

# 3 TOP TRENDS IN COATINGS ANALYSIS



**CASE chemicals categories** (coatings, adhesives, sealants, elastomers); the coatings market, which includes paints, was sized at **\$137 billion USD in 2021**.

Here we illustrate current coatings market trends and the analytical solutions to address them.

## Functional Coatings



Due to high electric vehicle (EV) and autonomous vehicle (AV) demands, the automotive semiconductor market alone, is expected to reach \$101 billion by 2026<sup>1</sup>. Combined with ever-rising demands for electronics, multiple industries have stressed semiconductor supplies, causing major manufacturing and logistics disruptions and necessitating ultra-quality assurance and improved throughput.

### Semiconductors

- Addressing shortages with new raw materials suppliers
- Ultra-trace impurities detection
- Chemical performance testing
- Production efficiency, automation



ICP-MS



DSC



FTIR

## Protective Coatings

By 2050, the over 65 population will nearly double<sup>2</sup>, leading to a great opportunity for the medical device industry. Demand will continue growing for coating chemicals and materials like polymers, ceramics, and material combinations.

### Medical Industry



TGA

- Antimicrobial, Anticorrosive and Nanocoatings efficacy
- Orthopedic implants
- Contact lenses and medication delivery

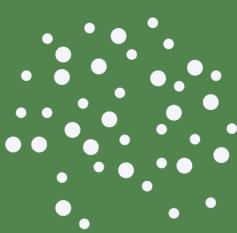
With energy efficiency and building construction booming globally, protective coatings withstand damaging environmental impacts like corrosion, an impact which costs over \$2.5 trillion USD annually<sup>3</sup>.

### Infrastructure and Architecture



UV/Vis/NIR

- Anticorrosive and Nanocoatings for anti-wear, anti-fatigue properties
- Film coatings, barrier for heat/cold, efficiency and aesthetics
- Opto-electronics coatings



Nanocoatings can combine with other functional and protective coatings to create entirely new characteristics, multi-functional and smart coating properties for a wide range of markets and applications.

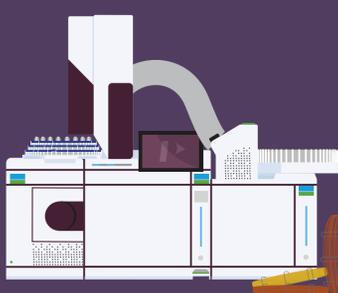
## Performance Coatings



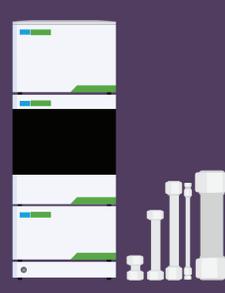
Regulatory guidelines on coatings are limiting environmental impacts like product volatile organic compounds (VOCs), leading to eco-friendly and sustainable coatings and encouraging growth in performance coatings<sup>4</sup>. The analytical solutions employed by manufacturers can also be sustainable by design, requiring fewer solvents, reducing power consumption, minimizing waste, and incorporating recycled materials.

### Sustainability

- Circular economy, renewable materials
- Water-based formulations
- Low VOC, eco-friendly coatings



GC-MS



HPLC

Regardless of the coating being manufactured, less availability of the raw materials needed affects production and profit margins. The need for manufacturers to contract with new suppliers means that analytical testing must prove quality expectations for raw materials, as well as testing throughout the manufacturing process and final product testing.

### References

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2. Global aging statistics: United Nations, Aging: [https://www.un.org/en/global-issues/ageing#:~:text=Globally%2C%20the%20population%20aged%2065,11%20in%202019%20\(9%25\)](https://www.un.org/en/global-issues/ageing#:~:text=Globally%2C%20the%20population%20aged%2065,11%20in%202019%20(9%25)).
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