



CRYO-STORAGE AND TECHNOLOGIES (CST)

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SafetyAlert-40

Epoxy Systems Spray Coatings Operations

General

All personnel involved in the handling and use of these materials must be thoroughly familiar with the hazards associated with the products as described in the Material Safety Data Sheet (MSDS). In addition, the application of epoxy coatings requires that applicators be familiar with each of the steps required in the application and the necessary safety precautions for each step.

Safe Handling Practices

STEP 1. SURFACE PREPARATION

It is important that the surface be prepared before the epoxy coating is applied. Abrasive blasting detergents and/or solvents may be used for cleaning. This may be followed by caustic or acid treatments to prepare the surface.



Safety and Health Concerns

- Exposure to airborne dusts, acid and alkaline mists, and/or solvents
- Flammability of solvents

Protective Measures

- Use adequate ventilation
- Use respirators
- Wear protective clothing, chemical-resistant gloves, and boots
- Wear protective eyewear
- Change personal protective equipment (PPE) as needed

STEP 2. EQUIPMENT PREPARATION

Spray equipment for the application of the epoxy coatings must be prepared prior to use. Solvents may be used to purge lines and clean the spray heads. The equipment must be assembled and tested.



Safety and Health Concerns

- Inhalation of solvents during equipment preparation
- Skin contact with solvents and residual coating materials
- Injection of coating through skin from high-pressure equipment
- Flammability of solvents

Protective Measures

- Use adequate ventilation
- Use respirators
- Wear disposable coveralls and chemical-resistant gloves
- Wear protective eyewear
- Follow safe work practice procedures and equipment manufacturers' instructions



Responsible Care
Good Chemistry
at Work

STEP 3. BLENDING EPOXY COATINGS

Coatings are generally supplied as two-component systems. In some systems, curing agents and epoxy resins are stored in separate holding tanks and combined later at the spray gun. Conventional spray equipment requires the resin and curing agents to be blended manually before the coating is applied. Solvents or reactive diluents may be added to thin the resin.



Safety and Health Concerns

- Skin and inhalation exposure when thinning epoxy resins with solvents or reactive diluents
- Skin exposure by direct contact with coating system
- Flammability of solvents

Protective Measures

- Use adequate ventilation
- Use respirators
- Wear disposable coveralls, chemical-resistant gloves, and boots
- Wear protective eyewear
- Follow safe work practice procedures

STEP 4. SPRAY APPLICATION

Epoxy coatings may be applied with compressed air spray equipment, high-pressure airless, or air-assisted airless spray equipment. A ventilated spray booth can be used to control overspray while coating small objects. Where objects are large or where coatings are sprayed outdoors, personal protective equipment is necessary to provide protection from overspray.



Safety and Health Concerns

- Fire hazard from improperly grounded equipment
- Injection of coating system through skin from high-pressure equipment
- Skin exposure by direct contact with coating system
- Skin and inhalation exposure to overspray mists

Protective Measures

- Spray equipment and target object must be properly grounded
- Use adequate ventilation
- Use respirators
- Wear disposable coveralls, chemical-resistant gloves, and boots
- Wear protective eyewear
- Remove contaminated clothing at breaks
- Remove personal protective equipment outside of work area and avoid skin contact with coating

STEP 5. CURING

Once the spray coating has been applied, the system must cure. Depending on the formulation, ventilated curing ovens may be used or the coating will dry at room temperature with natural ventilation.



Safety and Health Concerns

- Inhalation of coating system vapors
- Flammability of solvent vapors from uncured coating systems
- Skin contact with uncured coatings

Protective Measures

- Use adequate ventilation
- Use respirators
- Wear disposable coveralls and chemical-resistant gloves if contact is possible

STEP 6. CLEANUP

When the job is complete, tools and equipment must be cleaned. This includes purging feed lines with solvent and partially disassembling spray equipment.



Safety and Health Concerns

- Ground of equipment and flammability of solvents
- Inhalation of solvents during equipment cleaning
- Skin contact with solvents and residual epoxy coatings
- Injection of solvent and coating through skin from high-pressure spray equipment
- Eating, drinking, or smoking before cleaning exposed skin

Protective Measures

- Ground all equipment while cleaning with solvents
- Use adequate ventilation during equipment cleaning
- Use respirators while cleaning equipment
- Wear chemical-resistant gloves and protective eyewear
- Remove protective equipment before entering lunch or break rooms
- Avoid skin contact when removing personal protective equipment
- Clean or dispose of contaminated clothing
- Use industrial skin cleaners to remove any coating system on skin
- Shower at the end of the shift

Remember: Always read the MSDS before using a chemical.

Information Sources

- Compressed Gas Association
1725 Jefferson Davis Highway, Suite 1004
Arlington, VA 22202-4102
Phone: 1-703-412-0900
- National Fire Protection Association
1 Batterymarch Park, P.O. Box 9101
Quincy, MA 02269-9101
Phone: 1-800-344-3555

Emergency Response Telephone Numbers

USA

CHEMTRAC

1-800-424-9300 (Toll Free in the U.S., Canada, and U.S. Virgin Islands)
703-527-3887 for calls originating elsewhere (Collect calls are accepted)

CHEM-TEL, INC.

1-800-255-3924 (Toll Free in the U.S., Canada, and U.S. Virgin Islands)
813-248-0585 for calls originating elsewhere (Collect calls are accepted)

INFOTRAC

1-800-535-5053 (Toll Free in the U.S., Canada, and U.S. Virgin Islands)
352-323-3500 for calls originating elsewhere (Collect calls are accepted)

3E COMPANY

1-800-451-8346 (Toll Free in the U.S., Canada, and U.S. Virgin Islands)
760-602-8703 for calls originating elsewhere (Collect calls are accepted)

NATIONAL RESPONSE CENTER (NRC)

Call NRC (24 Hours)

1-800-424-8802 (Toll Free in the U.S., Canada, and U.S. Virgin Islands)
202-267-2675 in the District of Columbia

MILITARY SHIPMENTS

703-697-0218 Explosives/Ammunition Incidents (Collect calls accepted)
1-800-851-8061 All other dangerous goods incidents

NATIONWIDE POISON CONTROL CENTER (United States Only)

1-800-222-1222 (Toll Free in the U.S.)

CANADA

CANUTECH

613-996-6666 (Collect calls are accepted)
*666 Cellular (In Canada only)

Visit Web Site: www.cstusa.biz for further information

or

Call 410-982-6585

or

Ask your local sales representative