, Speed-Starch. Conducted on-site trouble-shooting at all aerosol production locations, coordinated testing for claims support as required by the EPA and media networks. Trained junior personnel in aerosol technology. Managed four scientists and technicians. Awarded Canadian Patent #1,152,429 "Low Odor Pesticide."

Project Leader: (7/81 - 6/84) Responsible for the bench development of aerosol and non-aerosol formulations. Developed protocols for product efficacy testing, and product stability testing. Developed manufacturing directives for various aerosol, liquid and powder products. Trained and managed 3 chemists and technicians.

Chemist: (7/79 - 7/81) Extensively trained in the formulating of aerosols and emulsions. Designed o/w and w/o products with hydrocarbon and Dymel propellant systems. Other assignments included routine line maintenance functions: monitoring stability packs, evaluation of new/alternative raw materials, and implementing cost saving programs.

Pilot Laboratory Operator: (6/78 - 7/79) Responsible for the set-up and batching of products for stability or market testing. Products included: air-freshness, food coatings, insecticides, oven cleaners, floor-waxes and lubricating oils.

EDUCATION & PROFESSIONAL ADVANCEMENT

RUTGERS UNIVERSITY, NJ: BS Degree in Biology. Emphasis in Chemistry and Computer Science

UNION COLLEGE, NJ: Associates Degree in Environmental Science

PROFESSIONAL ADVANCEMENT COURSES:

Aerosol Technology

Food Science

DuPont DYMEL™ Propellants

Aerosol Emulsion Technology

Suspensions and Emulsions

Technology of Cosmetic Raw Materials

EXPERIENCE IN PRESENTING SEMINARS & WORKSHOPS IN AEROSOL TECHNOLOGY

Aerosol Technology Training Seminars were presented by Mr. Chadwick at the following Companies (partial list)...

The Gillette Company

Reckitt & Benckiser

ConAgra

Berry Plastics

Proctor & Gamble

Wyeth (now Pfizer)

Takasago International

SC Johnson

Falcon Safety Products

The Dial Corporation / Henkel

Bristol-Myers/ Clairol Division

Amway

C.B Fleet

Chem-Pak

PUBLICATIONS

Controlling Particle Size in Self-Pressurized Aerosol Packages.

Metal Finishing Magazine, July/August, 2004, p40-44.

Particle Size Control in Aerosol Packages.

Spray Technology & Marketing Magazine, December 2004, p20-22.

Aerosol Anatomy – The Aerosol Laboratory (part 1).

Spray Technology & Marketing Magazine, April, 2006, p32-34.

Aerosol Anatomy – The Aerosol Laboratory (part 2).

Spray Technology & Marketing Magazine, February, 2007, p38-42.

Aerosol Anatomy – Product Litigation (part 1).

Spray Technology & Marketing Magazine, July, 2007, p12-15.

Aerosol Anatomy – Product Litigation (part 1).

Spray Technology & Marketing Magazine, October, 2007, p20-22.

Aerosol Anatomy – Stem Gaskets.

Spray Technology & Marketing Magazine, September, 2008, p22-23.

The Aerosol Laboratory. Safety Check: Ignition Sources.

Spray Technology & Marketing Magazine, January 2019 p24.

Aerosol Laboratory Safety - Stability Ovens.

Spray Technology & Marketing Magazine, November 2019, p24-26.

PROFESSIONAL ASSOCIATIONS - PAST & PRESENT

PLMA – Private Label Manufacturers Association
CSPA – Consumer Specialty Products Association
IFT – Institute of Food Technologists
SCC – Society of Cosmetic Chemists