

Previewing the Upcoming U.S. Market Analysis for the Paint and Coatings Industry

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Agenda

- Introduction to ChemQuest
- → About the U.S. Market Analysis
- → U.S. Economy Overview
- Raw Materials: Building Blocks of the Paint & Coatings Industry

→ U.S. Paint and Coatings Market

- Coatings Industry Performance in 2023
- Industry Trends and Drivers
- → Looking to the Future



The ChemQuest Advantage: Insight to navigate the intersection of strategy, markets, operations, and technology

Strategic Thought Partners

Delivering distinctive, thorough, actionable, confidential, and professional work to support our clients in every aspect of sustained, profitable growth, including:



100% of our work is proprietary, offering a full portfolio of services under NDA

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Stakeholders across the value chain trust our thought leaders:

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- Senior personnel each have a minimum of 25 years of experience in specialty chemicals and materials.
- Extensive roster includes former senior managers from major manufacturers, business owners, and senior technical managers.

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- **Build enterprises** that challenge established thinking and drive transformation.
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- Unlock new and hidden insights, empowering an organization's smart risk-taking, catalyzing innovation excellence and value creation.
- **Be successful** because our success emanates from yours.



About the U.S. Market Analysis



Report Introduction

- The ChemQuest Group and American Coatings Association (ACA) are pleased to present the U.S. Market Analysis for the Paint & Coatings Industry (2024–2028).
- Report contents reflect our subject matter experts' decades of experience complemented by key industrial sources, including:
 - ChemQuest's proprietary Coatings TraQr® dashboard and market intelligence databases for paint and coatings
 - Statistics and primary interviews gleaned through industry organizations, including but not limited to: ACA Committee chairs, prominent members, and research fellows; American Can Manufacturers Association (ACMA); National Coil Coaters Association (NCCA); Association for Materials Protection and Performance (AMPP); the Powder Coating Institute (PCI); and Powder Coating Summit participants
 - Numerous and extensive interviews with industry experts in the value chain original equipment manufacturers (OEMs), coating formulators, raw material and equipment suppliers, and end users



ACA members are eligible for discounted pricing!



Report Details 20+ Market Sectors in Three Main Industry Segments

Market Chapters

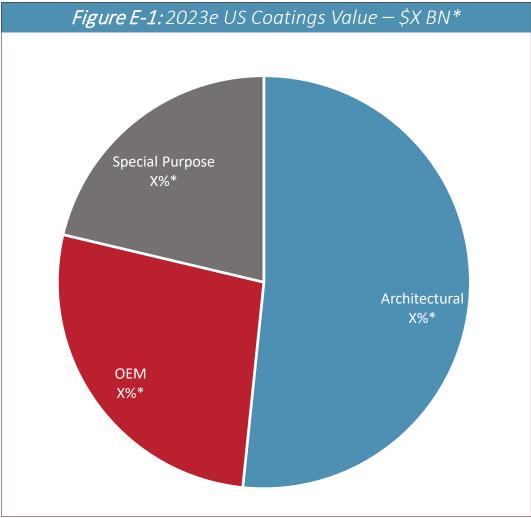
- Architectural Coatings
 - Floor Coatings
 - Wall Coatings
 - Building Envelope Coatings

• OEM Coatings

- Aerospace Finishes
- Appliance Finishes
- Automotive OEM Coatings
- Heavy-Duty Truck, Bus, and RV Finishes
- Machinery and Equipment Finishes
- Metal Container and Closure Finishes
- Non-Wood Furniture, Fixtures, and Business Equipment Finishes
- Paper, Paper Board, Film, and Foil Coatings
- Rail Rolling Stock Coatings
- Wood and Composition Board Flat-Stock Finishes
- Wood Furniture, Cabinet, and Fixture Finishes

Special Purpose Coatings

- Aerosol Paints
- Automotive Refinish Paints
- Marine Coatings
- Protective Coatings
- Traffic Marking Paints







Supporting Chapters Provide Background and Additional Context



- New Technology Developments and Market Opportunities
- Raw Material Feedstocks' Dynamics and Trends
- Regulatory Overview, Update, and Outlook
- Global M&A Activity (2020–2023)

Additional Options

- → All purchasers of the U.S. Market Analysis will receive the bonus of a full day of virtual consulting from ChemQuest to fully address study questions (submitted in advance), if interested.
- → Additionally, the "World Coatings Council (WCC) Global Market Analysis Report (2024-2029)" will be published in March 2025. Purchasers of the U.S. Market Analysis are eligible for a discounted price.



Consistent Content Across All Market Chapters

- Chapter Scope
- Market Overview
 - Sector Overview
 - Sector Analysis
 - Market by End Use
 - Quantitative Data, 2018-2023e *volume, value, CAGR, price trends*
 - Past Trends and Drivers
 - Major Producers & Estimated Share
 - Economic and Trade Influences
 - Porter 5 Forces Analysis

- Technology Overview
 - Coating Characteristics
 - Technology Trends & Drivers
 - R&D Efforts
- Five-Year Forecast
 - Regulatory/Environmental Influences
 - Key Buying Factors
 - Quantitative Data, 2023e-2028f *volume, value, CAGR, price trends*
 - Trends and Drivers
- Important Takeaways



New Technology Spotlight Chapters Focus on Coil Coatings and Powder Coatings

Coil Coatings Including Coatings for Aluminum Extrusions

- Coatings that protect steel and aluminum building products
 - Coil-coated metal: primed and top coated; often called pre-painted metal because forming occurs after painting
 - Spray extrusion: liquid applied to extruded aluminum

• Applications

- Primarily construction material (sidewalls and roofing), rainscreen, architectural window units, heating, ventilating and air conditioning (HVAC), and other equipment/building components
- Business/consumer products (appliances, furniture, shelving), transportation, and miscellaneous metal items
- Exclusions
 - Metal container manufacturing (Chapter 14)
 - Powder Coatings (Chapter 3)

Powder Coatings

- Dry particulate, industrial coating technology that protects and provides aesthetic value to durable goods, building products, and infrastructure
- Applications
 - Most powder coatings are factory applied to metal parts (cold and hot rolled steel, galvanized steel, aluminum, alloy castings) by OEMs or job coaters (coating service contractors).
 - A small but growing sector involves application to engineered boards (MDF), composites, and plastic substrates.
 - The electrostatic application technique is most common, although a small percentage of powder coatings are applied by fluidized bed or fusion-bonding techniques.
 - Coated parts are heated via convection heat or infrared (or a combination) to melt, fuse, and cure the coating.
- Exclusions

Liquid paints/coatings



U.S. Economy Overview



US Economic Outlook for 2024



- US Real GDP is expected to slow to 2% in Q4 2023 and finish at 2.4% for the year.
- The Institute for Supply Management (ISM[®]) expects manufacturing growth of 5.6% in terms of revenue

Specifically, revenues are expected to increase in 15 of 18 industries listed in order of largest to smallest projected increase:

1.	Apparel, Leather & Allied Products	6.	Primary Metals	11.	Machinery
2.	Food, Beverage & Tobacco Products	7.	Miscellaneous Manufacturing	12.	Fabricated Metal Products
3.	Computer & Electronic Products	8.	Transportation Equipment	13.	Plastics & Rubber Products
4.	Paper Products	9.	Chemical Products	14.	Nonmetallic Mineral Products
5.	Furniture & Related Products	10.	Textile Mills	15.	Petroleum & Coal Products

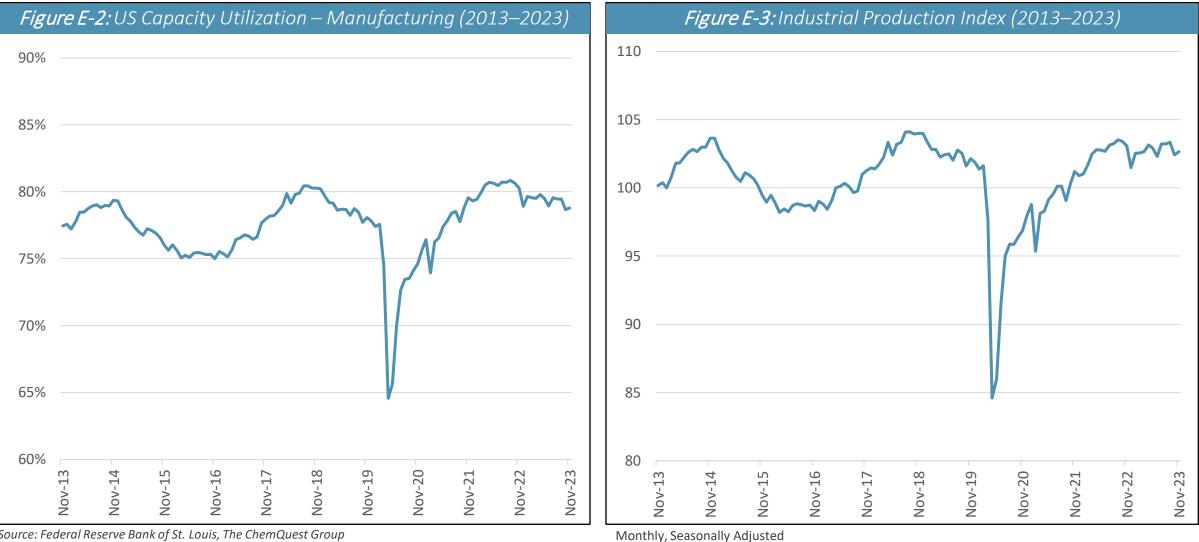
• 2023 US coatings volume growth was flat vs. 2022, influenced heavily by a downturn in the Architectural Coatings sector.

- High inflation and interest rates have slowed new residential and commercial construction.
- Other sector volume growth vs. 2022
 - 2.1% for OEM Coatings driven primarily by Automotive and PPFF coatings
 - 2.6% for Special Purpose Coatings, with Protective Coatings highest at 3.1% and the majority of remaining segments growing above 2%
- Consumer spending rose 3.1% at the end of 2023, according to Mastercard.
 - The consensus is that consumer spending will soften but is still expected to increase between 1.4% and 2.2% in 2024.
 - The University of Michigan's Consumer Sentiment Index jumped 14% in December 2023, the most in three decades.





US Manufacturing Profile



Source: Federal Reserve Bank of St. Louis, The ChemQuest Group



Table E-1: Reshoring + Foreign Direct Investment (FDI) by Industry, 2019–2022

Exhibit 2a, 2c Essential Products Driving the Top Industries, Reshoring + Foreign Direct Investment, 2022						
Industry	Essential Products Included	Jobs	Companies	% of total Companies	% of total Jobs	% of jobs
Electrical Equipment, Appliances & Components	EV batteries, charging stations	151,905	381	21%	42%	4%
Computer & Electronic Products	Semiconductor chips, solar panels, robotics	93,445	375	21%	26%	13%
Chemicals	Pharmaceuticals, hydrogen fuel, chemicals for batteries	28,350	303	17%	8%	11%
Transportation Equipment	Drones; for FDI only: EVs, aerospace	25,938	146	8%	7%	34%
Medical Equipment & Supplies	PPE, gowns, masks, medical devices, ventilators	14,468	105	6%	4%	4%
Apparel & Textiles		10,674	138		3%	6%
Primary Metal Products		9,569	49		3%	3%
Machinery		5,971	88		2%	3%
Food & Beverage		4,408	44		1%	2%
Miscellaneous, Including Hobbies		3,863	25		1%	1%
Castings/Foundries - Subset of Primary Metal Products		3,450	20		1%	1%
Fabricated Metal Products		2,984	33		1%	5%
Plastic & Rubber Products		2,913	36		1%	3%
Wood & Paper Products		2,815	21		1%	4%
Nonmetallic Mineral Products		2,276	26		1%	1%
Furniture and Related Products		1,880	30		1%	3%

- EV battery drove Electrical Equipment & Appliance sector reshoring and FDI in 2022.
- FDI in Automotive slowed due to pandemic and chip shortages.

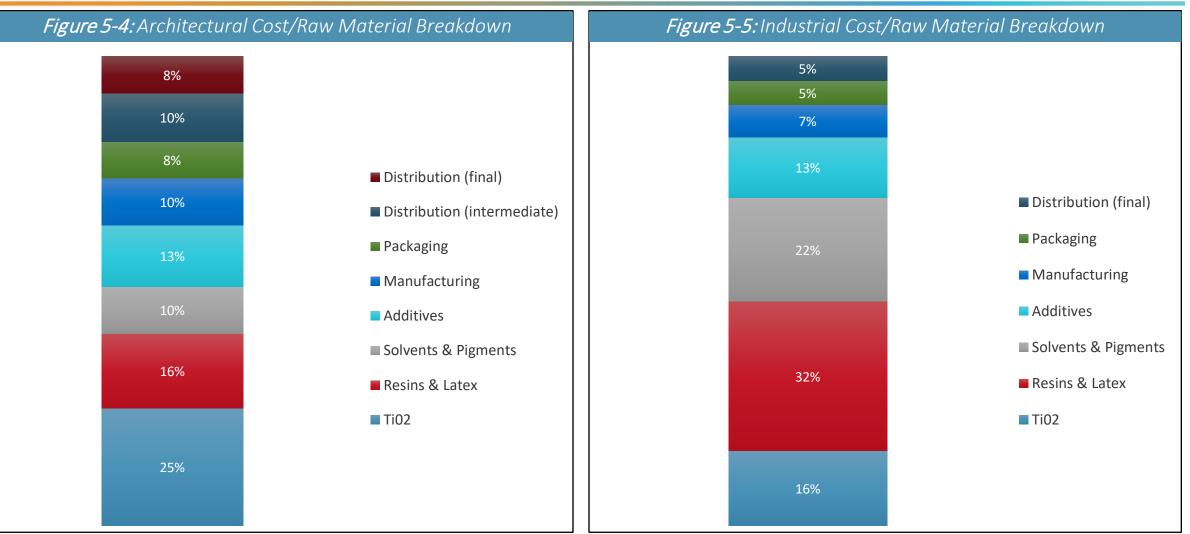
Source: https://reshorenow.org/content/pdf/2022_Data_Report.pdf



Raw Materials Building Blocks of the Paint & Coatings Industry



Typical Coatings Cost/Raw Material Basket

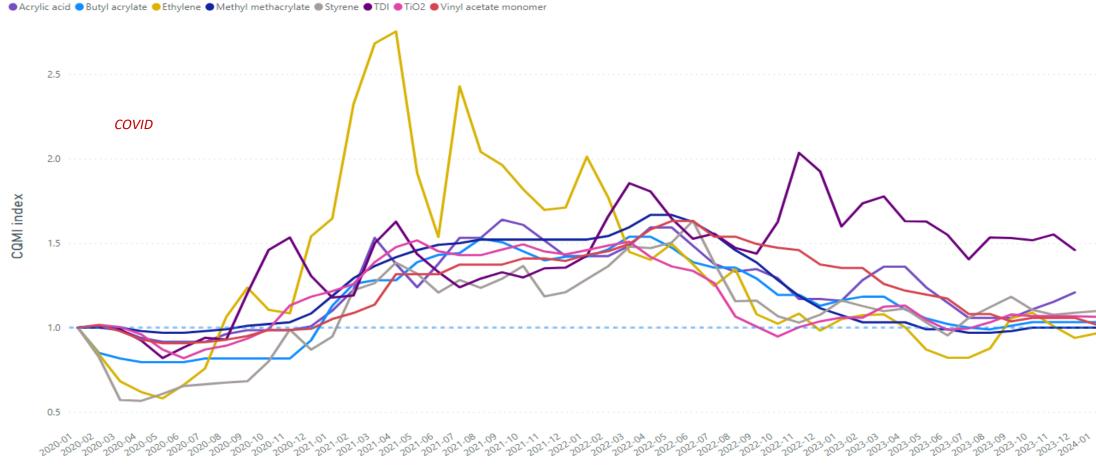


Source: Raymond James, PPG





Figure 5-25: Relevant Raw Material Price Movement since COVID



YYYYMM

Source: ChemQuest Coatings TraQr[®] ChemQuest Materials Index (CQMI)



Chapter 5: Raw Material Feedstocks' Dynamics and Trends

U.S. Paint & Coatings Market

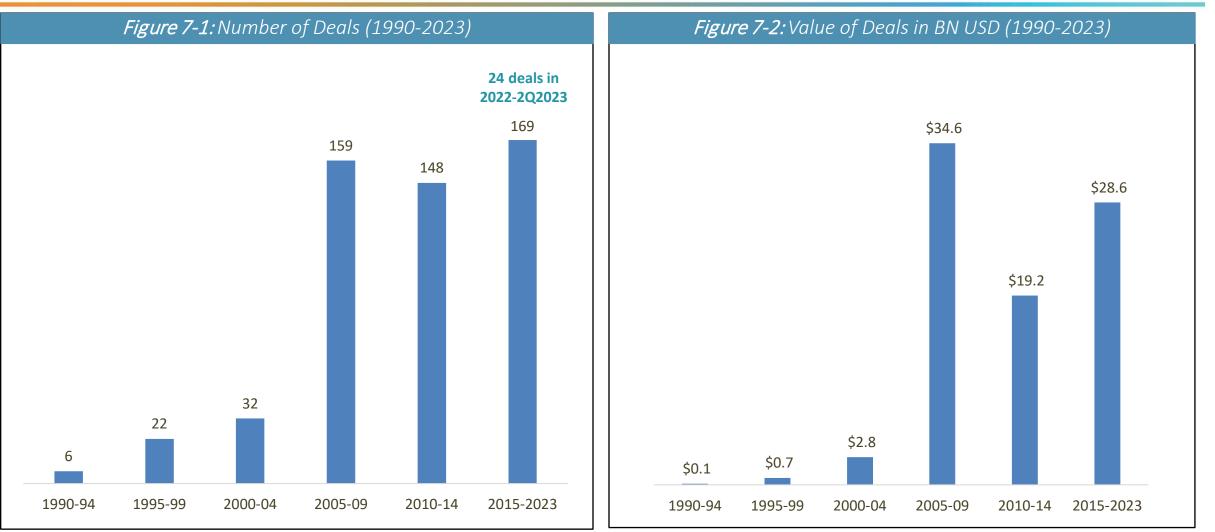


Coatings Industry Performance in 2023





Historical Consolidation Among Coatings Suppliers (Volume/Value)



Source: Zephyr, S&P Cap IQ



Rising Interest Rates Dent Merger and Acquisition Activity

Overview

- Multiples have fallen from a record 13.5X EBITDA for large cap companies in 2021 to ~10X in 2023. The market for SMEs have also declined since 2021, with multiples 5-8X EBITDA.
- Availability of capital has declined with unfavorable lending rates and covenants, as well as declining cache of quality targets.
- Large strategic buyers continue to make targeted acquisitions. However, small-to-medium (SME)-sized companies often with family or private equity ownership have seen the number of deals decline dramatically.
- Many firms originally planning to sell in 2022/3 have delayed their decision and have pushed back exit timeframes. In the meantime, they are looking to improve the business while hoping for an improved M&A environment.
- Large-acquisition opportunities may arise as conglomerates operating in the coatings space strategically reevaluate their portfolio of core businesses for divestiture.
- Spin-off opportunities for other companies will be created due to governmental regulations driving competition within industrialized regions.

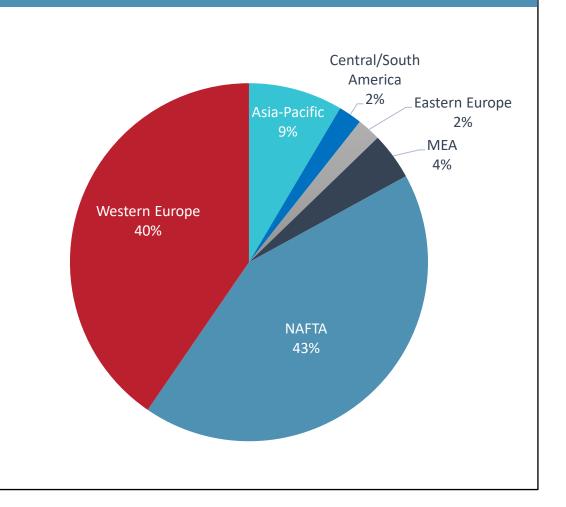


Figure 7-3:46 Acquisitions Since 2019





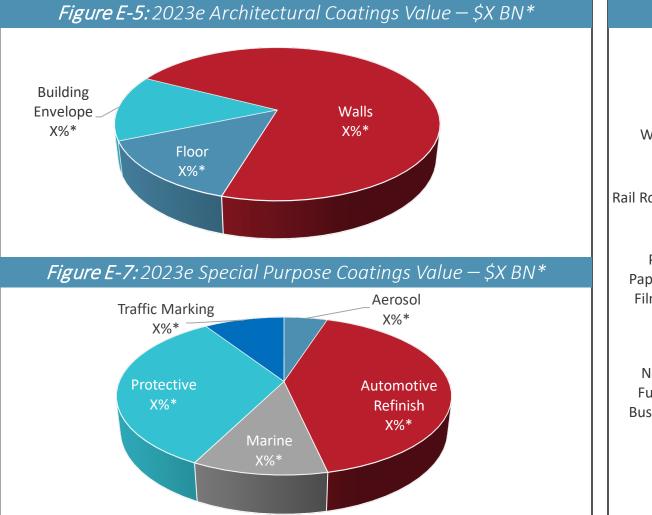
Important M&A Takeaways

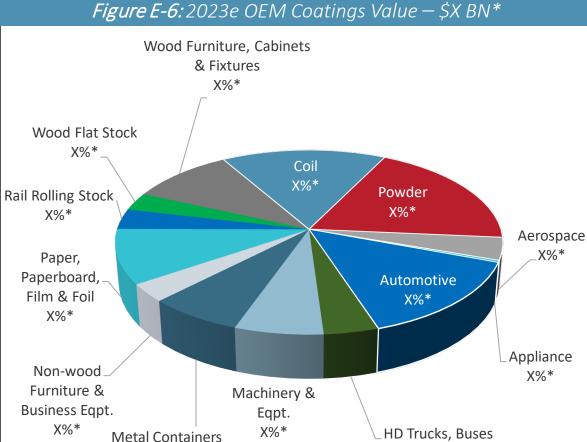
- Although activity has slowed dramatically with rising interest rates, the overall outlook for M&A activity continues to be positive in the coming years.
- Drivers include
 - **Consolidation** The coatings industry is consolidating as larger companies acquire smaller companies to gain access to new markets, technologies, and customers.
 - Innovation Companies are using M&A to acquire companies with innovative technologies, such as new coating formulations or application methods.
 - Geographic expansion Companies are using M&A to expand into new geographic markets.
 - Private equity firms in the space looking to exit investments as valuation becomes more favorable to do so



US Coatings Market Value by Sector (2023e)







& Closures

X%*

*Detail provided in report Source: The ChemQuest Group, Inc.



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& RVs

X%*

Industry Trends and Drivers





Table E-2:8 Major Trends Expected to Impact Paints & Coatings Market AmericanCoatings ChemicanCoatings ChemicanCoatings

MAJOR DRIVERS	IMPACT ON PAINT & COATINGS SECTOR		
CONSTRUCTION GROWTH	Global construction market provides baseline level of growth for underlying market	 2019-2030 Total construction value growth Forecast : ~3% Residential: ~2.5% Non-Residential: ~3.5% 	
DISPOSABLE INCOME IN DEVELOPING COUNTRIES	Increasing consumer expenditure drives demand and willingness to pay in fast-growing markets for more premium paints & coatings and end-products where premium finishing is required.	 In the short-term, premium paints expected to continue growth, but at a slower pace relative to budget paints as new consumers enter the market and new demand is generated. 	
REGULATION ON ENVIRONMENTAL & SAFETY STANDARDS	Health and safety regulations becoming increasingly stringent for chemicals. Developed markets already stringent on chemical safety regulations; expected to play out in emerging markets as they mature.		
MATERIALS SUBSTITUTION	Replacement of materials requiring paints and coatings to non-paint reliant materials	 Architectural/Decorative: Fewer paintable surfaces Industrial & Specialty: Clear and color wrap films, larger windows in vehicles 	
MARKET CONSOLIDATION	Consolidation of paints and coatings formulators and raw material providers	 Paints and coatings formulators continuing to consolidate globally, with major players such as Sherwin-Williams, PPG, AkzoNobel, and Nippon driving M&A activity 	
CONSUMER AWARENESS OF PRODUCT SAFETY	Increasing consumer interest in product safety (health and environmental)	 End-consumer demand for low/no odor and VOC content expected to increase Similarly, demand for environmentally safe P&Cs, beyond minimums required from legislators, among architects and construction firms expected to increase (e.g., LEED certification in commercial and residential buildings) 	
LABOR SHORTAGES	Labor shortage leading to higher automation and use of robotics		
INVENTORY MANAGEMENT AND RELOCATION OF SUPPLY CHAINS	Just-in-case inventory, reshoring/nearshoring for critical products and reduction of shipping cost	Source: The ChemQuest Group, Inc.	





Architectural Coatings Trends

Overview

Architectural Coatings include

- Decorative, aesthetically pleasing coatings applied to interior and exterior walls and floors that provide lightduty protection
- Liquid building envelope coatings that provide a physical separator or barrier between conditioned and unconditioned building environments above and below grade, including roof coatings; above grade vertical waterproofing and insulative coatings; and below grade waterproofing coatings
- The Architectural Coatings industry is the largest coatings sector and the harbinger of changes in the US economic condition.
- CAGR (2023e-2028f forecast): 2.6% volume; 5.1% value growth
- 2028 Paint Estimate: 990 MM gallons valued at \$23 BN (\$23.56/gal)

Key Mid-Term Trends

• Market trends

- Modest growth is predicted in the construction and remodeling markets, with more growth in the latter.
- Movement to alternate materials (composites, luxury vinyl tile, mosaic tile, peel-and-stick wall coverings)
- Raw material costs will decline to some extent but remain above pre-pandemic levels.

• Technology trends

- Innovations in chemistry and application will provide tangible benefits to building energy footprints.
- Coatings will move from decorative to active functional coatings that react to the environment.
- Continuing trend to more eco-friendly and lower toxicity coatings (reduced VOCs, quick drying, safer ingredients) – waterborne coatings will continue to dominate
- Development of bio-based coatings using innovative, iterative molecular chemistry techniques



OEM Coatings Trends



Overview

- OEM Coatings cover a wide range of factory-applied decorative and protective industrial liquid and powder coatings.
 - Liquid OEM Coatings dominate this sector at >80% by value, with Coil/Extruded Aluminum, Automotive, PPFF (Paper, Paper Board, Film & Foil) and WFCF (Wood Furniture Cabinets & Fixtures) making up > 60% of the liquid OEM sector.
 - Most Powder Coatings are factory applied to metal parts (cold and hot rolled steel, galvanized steel, aluminum, alloy castings) by OEMs or job coaters (coating service contractors). A small but growing sector involves application to engineered boards (MDF), composites, and plastic substrates.

• 5.0% value CAGR (2023e–2028f forecast)

- Liquid: 5.0%
- Powder: 4.7%
- 2028 OEM Coatings estimate
 - Liquid: 295 MM gallons valued at \$9.7 BN (\$33.02/gal)
 - Powder: 585 MM pounds valued at \$2.3 BN (\$3.90/lb)

Key Mid-Term Trends

• Liquid OEM

- **Coil:** The Building and Construction sector will remain the main driver. Solventborne technologies are expected to dominate, but some coatings suppliers are investigating UV-cure technology.
- Automotive will continue its strong trend to water-based paints and lower bake systems. Strong growth is anticipated in EV, with further market disruptions as technology evolves.
- **PPFF**: Paper-based and mono-material solutions are expected to gain share as packaging design continues to evolve based on recyclability and cost. Waterborne coatings will continue to wrest share from solventborne and thermoplastic coatings.
- WFCF: Waterborne, especially urethane-based, coatings will continue to grow, mostly through European and Mexican sources displacing share of domestic suppliers.
- Powder OEM
 - Metal applications are expected to dominate but with continued product price pressures.
 - Future growth is dependent on technology advancements and application expansions, notably EV, infrastructure, low-temperature powder coatings, and thin-film application.



Special Purpose Coatings Trends



Overview

- Special Purpose Coatings are predominantly high-performance protective and restorative liquid coatings that are applied in minimally controlled and end-use/field environments.
 - Automotive Refinish and Protective industrial coatings make up 75% of the sector value, with Marine, Aerosol, and Traffic Marking coatings constituting the balance.
 - At an average selling price of ~ \$40/gal, Special Purpose Coatings are typically priced 40% higher per gallon than OEM Liquid Coatings and 85% higher than Architectural Coatings. The exception is Aerosol Coatings, which are priced equivalent to Architectural Coatings.

CAGR (2023e–2028f forecast)

- 2.6% volume; 6.0% value growth
- Value growth to be driven by Automotive Refinish and Protective Coatings, which are expected to grow at a volume CAGR of ~2.5% and a value CAGR of at least 6%, with Automotive Refinish coatings increasing in price to greater than \$90/gal by 2028.
- 2028 Special Purpose Coatings Estimate: 217 MM gallons valued at \$10 BN (\$46.86/gal)

Key Mid-Term Trends

• Market trends

- Automotive Refinish: Overall demand vs. growth is very positive, driven by higher vehicle values, higher vehicle life, and sustained trend in high driven miles, all of which will increase demand for collision repair.
- **Protective:** High-performance coatings for tanks, offshore structures, and production expansion are driving demand for the foreseeable future. Growth of EV and associated component manufacture adds a new market area for Protective Coatings, including electrostatic dissipative (ESD) and chemical protective flooring solutions.

• Technology trends

- Automotive Refinish: Solventborne coatings will own the lion's share of sales, but environmental regulations will gradually increase waterborne coating penetration.
- Protective Coatings
 - Environmental regulations and consumer preferences are increasing the push toward waterborne and low-VOC coatings.
 - Growing end-user demand for longer lasting coatings applied in fewer coats in response to decrease in labor pool and increase in application costs

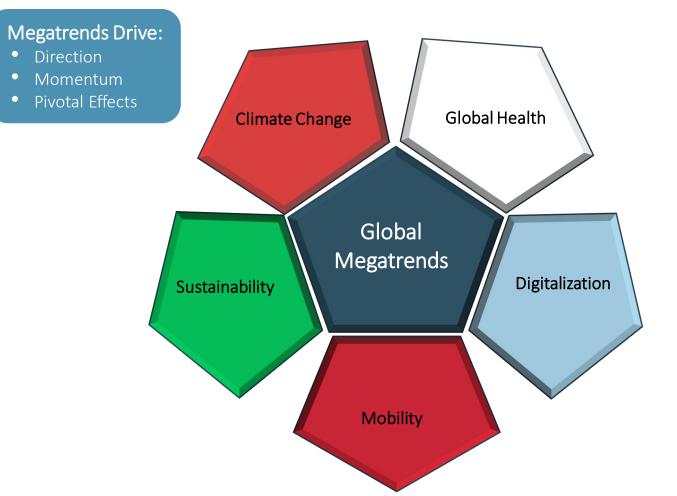


Looking to the Future



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Global Megatrends Drive Development of New Technology



FOR THE PAINT & COATINGS INDUSTRY [2023 - 2028]

• Global Health

The COVID epidemic drove researchers to create new technologies that address coatings-related issues like the spread of disease through high-touch surfaces.

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• Digitalization

The integration of software with machines has created new ways to formulate, apply, and evaluate coatings, as well as the ability to make 3D parts and structures.

Mobility

The need for lighter, more reliable components has created the need for new coating technologies for transportation and electric vehicles.

• Sustainability

The increase in global warming potential (GWP) has caused an increase in the efforts to decarbonize the environment.

Climate Change

The increase in ambient temperature, wildfires, floods, and wind damage has created the need for better technologies to address the associated changes in the climate. Increased investment in the built environment includes the use of new technologies to create tighter building envelopes.

Sustainability Drivers and Regulatory Pressures

- Sustainability is increasingly synonymous with circular economy – "an industrial system that is restorative or regenerative by intention and design."
 - Renewable energy
 - Eliminating use of toxic chemicals
 - Waste reduction and recycling
- Market shift toward industries and organizations to create sustainability initiatives and to track and publish metrics such as greenhouse gas emissions, waste management, water usage, social factors, and financial investments. A trickle-down effect on supply chain is increasing demand for sustainability frameworks and ESG programs with direct impact to paints and coatings manufacturers:
 - Mounting ESG mandates on climate disclosures
 - Increasing standards for VOC reduction for ozone emission, as • well as hazardous air pollutant control (Clean Air Act)
 - More comprehensive and lengthier TSCA assessment process • for new and existing chemicals
- Continuing and strengthening shift toward waterborne, high/all solids, and powder coatings across multiple coatings sectors

Figure E-19: Global Coatings Market by Technology (2013–2023)



Powder/Emerging Coating Technologies High-solids/Radiation-Cured

Sources: Global Sales by Coatings Technology (Source: BCC Research, Global Markets and Advanced Technologies for Paints and Coatings), ACA, Ellen MacArthur Foundation, The ChemQuest Group, Inc.



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FOR THE PAINT & COATINGS INDUSTRY [2023 - 2028]

Main Industry Dynamics in 2023 — Challenges and Opportunities



Market Dynamics	Coating Company Dynamics
Stagflation – low demand with historic inflation	Stable, predictable cashflow
Ukraine/Russia	Improving margins – delayed recovery of inflation
Labor shortages	Mid-teens ROIC
Looming recession	Low capital intensity
Relocating supply chains	Consolidating steadily
 Restricted panel of raw materials due to EHS regulations and registrations 	 Technology/innovation becoming higher driver of functional needs
 Innovation: EHS, multifunctional properties, sensors, and robotics 	 Different substrates, conductive materials, e-mobility Low cost-in-use and value-in-use enabling pricing power
e-Commerce impact on sales/marketing/manufacturing	 Moderate to high substitution costs
 Future digitalization and digitization strategies – Industry 4.0 and 5.0 	Sticky customers



Outlook: Supply Chain Recovery, Normalizing Margins, and Demand Slowdown

• The coatings industry remains a vital component to American businesses and consumers.

The coatings industry volume growth is a reasonable reflection of GDP; the industry has seen the value of coatings products increase significantly, although demand is slowing.

• Shortages of raw materials seeing continued improvement, which began mid-2022

Certain products that were available during the pre-supply chain crisis era are no longer produced, as raw material suppliers consolidated product lines to their most critical products during the crisis.

• Major feedstocks under pressure to more stable supply

- Pricing on petroleum-based chemicals appears to have peaked along with oil prices for the current economic cycle.
- ChemQuest has seen continued downward price movement in coating input costs in 2023, and indications are that costs continue to lower but at a slower pace entering 2024.



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- Report includes information and economic insight culled from Coatings TraQr®
- Purchasers of the corporate access license will receive ChemQuest's Excel spreadsheet associated with their purchase. Included in the spreadsheet is volume, value and growth rates by market and region for ease of comparing and merging internal company data.

For additional details regarding the U.S. Market Analysis, reach out to:

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Chemer uest actionable insights for success

Thank you! Questions? Daniel Murad President and CEO dmurad@chemquest.com

Deep Industry Knowledge – Extensive Industry Relationships – Decades of Industry Experience

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