

FS No. 043-0624

## Chemical Agent Resistant Coating Waste Disposal Guidelines

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**BACKGROUND.** Chemical Agent Resistant Coating (CARC) is a coating system that provides surfaces that are easily and effectively decontaminated after exposure to liquid chemical agents. There are several types of coatings in the CARC system: an epoxy polyamide primer, epoxy polyamide enamel, and aliphatic polyurethane paint. Each of the coatings is supplied as either a one-component or two-component system. For the two component systems, when the two components are combined, a terminal reaction begins which makes an impermeable coating when dry.

**APPLICATION.** The surfaces to be coated with CARC must sometimes be stripped. After stripping, the surface must be cleaned of all oils, greases, and water. When the item is ready for coating, the two components are combined and allowed to stand for a prescribed period. The mixture must then be applied within a given amount of time known as the “pot life” in order to be effective.

**WASTE STREAMS.** There are several waste streams associated with the application of CARC. The most common examples are unserviceable CARC components (shelf-life cannot be extended) which include both solvent based and water dispersible components, CARC mixtures with expired pot life, spent thinners and stripping solvents contaminated with CARC, blasting media with dry CARC residue, and empty containers. Each individual waste stream must be managed and disposed differently. A major change to the formulation of CARC systems is that they are now lead and hexavalent chrome (chromium (VI)) free.

### DISPOSAL GUIDELINES

#### *Unserviceable CARC components:*

- Expired Shelf-Life Solvent Based CARC: Seek a shelf-life extension for this product. If this is not possible, then these wastes must be managed as a hazardous waste with the characteristic of ignitability (EPA# D001) and possibly toxicity (chromium). If chromium is present in this waste stream, the EPA exemption for trivalent chrome (see paragraph below) will not apply and the waste will be hazardous for ignitability (D001) and chromium (D007).
- Expired Shelf-Life Water Dispersible CARC Part A: Seek a shelf-life extension for this product; however, if this is not possible, then recommend incineration as the preferred method of disposal. Incineration contracts may be established through the Defense Logistics Agency Disposition Services (DLA-DS). Coordinate final disposal through the installation environmental office. Certain colors (e.g., brown 30051 and green 34094) contain trivalent chromium and trivalent chromium only. There is an exemption in the

federal Resource Conservation and Recovery Act (RCRA) regulations for solid wastes that fail the TCLP test for chromium only (no other metal or any other characteristic/reason) and that the generator can prove that the chromium present in the waste is exclusively or nearly exclusively trivalent chromium (Title 40 Code of Federal Regulation (CFR) Part 261.4(b)(6)(i)), then the waste will not be a hazardous waste. State regulations may not have this exemption so first coordinate with the installation environmental office and/or state regulatory agency before using this option.

- Expired Shelf-Life Water Dispersible CARC Part B (catalyst): Reclamation is the best option. If this is not possible, check the Safety Data Sheet (SDS) to determine the Flash Point. If it is less than 140° F (60° C), then it is an ignitable waste hazardous waste (D001). If an SDS cannot be located, then the waste must be tested to see if it exhibits the characteristic of ignitability. Non-hazardous wastes should be incinerated as the preferred method of disposal. Incineration contracts may be established through the DLA-DS. Coordinate final disposal through the installation environmental office.

*CARC Mixtures with expired pot life:*

- Solvent (non-aqueous) Based CARC: Should be allowed to fully cure. The dried mixture may be disposed in a municipal solid waste landfill (RCRA Subtitle D).
- Water Dispersible CARC: Should be allowed to fully cure. The dried mixture may be disposed in a sanitary landfill.

*Spent thinners and stripping solvents contaminated with CARC:* Generally, spent thinners are hazardous for the characteristic of ignitability (D001). If the waste contains CARC with the colors brown 30051 and green 34094, then the waste will also be hazardous for chromium (D007). If the waste is not an ignitable waste, recommend incineration as the preferred method of disposal. Incineration contracts may be established through the DLA-DS. Coordinate final disposal through the installation environmental office.

*Blasting media with dry CARC residue:* If the CARC contaminated dust is free of heavy metals (e.g., cadmium, chromium (VI), lead), then the waste may be disposed in a sanitary landfill. If there are heavy metals present, then the waste must be analyzed using the *Toxic Characteristic Leaching Procedure* (EPA SW-846 Test Method 1311) and disposed accordingly.

*Empty containers:* Containers that held any CARC component may be recycled or disposed as ordinary trash as long as they meet the definition of empty provided in Title 40 CFR 261.7(b) (less than 1 inch or less than 3% capacity of the container).

## REFERENCES

- Code of Federal Regulations. "Identification And Listing Of Hazardous Waste," Title 40 Part 261. <https://www.govinfo.gov/app/collection/cfr/>
- EPA. 1992. SW-846, Test Method 1311, Toxicity Characteristic Leaching Procedure. [www.epa.gov](http://www.epa.gov)