

PPG: Innovation

May 2017



\$487MM Invested in research and development in 2016

\$470MM Average investment annually over the last four years in research and development, representing more than 3 percent of net sales from continuing operations

+3,500 Technical employees at more than 100 global locations

+30% Net sales from sustainable products in 2016, an increase of 50 percent since 2012

25% Target for total sales from products introduced in the last four years

Global Technical Footprint:

**Automotive & Industrial
Customer Application Labs**

**E-Coat Center of
Excellence:**
Marty, FR

**Refinish
Research:**
Milan, IT

**Customer
Application Lab:**
Busan, KR

**Aerospace
Research:**
Burbank, CA

**Packaging
Research:**
Milford, OH

Comex Research:
Mexico City, MX

**Customer
Application Lab:**
Sumare, BR

R&D Center:
Allison Park, PA

**Customer
Application Labs:**
Europe

**Global
Competitive
Sourcing Lab,
Customer
Application Labs:**
Tianjin, CH

**Customer
Application Lab:**
Clayton, AU

Key Rankings and Awards:



PPG earns R&D 100 Awards for automotive, aerospace electrocoat technologies

Two of our electrocoat technologies earned 2016 R&D 100 Awards in the mechanical/materials category. ENVIRO-PRIME® EPIC automotive electrocoat (e-coat) featuring a patented organic catalyst and AEROCRON™ 2100 aerospace e-coat primer are among the 100 most technologically significant products introduced into the marketplace over the past year. We also earned a Silver Award in the Green Tech category for our development of Enviro-Prime EPIC e-coat with organic catalyst.



Green technology earns prestigious SURCAR recognition

A green coating technology developed at our Wuhu, China, location received a 2016 SURCAR International Award in the category of environmental management. The technology reduced VOC emissions by almost 40 percent and energy consumption by 10 percent in an automotive customer's facility.



PPG-Comex ranks 3rd on Forbes Latin America Innovation List

Forbes magazine named PPG-Comex one of the most-innovative companies in Latin America, ranking third on the list of companies that have achieved "significant advantages over their competition" through investments in research and development. Forbes noted that in 2014 and 2015, PPG-Comex initiated 188 innovation projects, the second-highest number among the 16 companies on the top-innovators list; received two patents; and launched a major new product, VINIMEX® TOTAL, a 100 percent acrylic architectural coating with exceptional performance characteristics.



DURANAR SUNSTORM coating named among top products by BD&C magazine

DURANAR® SUNSTORM® coating by PPG was selected by readers and editors of BD&C magazine as one of the top building products of 2016. The coating, which features PPG's proprietary 70-percent polyvinylidene fluoride (PVDF) formulation inflected with pearlescent flake, was among 34 products selected in the "building envelope" category.



Gold recognition presented to PPG packaging coatings in China

Shenzhen Daman, one of the leading powder milk can producers in China, granted PPG Gold status as a result of our dedication to coatings innovation, exceptional customer service and a strong understanding of Chinese food safety and environmental protection regulations.



JOHN DEERE

PPG honored by John Deere Achieving Excellence Program

Our industrial coatings business again earned recognition as a partner-level supplier for 2015 in the John Deere Achieving Excellence Program. The partner-level status is Deere & Company's highest supplier rating, and we were selected for the honor in recognition of our dedication to providing products and service of outstanding quality and our commitment to continuous improvement.