

The Powder Coating Kitchen: Advanced Formulating Techniques

Course Description

ChemQuest Powder Coating Research is offering an advanced formulation short course entitled, the *PC Kitchen: Advanced Formulating Techniques*, in CQPCR's laboratory in Columbus, Ohio. This two-day course delves into more complex formulation techniques such as:

- Gloss reduction
- Hyper-durability
- Acrylics
- Low-temperature cure
- Chemical resistance
- High hardness
- Clearcoats
- Special effects.

Like the PC Kitchen Introductory course, it includes both incisive lectures and exciting hands-on laboratory demos including application to heat sensitive substrates and alternate powder curing techniques such as IR and UV. This course is designed for the experienced coating professional with prior formulating background. The registration fee is \$1,195 per person, and seats are limited to twelve attendees.

Day One

Morning

9:00 1 - Introductions and Course Overview

9:15 2 - Review of Binder Chemistries and Curing Mechanisms

10:00 3 - Manipulating Binder Chemistry for Performance – Functionality, Crosslink Density, Tg, Melt Viscosity.

10:45 Break

11:00 4 - Acrylic Chemistry

11:45 Hands-on Lab Demo: Low Temp Powder Application to MDF

12:15 Lunch (provided by CQPCR)

Afternoon

- 1:00 5 - High UV Durability: Superdurables and Fluoropolymers
- 1:35 6 - Gloss Reduction: Different Methods for Different Binders
- 2:15 7 - Clearcoats
- 2:45 Break
- 3:15 8 - Formulating for Hardness and Chemical Resistance
- 4:00 Open Discussion

Dinner on your own or with your new friends

Day Two

Morning

- 8:30 9 - Formulating for Corrosion Resistance
- 9:00 10 - Low Temperature Cure: Thermosetting Options
- 9:45 11 - Processing Specialty Powders: When to Turn the Heat Up and When to Turn it Down
- 10:30 Break
- 11:00 12 - UV Curable Powder Coatings: The Ultimate in Low Cure?
- 11:30 Lab Demo: UV Curable Powders on Plastic Cured with IR and UV
- 12:00 Lunch (provided by CQPCR)

Afternoon

- 1:00 13 - Special Effects – Textures, Veins and Hammertones
- 1:30 14 - Special Effects - Pearls and Metallics
- 2:00 Break
- 2:30 Lab Demo: Spraying Metallics and Pearls: Blended vs. Bonded
- 3:30 Discussion and Wrap-Up

Recommended Attire:

Attendees should wear safety glasses and comfortable shoes/clothes suitable for lab activities such as powder coating lab test panels and evaluating coating properties.

Nearby Hotels

There is ample free parking by the lab. If you want accommodations near the lab, you can consider the following:

Courtyard by Marriott (1.2 miles) – (614) 771-8999

<https://www.marriott.com/en-us/hotels/cmhwat-courtyard-columbus-west-hilliard/overview/>

Fairfield Inn (2.3 miles) – (614) 643-4300

<https://www.marriott.com/hotels/travel/cmhwef-fairfield-inn-and-suites-columbus-hilliard/>

Holiday Inn – (2.1 miles) - (614) 335-1150

<https://www.ihg.com/holidayinn/hotels/us/en/columbus/cmhbh/hoteldetail>

Hampton Inn – (2.2 miles) - (614) 851-5599

<https://www.hilton.com/en/hotels/cmhwex-hampton-columbus-west/>

About Your Instructors

Kevin Biller

Kevin Biller, aka “Joe Powder”, has been formulating and manufacturing powder coatings since he began his career in 1978 at the Glidden Paint Company. His illustrious career has taken from the confines of the laboratories of major coatings companies to the entrepreneurial world as an operations manager and the owner of a powder coating manufacturer. On his way he has published over 500 articles in various trade publications, including Paint & Coatings Industry, Powder Coated Tough, Focus on Powder Coatings, International Paint & Coatings Magazine, Finishing Today and PPCJ (Polymers Paint Colour Journal). He regularly publishes his Ask Joe Powder column in North America, Europe and the Middle East.



Kevin has four U.S. patents in powder technology and has delivered technical presentations all over the world. In 2007 Biller established the Powder Coating Research Group. This R&D laboratory is a center of excellence in powder coating innovation, evaluation and testing. In 2021 the ChemQuest Group acquired PCR Group and is now called CQPCR.

Nathan Biller



Nathan started in the powder coating industry as a third shift operator at the fledgling Jamestown Powder Coatings back in 2001. He was working his way through college with an IT major. He learned the technology from the ground up: initially in manufacturing, but quickly advancing to QC including adjusting formulas in production. He worked there until 2005 when Jamestown moved the plant to Pennsylvania.

Nathan resumed his powder coating career in 2011 when he joined the PCR Group as an entry level formulator. Since then, he has advanced to Product Development Manager responsible for formulation strategies and new product development. Since the 2021 acquisition by ChemQuest he has become CQPCR Vice President of Technology and is on the executive team of the ChemQuest Group.