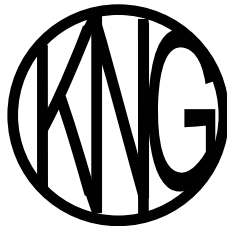

WATER-BASED PRODUCTS

**Coatings
Paper Coatings
Adhesives & Sealants
Inks**

A Multiclient Study

NOW AVAILABLE

July, 2000



KUSUMGAR, NERLFI & GROWNEY, INC.

**One DeBaun Avenue, C
West Caldwell, NJ 07006**

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A LEADING TECHNOLOGY FOR INDUSTRY & CONSUMERS

Water-based technology is a mainstay of the coating, adhesive, sealant, paper coating and ink industries. Consumption in 1999 was 17.2 billion dry pounds valued at \$11.5 billion. Each of the industries is mature, and the technology is well established in many large volume applications. A modest 2.5% annual rate of increase is forecast for water-based products. Many smaller volume applications will grow faster owing to environmental regulations. Performance and application improvements have made the technology more viable in some demanding applications.

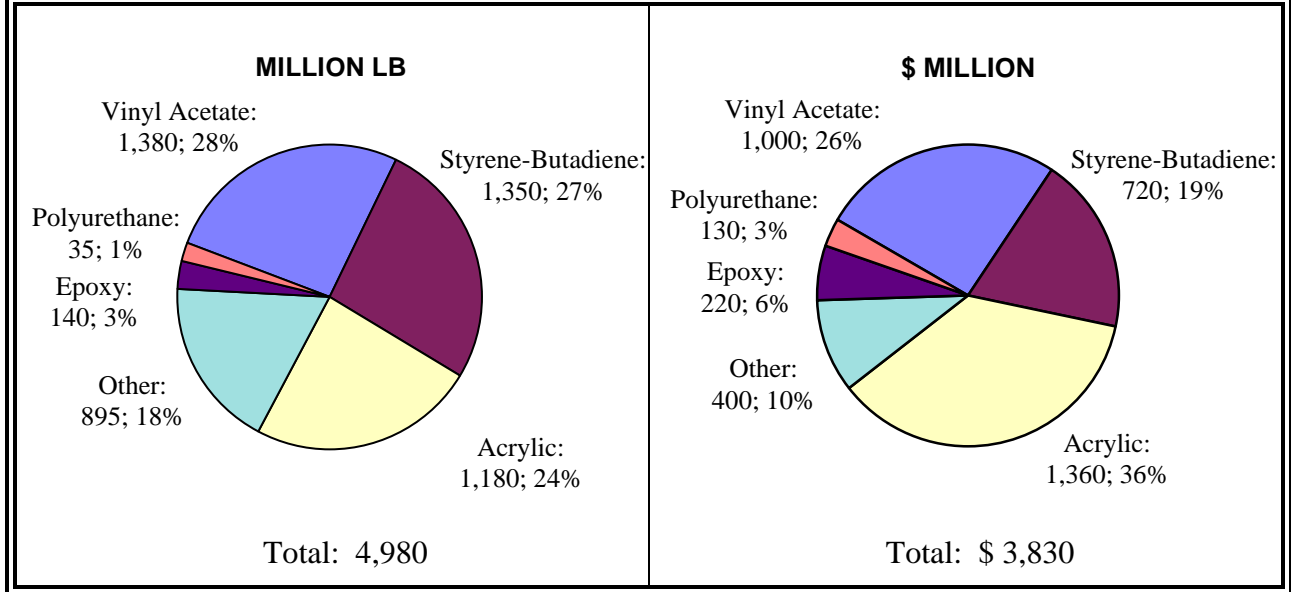
Coatings is the leading industry for water-based products in dollars (65% of the total) and third in poundage (24%). Water-based technology has long been used in architectural house paints and limited gains are seen. Special purpose coatings is a faster growing segment for water-based technology, particularly in traffic, industrial maintenance, and roof end uses. The original equipment sector of coatings will see gains in some end uses as new regulations are on the way.

Adhesives is the second largest industry in value (22%) and volume (27%). Growth is projected to match adhesive industry gains as the technology is already about three-quarters of the volume. Additionally, 100% solids products are well established in some markets and can offer superior performance. For inks, water-based technology is used in flexographic, gravure and ink jet printing processes. Although the technology is only 12% of the overall ink volume, it is a much larger percentage of these processes and is capturing share from solvent-based types. Inks are only 1% of the water-based product volume, but pigment costs give inks 7% of the dollars.

Paper coatings are the lowest cost water-based product. They represent 47% of the dry weight but only 5% of the value. They are highly filled products that are produced in-house by paper companies. Paper coatings are based solely on water-based technology and growth will match that of coated paper production. Sealants is the smallest industry for water-based products. Most sealants are 100% solid products. Water-based technology is found in less demanding, lower cost consumer and contractor products.

Water-based products utilize some 40 different binder types. Consumption of the leading binder types is highlighted in Figure 1. Acrylics lead in dollar value and are second in dry weight. Coatings and adhesives are the larger industry outlet for acrylics. Vinyl acetate polymers are comprised of homopolymers, vinyl acetate-ethylene (VAE), vinyl-acrylics, and other specialties. Homopolymers are largely used in adhesives and paper coatings. House paints is the largest user of vinyl acrylics. Most VAE polymers are consumed in adhesives, but house paint usage has been growing. Styrene-butadiene binders are the lowest priced emulsion polymers. Paper coatings and carpet backing adhesives are its two major outlets. Epoxy and polyurethane binders are low volume, higher cost and performance materials. Together they account for 4% of the binder weight and 9% of the value.

FIGURE 1
BINDERS FOR WATER-BASED PRODUCTS



THE STUDY

WATER-BASED PRODUCTS characterizes U. S. consumption during 1999 and estimates consumption in the year 2004. This 700 page report is a comprehensive analysis of the technology in coatings, adhesives, paper coatings, inks, and sealants. A thorough business analysis is provided which includes profiles of leading water-based product and binder suppliers. Significant trends, new developments, mergers and acquisitions, and technology are covered in detail.

Subscribers will find **WATER-BASED PRODUCTS** the definitive reference work. Current participants, and those contemplating entry, will find the study essential in their planning process. Firms contemplating introducing new materials and technologies will find the study particularly attractive.

WATER-BASED PRODUCTS is based on over 800 interviews with formulators, raw materials suppliers, end users, and trade associations. Additionally, available literature and patents were reviewed and analyzed. Kusumgar, Nerlfi & Growney's extensive knowledge of the industries covered, gained over the last three decades, insures an accurate and comprehensive report.

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OUR QUALIFICATIONS

Kusumgar, Nerlfi & Growney is a consulting firm specializing in market research and business analysis for the polymer and chemical industries. Members of the firm possess some 50 years of experience analyzing the coating, ink, and adhesive industries. Kusumgar, Nerlfi & Growney is dedicated to providing comprehensive and accurate information and insight on technology driven markets.

The information and analyses contained in **WATER-BASED PRODUCTS** was developed by Michael Growney, Minesh Kusumgar and Steven Nerlfi. No outside contractors were used. Our expertise has been gained from conducting over 30 multiclient and numerous proprietary studies.

ADDITIONAL SERVICES

Kusumgar, Nerlfi & Growney's current multiclient project is **RADIATION-CURED PRODUCTS**. The study will provide subscribers with information on the technology in coatings, adhesives, and inks. Oligomers, monomers and photoinitiators will be analyzed. The report will address technology shifts, regulatory implications, raw material and formulator supplier structures, and other issues of concern to producers of radiation-cured products and their materials.

The study will characterize radiation-cured product consumption for base year 2000, and provide projections for usage in 2005. Radiation-cured product and raw material technology, pricing, competitive material dynamics, and industry concentration via mergers and acquisitions will be evaluated.

SUBSCRIPTION INFORMATION

WATER-BASED PRODUCTS is available through subscription. The price of the study is \$11,000 and includes 8 copies of the report. Additional copies are available upon request. To subscribe, please complete and sign the contract on the following page and return to Kusumgar, Nerlfi & Growney. For additional information please call Kusumgar, Nerlfi & Growney at 973/439-0030 (FAX: 973/439-0031).

CONTRACT FOR WATER-BASED PRODUCTS

KUSUMGAR, NERLFI & GROWNEY, INC.
One DeBaun Avenue, C
West Caldwell, NJ 07006

Please initiate our participation in **WATER-BASED PRODUCTS**. We understand this study will analyze the United States market. We understand our subscription entitles us to eight copies of the final report.

We agree that for a period of three years from publication to:

1. Not reproduce the study, in whole or in part, by any means.
2. Restrict use of the study to our own employees.
3. Prevent the disclosure of its contents, to the best of our ability, to any other firm or person.

We understand that we may disclose the contents of this study to any firm that we own more than half of, or to a company that maintains more than a half interest in our firm. We may use or disclose any information in the study which is public knowledge, in our possession before receiving the report, or that has been obtained from third parties, but not from this study.

Kusumgar, Nerlfi & Growney will take reasonable precautions to prevent disclosure of the contents of this study, except to subscribers, for a period of three years after it is issued.

We understand the fee for **WATER-BASED PRODUCTS** is \$11,000 (U. S. dollars).

Kusumgar, Nerlfi & Growney will invoice us for the full amount upon acceptance of our participation, after a countersigned copy of this contract is returned to us for our records. We will pay this invoice within thirty days.

Accepted: Kusumgar, Nerlfi & Growney

Subscriber:

Signature

Signature

Name

Name

Title

Title

Date

Date

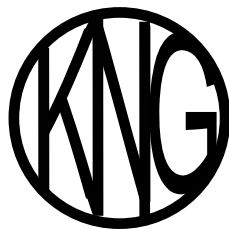
POLYMER AND CHEMICAL BUSINESS ANALYSIS AND MARKET RESEARCH

ADDITIONAL SERVICES

WATER-BASED PRODUCTS is Kusumgar, Nerlfi & Growney's fifth multiclient study. Studies immediately available, or scheduled for completion, include:

- **RADIATION CURED PRODUCTS & SYSTEMS**, February 1996
- **THE U. S. PAINT & COATINGS INDUSTRY**, June 1997
- **HOT MELT ADHESIVES**, May 1998
- **ADDITIVES**, June 1999
- **RADIATION-CURED PRODUCTS**, Due 2001
- **THE U. S. PAINT AND COATINGS INDUSTRY**, Due 2002

Interested parties should contact Kusumgar, Nerlfi & Growney for subscription information. We also welcome inquires for projects of a proprietary nature.



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