# Follow industry best practices for spray painting safety.

Waterborne paint finishes are often referred to as “water-based.” This is misleading because the term seems to imply that pigments and resins in the finish are dissolved by water. If water truly acted as a solvent, a water-based finish could easily be washed from surfaces with a water-soaked rag—no matter how long the spray has been left to dry.

In actuality, waterborne finishes consist of minute spheres of resin (like polyurethane and acrylic) that are suspended or “borne” in a mixture consisting primarily of water and a small amount of solvent (such as glycol ether) that evaporates more slowly than water.

## What’s the risk to your business?

When a waterborne solvent is spread on a surface and allowed to dry, the water evaporates first—leaving behind a more slowly-evaporating solvent. Once a sufficient amount of the water has evaporated, the solvent softens the protective coating surrounding the tiny resin spheres and causes them to chemically bond into one continuous film that is resistant to water and other liquids.

Although waterborne finishes are less flammable and more environmentally friendly than solvent-based finishes, residue and deposits left by overspray of these finishes can be combustible, posing a significant threat to people and property.

NFPA 33 is the basis for OSHA rules for spray finishing operations.

## The NFPA standard to help workers stay safe.

Because waterborne or solvent-based finishes can be combustible, spray application operations should always conform to National Fire Protection Association (NFPA) 33: Standard for Spray Application Using Flammable or Combustible Materials. This standard is referenced in the International Fire Code and is the basis for Occupational Safety and Health Administration (OSHA) rules for spray finishing operations. Chapter 1 of NFPA 33, which covers the scope, purpose and application of the standard, states:

> 1.1.3 This standard shall also apply to spray application of water-borne, water-based and water-reducible materials that contain flammable or combustible liquids or that produce combustible deposits or residues. (NFPA 33, 2011 Ed.)

To best protect your business and assets, Nationwide® recommends adhering to the guidance presented in NFPA 33.

Nationwide®
is on your side

*Continued >>*

## Practical advice to help minimize the risk of fire.

- **Properly designate areas for spray application operations.** As stated in NFPA 33, Section 4.1, spray application operations and processes must be confined to spray booths, spray rooms or spray areas.
- **Schedule frequent cleaning and preventive maintenance.** Establish and enforce a schedule for cleaning the spray areas.
- **Remove residue from overspray.** Do not permit overspray residue to build up to dangerous amounts on surfaces surrounding the spray coating area. Use removable coatings or linings on spray booth surfaces, so that residues accumulate on these temporary coatings/linings, which can then be easily removed and thrown away.
  - **Properly dispose of residue/deposits.** Place combustible refuse in sealed, metal containers stored outside the building for removal by a hazardous waste disposal contractor. Never leave removed residue in uncovered containers on the floor or unattended in the building after business hours.
  - **Use non-sparking tools.** To minimize the chance of igniting combustible residues and deposits, use non-sparking tools to scrape/remove them.
- **Keep filters clean and in place.** Use disposable, multi-stage filters intended for spray coating operations. Do not operate a spray booth with missing ventilation system filters. (When a spray area ventilation system runs with filters missing, duct work quickly will be coated with overspray residue.)
- **Carefully store and handle paint supplies.** Waterborne paint supplies and solvents must be treated as combustible and flammable liquids. The NFPA standard (NFPA 30: Flammable and Combustible Liquids Code) must be applied to storage arrangements, along with proper handling methods.
- **Inspect ventilation ducts.** If residue is allowed to build up inside the exhaust duct and/or on fan blades, the system cannot draw the appropriate amount of air. The result: increasing amounts of overspray will accumulate in the spray area, increasing the fire hazard.
- **Protect fire suppression equipment.** Spray coating areas should be equipped with a fire suppression system (usually a sprinkler system). To avoid residue buildup on sprinklers, sprinkler heads can be covered with small, thin paper, cellophane or polyethylene bags. Change these bags regularly to ensure the sprinkler system will operate properly.
- **Restrict smoking and spray operations near open flames.** Post highly-visible signs near the spray operations area, which state: “No Smoking or Open Flames.”

Nationwide®

Providing solutions to help our members manage risk.℠

For your risk management and safety needs, contact Nationwide Loss Control Services: 1-866-808-2101 or LCS@nationwide.com.