

## RESUME

### Education: Graduate School

Adelphi University, Garden City, NY

Degree: PhD, Major: Physical/Polymer Chemistry

Date: June 1978

Doctoral Thesis Research: The Synthesis and Physical Characterization of Modified Silicone Polymers

Adelphi University, Garden City, NY

Degree: M.S., Major: Chemistry

Date: June 1967

Masters Thesis Research: Polysiloxane-s-Triazinyl Ethers; Synthesis and Properties

### College

City College of New York, NY, NY

Degree: B.S., Major: Chemistry

Date: February 1965

### Professional Continuing Education Courses

- \* Nabisco Emphasis on Strategic Thinking (NEST) Training
- \* Nabisco Chocolate and Candy Confectionery Science and Technology Short Course  
Nov 9-10 1999.
- \* Perkin-Elmer Thermal Analysis Workshop, Dec 7, 1999.
- \* Completed the Richardson Researches Confectionery Technology Course, Oct 12-16 1998.
- \* Characterization of Foods using Rheology and Thermal Analysis Workshop, Sept 24, 1998.
- \* Waters/Viscotek Short Course and Workshop on "The Modern Methods of Polymer Characterization" May 6-7, 1997
- \* Viscotek Advanced Training Course in "Gel Permeation Chromatography and HPLC Detection Technology", Mar 11-13, 1996
- \* 8th International Symposium and Short Course on "Techniques for the Polymer Analysis and Characterization", May 22-24, 1995
- \* Rutgers Cook College short course on "Recent Advances in Food Chemistry" Aug 10-14, 1992.
- \* Rutgers Cook College short course on "Enzymology" Nov 7, 1991.
- \* NMR Concepts: Course "Interpretation of 1D NMR Spectra" April 28 - May 3, 1991.
- \* Institute of Materials Science, Univ of Conn, "Current Topics in Polymer Characterization" May 18-19, 1989.
- \* NBI courses: Creative Thinking, Financial Management, Information Systems Fundamentals, Choices, PEP Program.
- \* Center For Professional Advancement: Course on "Gums and Hydrocolloids", Dec 12-14, 1988.
- \* Haake-Buchler Short Course on "Absolute Viscosity Measurements", October 21-23, 1986.
- \* Center for Professional Advancement Course on "Microencapsulation", June 19-21, 1985.
- \* Perkin Elmer Model 3600 Laboratory Microcomputer Training Course, March 4-8, 1985.
- \* ACS Short Course in "Advances in Polymer Synthesis, Modification and Characterization", June 4-9, 1984.

- \*ACS Hands-On Intensive Short Course in "Polymer Chemistry: Principles and Practices", August 14-19, 1983.
- \*Perkin Elmer Training Course in Computer Aided Chemistry - Thermal Analysis, July 13-15, 1983.
- \*ACS Short Course "Chemical Engineering for Chemists", August 22-24, 1981.
- \*Waters Associate "Liquid Chromatographic Maintenance Course", October 21, 1980.
- \*Plastic Institute of America Intensive Short Course on "The Elastoplastics", University of Akron, November 5-7, 1975.
- \*Perkin - Elmer's Training Course in Thermal Mechanical Analysis, October 1975.
- \*ACS Short Course "Polymer Chemistry", October 3-5, 1974.
- \*Waters Liquid/Gel Permeation Chromatography Workshop, May 4-7, 1972.

**Professional Experience:**

Adjunct Associate Professor of Chemistry, Hofstra University Chemistry Dept - Jan 1994 to Present

Sr. Principal Scientist - Polymer Research, Kraft/Nabisco Inc, Corporate Technology Research and Development, May 1993 to July 31, 2001 - Retired

Principal Scientist - Polymer Research, Nabisco Foods Group, Corporate Technology–Research and Development, March 1987 to May 1993.

Adjunct Assistant Professor, Adelphi University Chemistry Dept, September 1985 to May 1988.

Director - Polymer Group - Nabisco Brands - Research and Development, January 1985 to March 1987.

Senior Research Specialist - Physical Polymer Chemistry & Gum Base Development, Life Savers Inc., R&D, December 1981 to December 1984.

Guest Lecturer at Hofstra and Adelphi Universities, 1980-1984. Lectured on "The Synthesis and Properties of Polymers".

Senior Professional Chemist - Physical/Polymer Chemistry, Life Savers Inc. R&D, December 1977 to November 1981.

Physical/Polymer Chemist - Life Savers Inc. R&D, July 1971 to November 1977.

Officer, U.S. Army Chemical Corps, Ft. McClellan, AL, April 1971 to July 1971.

Senior Teaching Fellow, Adelphi University, Chemistry Department - General Chemistry Instructor, September 1970 to February 1971.

Instructor (Part Time), State University of Farmingdale, September 1969 to January 1970.

**Professional Experience with Specific Experimental Methods/Techniques of Research and Analysis:**

Thermal Analysis - DSC, DTA, TGA, TMA  
 Viscometry - dilute solution glass capillary, differential, coaxial cylinder, cone and plate.  
 Rheometry - tensile, compression, capillary and torque.  
 Chromatography - gas, liquid, TLC.  
 Spectroscopy - IR, UV, VIS, Atomic absorption, NMR and Pulsed NMR.  
 Molecular Weight Analysis - Membrane Osmometry, Vapor Pressure Osmometry, Gel Permeation Chromatography, Light Scattering Photometry (LALLS).  
 Other Techniques - Bomb Calorimetry, Polarimetry

**Experience with Computers and Programming Languages:**

NBI Training Courses on IBM PC & DOS, Microsoft Office: Word, Excel, Powerpoint (95), Timeline 3.0 (89), Windows 2000 (01)  
 Continuing Education course "Introduction to Computers", September-November 1984.  
 DoD Instruction in the use of "Enable" software.  
 Practical hands-on experience with IBM-PC. Basic programming experience in both Fortran and Basic. Interested in Computer Aided Chemistry applications.

**Honors & Awards:** Kraft ABCD (Above & Beyond Call of Duty) Award - June 28, 2001  
 Nabisco Dual Ladder Leadership Award - July 17, 2001  
 Kraft General Foods Patent Recognition Award – Mar 16, 2001  
 Nabisco EVP – R&D Technical Excellence Award 2000  
 Long Island Business 2<sup>nd</sup> Annual (CY2000) Innovator of the Year Award  
 Life Savers Company OWARD – June 23, 2000  
 Life Savers Vice-Presidents 99 Award for Technical Excellence  
 1999 Nabisco Superior Technical and Scientific Achievement Award  
 Nabisco DL Re-certification Award as a Sr. Principal Scientist – June 10, 1998  
 1998 New York ACS Section Outstanding Service Award  
 Recipient of the 1994 NBI Salute to Excellence Award  
 Recipient of the Sr. Principal Scientist Award (93)  
 Recipient of the 1993 NFG Salute to Excellence Award  
 Recipient of the 1988 NBI Outstanding Contribution Award  
 Recipient of the 87 thru 96 NBI Patent Recognition Awards.  
 Recipient of the Principal Scientist Award (87)  
 Senior Teaching Fellowship Adelphi University 1970-71

**Professional****Organizations: Active Memberships**

American Chemical Society (ACS)  
 ACS Division of Polymer Chemistry  
 ACS Division of Chemical Education  
 N.Y. Section ACS - Long Island Subsection  
 American Association for the Advancement of Science (AAAS)  
 American Institute of Chemists (AIC)- Fellow  
 IUPAC Affiliate Member  
 Institute of Food Technologist (IFT)

**ACS Activities**

Chair of the N.Y. ACS section Councilors Coordinating Committee  
 N.Y. ACS Long Range Planning Committee 1991 – Present  
 N. Y. ACS Bylaws Committee 1997 - Present  
 N.Y. ACS Audit Committee 94 - Present  
 Chairperson for N.Y. ACS Congressional Science Councilors, 92-94  
 Finance Chairperson for MARM 97 and 93  
 N.Y. ACS Delegate to the EAS 94- Present & 89-92  
 N.Y. ACS Councilor 93-98, 89-91;

Member, National ACS Council Standing Committee on Meetings and Expositions  
 1993-98; 1990-91  
 Chairman of the M&E Exposition Subcommittee 96-98. Member of the Regional  
 Subcommittee of M&E 94-97  
 New York Section Alternate Councilor 1999-2001; 91-93; 1985-88  
 Member NYS Chem. 1984 Planning Committee  
 Chairman Long Island ACS Subsection 1984, Chairman Elect 1983  
 Chairman, Membership Committee, LI ACS Subsection 1981, 1982  
 Member NY Section Membership Committee, 1980 and 1981.  
 Co-Author of NY Section's Pamphlet on "Reasons for Being an ACS Member", 1981.

**Other Activities:**

Science Judge for the American Institute of Science and Technology, City of N.Y. Science Fair,  
 1980-Present.  
 Served on Council of Judges, 1982-1985.  
 President of Adelphi Chemistry Association, 1983-1984.  
 Member of Assemblyman Fred Parola's Scientific Advisory Committee, 1984-1985.

**Military:** Rank: COL, United States Army Reserve, Branch: Chemical Corp.  
 Present Status: Retired Reserves  
 Clearance: Top Secret/w sensitive.

**Education:**

Completed Chemical Officers Basic Course (1971).  
 Completed Chemical Advanced Course (1976).  
 Completed Command and General Staff College (1980).  
 Completed Intermediate Auditors Course by USAAA (February 1985).  
 Completed Internal Review Training Course FUSA (2-7 Dec. 1984).  
 Completed DOD course on "Enable" (June 27-July 1, 1988).  
 Completed DA Inspector General (IG) course (Jan 21-Feb 1, 1990).

**Awards and Honors:**

Legion of Merit  
 Meritorious Service Medal with 2nd Oak Leaf  
 Army Commendation Medal with 2nd Oak Leaf  
 Armed Forces Reserve Medal with 1st Device  
 National Defense Medal  
 Army Reserve Component Achievement Medal with 3rd Device  
 Army Service Ribbon  
 Army Achievement Medal  
 Army Reserve Components Overseas Training Ribbon (2X)

**Membership Organization:**

Army Reserve Command Association

**Publications:** See attached Bibliography

**References:** Available on Request

## A. Patents

D'Amelia, R.P., Scheibach, S. et.al. Patent Application - Breath Freshening Comestible Product and Method of Controlling Breath Malodor - SSMP Docket # 11108Z, filed Aug 8, 2001

D'Amelia, R.P., Scheinbach, S. et.al. Patent # 6,280,769 issued Aug 28,2001 – Breath Freshening Comestible Product and Method of Controlling Breath Malodor-CIP of US patent. Assignee Hershey Foods. Inulin patent

D'Amelia, R.P., Homcy, J., Deputla, R., Panhorst, D., Bell, J., Hopkins, W., Patent # 6,030,605 issued Feb 29, 2000 - Breath Freshening Compositions and Methods using Them – Commercialized and Trade Marked as NeutraZin

Akkaway, D., Deming, D., Klemann, L., Menijvar, J., D'Amelia, RP, et.al. Patent # 5,976,598 – issued Nov 2, 1999 – Physically Coated Cellulose as Low Calorie Flour Replacements

Wheeler, E.L., D'Amelia, R.P., et. al. Patent # 5,662,953 issued Sept 2, 1997 – Reduced Calorie Triglyceride Mixtures – A Method for Reducing Calories

Wheeler, E.L., D'Amelia, R.P., et. al. Patent # 5,565,232 issued Oct 15, 1996 - Reduced Calorie Triglyceride Mixtures - Chocolate Compounds.

Wheeler, E.L., D'Amelia, R.P., et. al., Patent # 5,552, 174 issued Sept 3, 1996. Reduced Calorie Triglyceride Mixtures - Reduced calorie liquid oil compositions.

D'Amelia, R.P., Cea, T.R., Beam, J.E., White, R.A., Patent # 5,458,891, issued Oct 17, 1995. Chewing Gum containing Flavorant Adsorbed in Cross Linked Elastomeric Polymer.

Wheeler, E.L., D'Amelia, R.P., et. al., Patent # 5,456,939, issued Oct 10, 1995. Reduced Calorie Triglyceride Mixtures - Chocolate Confectionary Composition.

Wheeler, E.L., D'Amelia, R.P., et. al. Patent # 5,411,756, issued May 2, 1995. Reduced Calorie Triglycerides Mixtures - Dairy Fat Compositions.

Wheeler, E. L., D'Amelia, R.P., et. al. Patent # 5,378,490, issued Jan 3, 1995. Reduced Calorie Triglyceride Mixtures - Shortening Fat Compositions.

Wheeler, E., D'Amelia, R.P., Levielle, G.A., Otterburn, M.S., Klemann, L.P., Finley, J.W., Roden, A., Pelloso, T., Given, P. Patent # 5,258,197, issued Nov 2, 1993. Reduced Calorie Triglyceride Mixtures - Coatings.

D'Amelia, R.P., Jacklin, P.T., Janes, L., Scimone, A. Patent # 5,240,996, issued Aug 31, 1993 "Extended Polyvinyl alcohol esters as low calorie fat mimetics".

Scimone, A., D'Amelia, R.P., Jacklin, P.T. Patent Application Serial #07/525,143 filed 5/90. Polyesters as Fat Replacements. NBI-703. Synthesis of fat mimetics having an ester backbone with either normal or reverse fatty acid pendant groups.

Jacklin, P.T., D'Amelia, R.P., Finley, J.W., Klemann, L.P. Patent #5,124,166, issued June 3, 1992. Carboxy/Carboxylate Disubstituted Esters as Edible Fat Mimetics. Synthesis of diacyl lactic acid/lactic acid lactate esters that yeild low or no calories.

D'Amelia, R.P., Jacklin, P.T. Patent #5,115,017 issued May 19, 1992. Divisional of 07/312,618 filed Feb 17, 1989. Process part of the original Polyvinyl oleate patent 4,925,974.

D'Amelia, R.P., Jacklin, P., Ferrotti, M., Chantre, O., Reggio, R. Patent #4,968,511, Nov. 6, 1990. Subject area: A one step/unit gum base chewing gum. Field of Invention: Relates to a chewing gum product made with one masticatory polymeric gum base component and made in a one step mixing process.

D'Amelia, R.P., Jacklin, P. Patent #4,925,974. April 10, 1990. Subject Area: Polyvinyl Oleate (PVOL) used as a Polymeric Fat Replacement. Field of Invention: An edible fat low calorie product comprising an unsaturated acid ester of Polyvinyl Alcohol.

Stroz, J.J., Bakal, A., D'Amelia, R.P. Patent #4,758,438. July 19, 1988. Subject Area: A Sweetener Composition. Field of Invention: A sweetener composition consisting essentially of co-dried Thaumatin and/or Monellin and acid Saccharin and designed for use as a non-caloric sweetener in comestibles such as chewing gum.

D'Amelia, R.P., Weiss, G., Reggio, R., Wolf, S. Patent #4,656,039. April 7, 1987. Subject Area: Layered chewing gum with moisture impervious to outer layer. Field of Invention: A chewing gum product comprising at least one outer layer of gum base rich material which is essentially devoid of moisture sensitive components and which encloses a solid core structure of moisture sensitive materials.

D'Amelia, R. P., White, R., Stroz, J. Patent #4,525,363, June 1985. Subject Area: Single Compatibilizing Agents for Gum Base Elastomer-Resin Combination. Field of Invention: A chewing gum containing a new homogenous gum base containing a single polymeric compatibilizer which is capable of properly plasticizing both the resin and elastomeric components employed in chewing gum base.

DeTora, S., D'Amelia, R. P. Patent #4,459,311, July 10, 1984. Subject: Process for the preparation of gum bases. Field of Invention: An improved process for continuously producing gum base having a hard elastomer component. The process utilizes plasticizers to effectively functionalize gum base components.

D'Amelia, R. P., Reggio, R., Jewell, W., Stroz, J. Patent #4,378,379, March 29, 1983. Subject Area: Chewing gum having improved softness and processability. Field of Invention relates to a chewing gum having improved properties due to the presence of a novel fatty acid ester softening agent.

D'Amelia, R. P., Reggio, R., Friello, D. Patent #4,379,169, Apr. 5, 1983. Subject Area: New gum base and chewing gum. Field of Invention: Relates to a novel chewing gum containing high levels of estergum resins, providing excellent film forming properties to the gum base.

D'Amelia, R. P., Stroz, J., Kachikian, R. Patent # 4,452,820, June 5, 1984. Subject Area: New gum base and chewing gum. Field of Invention relates to a novel non-stick chewing gum base containing properly plasticized elastomer and resin plus a modifying support phase, and chewing gum containing such gum base and method for preparing both.

Cherukuri, R., Friello, E., Ferrotti, M., Jewell, W., D'Amelia, R. P. Patent #4,552,822, October 5, 1982. Subject Area: New chewing gum base. Field of Invention: Relates to a non tack, non-styrene-butadiene elastomer type gum base and chewing gum containing the same.

## B. Publications & Presentations

Scheibach, S., Wei, G., Wu, CD., Aji, K. D'Amelia, R.P., Poster presentation at the 30<sup>th</sup> Annual Meeting and Exhibition of the American Association for Dental Research , Mar 8, 2001 entitled " Effects of Zinc Salts on Oral Pathogens and Oral Malodor"

D'Amelia, R.P., Kumiega ,article entitled "More Accurate Analysis of Polymer Properties Helps Improve Chewing Gum" published in Scientific Computing and Instrumentation, Sept 99, pages 23-25

D'Amelia, R.P., Kumiega, S., article entitled " Polymer Analysis to Improve Chewing Gum", published in Food Product Design, Aug 2000.

D'Amelia, R.P., Homcy, J., Deptula, R., Hopkins, W., Poster presentation at the Nabisco Technology Showcase on the " Development of a Novel Breath Control Composition, Sept 29,1995.

Klemann, L., Aji, K., Boldt, G., Chrysam, M., D'Amelia, R.P., et al, Oral presentation on the "The Chemistry of Reduced Calorie Triglycerides. Presented at the AOCS National Meeting in San Antonio, TX, May 8,1995.

D'Amelia, R.P. Oral presentation at the Nabisco SALATRIM Science Symposium on the "Chemistry of SALATRIM" Aug 11, 1994

D'Amelia, R.P., Homcy, J., Klemann, L., Poster presentation at the Nabisco SALATRIM Science Symposium on the "Interesterification of Triacylglycerols containing Short Chain Fatty Acids: Synthesis and Characterization, Aug 11, 1994.

D'Amelia, R.P., Jacklin, P., Klemann, L., and Ferentz, J., Poster presentation at the Nabisco SALATRIM Science Symposium on "The Use of Vacuum Wiped-Filmed Still Distillation to Fractionate SALATRIM", Aug 11,1994.

Klemann, L., Aji, K., Chrysam, M., D'Amelia, R.P., et al. " The Random Nature of Triacylglycerols Produced by the Catalyzed Interesterification of Short and Long Chain Fatty Acid Triglycerides " J of Ag and Food Vol 42 #2, Feb 1994 pp442-446.

Hayes,J., Pence,D., D'Amelia,R.P., Scheinbach,S., et al. " A Review of Triacylglycerol Digestion, Absorption, and Metabolism with Respect to SALATRIM Triacylglycerols" J of Ag and Food Vol 42 #2, Feb 1994 pp 474-483.

D'Amelia, R.P., Jacklin, P., Chantre, O., Ferrotti, M., Panhorst, P. " Masticatory Food Polymers: A Study of Polymeric Properties " 27th ACS Middle Atlantic Regional Meeting, Hofstra University, June 2-4,1992.

D'Amelia,R.P. " Industrial Chemistry " Presented to the Junior class at Kellenberg Memorial High School. May 7,1992.

D'Amelia,R.P. " Careers in Chemistry " Presented to the 7th and 8th grade classes at the Hicksville Middle School. May 25,1991.

D'Amelia,R.P., Jacklin,P. " The Dilute Solution Viscosity of Polymers using a Differential Viscometer " Presented at the ACS National meeting in Boston - April,'90.

D'Amelia,R.P. " The Molecular Weight Characterization of Food Polymers using Gel Permeation Chromatography (GPC). Presented at the RJR - Nabisco Science Forum, Winston - Salem N.C. Nov 15-17,1988.

D'Amelia,R.P., Jacklin,P., Noll,G., Conti,C. " A Study of the Polymeric Properties of Polyvinyl Acetate - A Masticatory Food Polymer". Presented at the RJR - Nabisco Science Forum, Winston - Salem,N.C. Nov 15-17,1988.

D'Amelia,R.P. " Chemistry in the Food Industry ". Presented to the 7th grade science class at Morris Plains Borough School. Oct 26,88

D'Amelia,R.P., Jacklin,P. " The Physical Characterization of the Macromolecular,Thermal, and Mechanical Properties of PVAC Resin". Presented at the 27th Annual Eastern Analytical Symposium (EAS), NYC,Oct 2-7,88

D'Amelia,R.P., Jacklin,P., Noll,G., Conti,C." Polymeric Properties of PVAC - A Masticatory Polymer". Presented at the 18th Northeast Regional meeting of the ACS, University of Maine, July 31 - Aug 3,88.

D'Amelia, R.P., Jacklin, P. "The Thermal Behavior of Butylated Hydroxyanisole (BHA)". Presented at the 26th Annual Eastern Analytical Symposium, NYC. September 13-18, 1987.

D'Amelia, R.P., Jacklin, P. "A Study of the Intrinsic Viscosity of Polyvinyl Acetate (PVAc)". Presented at the 16th Northeast Regional Meeting of the American Chemical Society, SUNY at Binghamton, NY June 22-25, 1986.

Hussein, M.M., D'Amelia, R.P., Manz, A., Jacin, H., Chen, W., "Determination of Reactivity of Aspartame with Flavor Aldehydes by Gas Chromatography, HPLC, and GPC". Journal of Food Science 49, pp. 520-524 (1984).

D'Amelia, R.P. A collection of papers on the Analysis of Oligomeric and Polymeric Polyvinyl Acetate Resins, Squibb-LSI professional paper 81-10A (1981).

D'Amelia, R.P., Jacin, H., Chantre', O. "Analysis of Competitor Products. An Empirical Analytic Approach", technical report, LSI-80-8A (1980).

D'Amelia, R.P. "Thermal Analysis and Specific Heat Properties of Chewing Gum", technical report, LSI-79-1A (1979).

D'Amelia, R.P. "Modified Silicones. Synthesis and Characterization:.. Ph.D Thesis, Adelphi University (1978).

D'Amelia, R.P., Hopkins, E. "Characterization of the Physical and Thermal Properties of Hydrocarbon and Ester Types Waxes and Blends", technical report, LSI-78-3 (1978).

D'Amelia, R.P. "All About Solutions". Chemistry, Vol. 50, No. 9 (1977).

D'Amelia, R.P., Jacin, H. "Characterization of Low Molecular Weight Polyvinyl Acetate". Ind. Eng. Chem. Prod. Res. and Dev., Vol. 15, No. 4, pp. 303-307 (1976).

D'Amelia, R.P. "Physical Properties of Gum Base: Gum Base Cooling, Continuous Processing and Apparent Viscosity". Dobbs-LSI research paper 76D (1976).

Bettelheim, F.A., D'Amelia, R.P. "Polysiloxane-s-Triazinyl Ethers, Journal of Poly. Sci., Part C, #23, pp. 409-417 (1968)

D'Amelia, R.P. "Polysiloxane-s-Triazinyl Ethers: Synthesis and Properties". Masters Thesis, Adelphi University (1967).

**C. Other NBI Publications**

"Introduction to Food Polymer Chemistry". Handout.

Technical reports on the characterization of various Polymeric Properties of Food polymers.

"Sorbitol Primer" describing the classification, properties, synthesis, uses and regulatory status of Sorbitol and its structural and Stereoisomers

Organizations and Functions Manual for the Polymer/Gum Base Research Group

Booklet on the Methods of Research and Analysis available in the Physical Polymer Chemistry and Gum Base Laboratory.

"Polymer Chemistry Handbook: Overview, Principles, Practices."

In draft or concept form: a Monograph on "Polyvinyl Acetate" and "The Dilute Solution Glass Capillary Viscometry of Macromolecules". "Polyvinyl Alkyl Esters". Primer on the experimental & theoretical evaluation of Solubility Parameters.

Technical report on "The Laboratory Synthesis of Triacylglycerols (TAGS) using Fatty Acid Anhydride Chemistry"

Booklet on Acetylated Monoglycerides

Technical Report on the Infrared Spectroscopy of Triacylglycerols containing small chain fatty acids.

Completed various sections of the TAG FAP/GRASP.

Technical report on the "Dilute Solution Viscosities of Masticatory Polymers Using a Differential Viscometer" report #92-1.

Technical report on "The Use of Vacuum Wiped Film Distillation to Fractionate a Triacylglycerol TAG Sample" D'Amelia-01.

Technical report on "The Laboratory Synthesis and Melting Profiles of Short and Medium Chain Structured Glycerol Esters".

**D. Polymer/Analytical Methods Developed for NBI-P/LS research and development and quality control purposes.**

The Determination of the Dilute Solution Viscosities and Viscosity Average Molecular Weight of Masticatory Polymers Using Differential Viscosity

A Method to Determine the Molecular Weight of Butyl Rubber using Dilute Solution Glass Capillary Viscometry.

Developed a simple Method of Analysis for the Degree of Unsaturation in Fats and Oils using Dispersive Infrared Spectroscopy.

The determination of the Bulk Viscosity of PVAc using a Brookfield Thermosel Rotational Viscometer.

The Weight Average Molecular Weight (Mw) of PVAc by Low Angle Laser Light Scattering (LALLS)

Intrinsic Viscosity of Polyisobutylene Elastomers.

Determination of the Number Average Molecular Weight (Mn) of Polyvinyl Acetate resins using Vapor Pressure Osmometry (VPO)

Determination of the Glass Transition Temperature (Tg) of Polyvinylacetate Resins (PVAc) using Thermomechanical Analysis (TMA)

Molecular Weight of Polyvinylacetate (PVAc)

Determination of Acetic Acid in PVAc Resins.

Weight Loss on Heating PVAc.

Gel Content of Styrene/Butadiene Elastomer.

Determination of BHT in solid SBR 1027 and 1028.

Determination of BHT in gum base.

Determination of ETA Extract of Solid SBR.

Softening Point by the Drop Technique.

Melting Point (Open Tube Rise Method).

Needle Penetration of Waxes (Wax Hardness).

Drop Melting Point of Natural & Synthetic Waxes.

Determination of Plastograph Values for Gum Base.

Determination of Hydroxyl, Acetyl and Saponification Values of Acetylated Glycerides.

Determination of Reichert Meisel Value of Acetylated Monoglycerols.

Determination of Ash, Acid insoluble Ash and  $\text{CaCO}_3$  in Chewing Gum Bases.