

EG 3-4: Metal Finishing, Coating, Machining, and Cooling

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CCDOA Environmental Specialist

I. Activity Description

Activities such as:

1. Metal finishing processes are used to prepare the surface of a part for better adhesion, improved surface hardness and improved corrosion resistance. Typical metal finishing operations include, chemical conversion coating, anodizing, electroplating and any operation that chemically affects the surface layer of a part
2. Coating applications involve a material being applied to the surface of a part to form a decorative or functional solid film. The most common coatings are primers and topcoats. Facilities can apply coatings to aircraft components using several methods of application which include, spraying, brushing, rolling and dipping. Nearly all coatings used contain a mixture of organic solvents
3. Metal machining and parts cooling involves the use of cutting oils, lubricating oils, grease, machine coolants and degreasing solvents to build or modify parts

II. Potential Environmental Risks

- A. The Clark County Department of Aviation (CCDOA) - Environmental, Health & Safety (EHS) office has identified the following environmental concerns associated with these activities:
 1. Air pollution and odors
 2. Improper or inappropriate disposal of metal scraps from cutting operations.
 3. Improper or inappropriate disposal of wastes
 4. Contamination of the sewer system
 5. Contamination of soil
 6. Solvent and oil spills
- B. Potential consequences from performing the activity incorrectly:
 1. Property damage
 2. Personal injury
 3. Long-term damage to the environment
 4. Citations, Notices of Violation and related (financial & non-financial) penalties

III. Critical Operating Requirements

- A. Prohibited Activities
 1. Discharges to any floor drain, sewer drain or storm water drain
 2. Controlled or uncontrolled releases of any kind to outside air, water or soil

3. Improper/illegal disposal of hazardous wastes generated in metal finishing, coating, machining and cooling activities is strictly prohibited
 4. Spraying of paint coatings is prohibited, unless prior approval from the CCDOA EHS office is received
 5. Welding and cutting is prohibited without prior authorization and issuance of a Hot Work Permit by the CCDOA EHS office
- B. Required Activities
1. Some applications may require permitting
- C. General Considerations
1. Each operator and tenant conducting metal finishing, coating, machining and cooling activities is responsible for understanding the applicable regulations and managing their activities accordingly. This Environmental Guideline is meant as guidance and does not supersede any regulations
 2. To avoid dangerous accidents, fire or explosions, special care must be taken in handling ignitable, reactive or incompatible wastes
 3. Owner / operators / tenants handling ignitable and reactive wastes must be able to demonstrate that these wastes are protected from ignition sources. Such protection includes "NO SMOKING" signs placed where ignitable and reactive wastes are stored, designation of separate smoking areas and additional handling requirements
 4. Owner / operator / tenants must take precautions against the combined storage of materials and/or wastes that might react dangerously with one another or with the unit in which they are stored. Such a reaction might cause a fire or explosion, or the release of toxic gases or fumes
 5. To determine if particular wastes or storage units are compatible, the RCRA regulations list some common potentially incompatible wastes (40 CFR 262, Appendix V). For compatibility of wastes not listed in the regulations, the owner/operator/tenant may need to test the waste and/or the storage container for compatibility
 6. Develop procedures for the various recordkeeping requirements that apply to facilities as a part of your hazardous waste management programs. A filing system must be in place for the uniform hazardous waste manifest forms as well as, training and inspection information. These records must be kept for at least three (3) years
- D. Training Requirements
1. Train all employees in the proper handling of hazardous materials, hazardous wastes and spill response and prevention
 2. Employee training programs shall inform personnel at all levels of responsibility who are involved in metal finishing, coating, machining and cooling activities that may impact storm water runoff. Training shall address topics such as spill response, good housekeeping and material management practices. Contractor

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- or temporary personnel shall be informed of facility operation and design features in order to prevent discharges or spills from occurring
- 3. Make all product Safety Data Sheets (SDS) and chemical hygiene plans available to all employees
- 4. OSHA Hazard Communication 29 CFR 1910.1200
- 5. Conduct additional site-specific training as required

E. **Storage and Materials Management Requirements**

- 1. Employees handling Hazardous Wastes must receive site-specific training
- 2. Provide employees with the proper equipment to store and label hazardous wastes
- 3. Properly label all containers in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) and store in areas with secondary containment and proper signage and support systems
- 4. Ensure adequate containment for all bulk storage containers, and that all containers and containments are in good operating condition
- 5. Use Environmental Guideline EG 7-1, General Waste Management to facilitate waste classification

IV. Planning Requirements

- A. Develop procedures for the various recordkeeping requirements as a part of your hazardous waste management programs. Uniform hazardous waste manifest forms as well as training and inspection records must be kept on file for at least three (3) years

V. Critical Tasks

- A. Review metal finishing, coating, machining and cooling operations for environmental regulatory processes with an emphasis on air permitting and waste characterization and subsequent compliance management

VI. Emergency Response

- A. If a spill occurs, immediately stop the source of the spill if possible. Refer to Environmental Guideline EG 6-1, Spill Response.
- B. Call the Airport Control Center (702) 261-5125 or the appropriate Customer Service Desk for the area (see phone numbers in Section IX below), immediately, for all spills
- C. Use absorbent materials to manage spills. Contain used materials and dispose offsite at a permitted disposal facility
- D. Prevent products and other chemicals from entering any sewer, storm drain, drainage waterway or soil area using whatever means available (i.e., barriers, blocking devices, etc.)

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- E. Control spills to eliminate imminent risk to human health and the environment and to minimize property damage
- F. Complete the CCDOA Spill Reporting Form and return the completed form to the CCDOA EHS office within 24-hours of the release (for petroleum products, hazardous liquids and solvents)

VII. Inspection and Maintenance Requirements

- A. To make sure the facility is operating properly, the owner operator must visually inspect the facility for malfunction, deterioration, operator errors and leaks
- B. Inspections should follow a written inspection schedule developed and followed by the owner/operator/tenant
- C. The schedule identifies the types of issues to be inspected and frequency inspections should be conducted
- D. Unit-specific inspections or requirements also must be included in the schedule. The owner/operator must record inspections in a log or summary and must remedy any problems identified during inspections

VIII. Expected Records and Outputs

- A. Equipment inspection reports
 - 1. The inspections should follow a written inspection schedule developed and followed by the owner/operator/tenant
 - 2. These inspections will ensure the proper maintenance and operation of critical equipment used for these activities
- B. Equipment maintenance records
 - 1. Will be maintained by tenant
 - 2. The owner/operator/tenant must record inspections in a log or summary and must remedy any problems identified during inspections
- C. Waste Management Plan (including generation locations and waste determinations)
 - 1. While this plan is not required, it is highly recommended to fully predetermine the generation, control and storage of industrial and potentially hazardous wastes
- D. Waste Analysis and Profiles - Product Safety Data Sheets (SDSs) and Generator Knowledge

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1. All non-municipal wastes must be profiled by the landfill for disposal, this frequently requires chemical analyses be performed by an EPA-certified analytical laboratory
- E. Disposal manifest(s), Land Disposal Restrictions (LDR) & shipping forms
 1. Originating shipping and disposal forms must be developed and kept on-site manifests and LDR forms must be obtained from the disposal facility in a timely fashion or notifications to USEPA must be made
 2. Handlers of hazardous waste (generators, or treatment, storage or disposal facilities) may obtain the Unified Hazardous Waste Manifest forms from any source that has been approved by EPA Manifest Registry to print and distribute the form. Manifests are typically provided by most waste transportation contractors
 3. All manifests should be maintained on file by the generator for at least three (3) years
- F. Inspection records
 1. Waste storage area inspection records must be maintained on-site by the operator for a minimum of three (3) years
- G. Evidence of training
 1. Employees involved in the handling of hazardous wastes must receive site-specific training per RCRA guidance
 2. Site-specific hazardous waste training records for employees must be maintained on site by the generator for a minimum of three (3) years
 3. Formal certifications are not necessary, some form of "proof of training" (such as sign-in sheets and handouts) is expected to be available and signed by the attendees and should be maintained on file by the operator
- H. Safety Data Sheets (SDSs)
 1. Manufacturers of coating products will supply these documents on demand. SDSs for coating products should be made available to all employees engaged in painting activities and maintained on file by the operator at the facility

IX. References

- A. Phone Numbers
 1. CCDOA (Airport) Control Center (spill and release reporting).....(702) 261-5125
 2. Henderson Executive Airport Customer Service Desk.....(702) 261-4800
 3. North Las Vegas Airport Customer Service Desk.....(702) 261-3806
 4. CCDOA Environmental, Health & Safety (EHS).....(702) 261-5692
 5. NDEP Spill Reporting Hotline(for spills 25 gallons or greater)..... 1(888) 331-6337

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- B. Guidance Materials (list is not limited to the following)
 - 1. Manufacturer's operating and maintenance (O&M) manuals
 - 2. CCDOA Tenant Bulletins
 - 3. Materials of Selection Safety Data Sheet documents and other manufacturer specification information
 - 4. DOT Labeling and Placard Guidance
 - 5. Spill Prevention Control and Countermeasure (SPCC) Plan
 - 6. Product Safety Data Sheets (SDSs)
- C. Training Materials (list is not limited to the following)
 - 1. Operator site specific training materials for handling hazardous wastes
- D. Related Environmental Documents (list is not limited to the following)
 - 1. Environmental Guideline EG 1-2, Cleaning Washing - Aircraft _ Vehicles and Equipment
 - 2. Environmental Guideline EG 1-3, Cargo Loading and Offloading
 - 3. Environmental Guideline EG 1-4, Management of Aircraft Lavatory Water and Waste
 - 4. Environmental Guideline EG 1-5, Maintenance of Aircraft, Vehicles and Equipment
 - 5. Environmental Guideline EG 1-7, Storage of Vehicles and Equipment Containing Chemicals
 - 6. Environmental Guideline EG 2-1, Painting and Paint Removal
 - 7. Environmental Guideline EG 2-2, Cleaning Washing - Indoor Industrial Surfaces
 - 8. Environmental Guideline EG 2-3, Maintenance of Pretreatment Devices
 - 9. Environmental Guideline EG 2-4, Janitorial Activities
 - 10. Environmental Guideline EG 2-5, Cleaning Washing - Outdoor Areas and Structures
 - 11. Environmental Guideline EG 3-1, Ozone Depleting Compound Management
 - 12. Environmental Guideline EG 3-2, Heating, Ventilation, and Air Conditioning (HVAC) Operations
 - 13. Environmental Guideline EG 3-4, Metal Finishing, Coating, Machining, and Cooling
 - 14. Environmental Guideline EG 3-5, Parts Washing
 - 15. Environmental Guideline EG 4-1, Construction
 - 16. Environmental Guideline EG 4-2, Planning and Design
 - 17. Environmental Guideline EG 4-3, Procurement
 - 18. Environmental Guideline EG 4-4, Tenant Operating Guidance
 - 19. Environmental Guideline EG 4-5, Tenant Relocation or Closeout
 - 20. Environmental Guideline EG 5-2, Management of Petroleum Products (SPCC Plan)

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21. Environmental Guideline EG 5-3, Storage, Handling and Management of Hazardous Materials
 22. Environmental Guideline EG 6-1, Spill Response
 23. Environmental Guideline EG 6-2, Abandoned Material Response
 24. Environmental Guideline EG 7-1, General Waste Management
 25. Environmental Guideline EG 7-2, Management of Recyclable and Reusable Materials
 26. Environmental Guideline EG 7-3, Management of Hazardous Wastes
 27. Environmental Guideline EG 7-4, Management of Universal Wastes
 28. Environmental Guideline EG 7-5, Management of Special Wastes
 29. Environmental Guideline EG 7-6, Management of Materials
- E. Applicable Regulations (list is not limited to the following)
1. NAC 444/NRS 444 Sanitation
 2. NAC 445A Water Controls
 30. NAC 445B Air Controls
 31. NAC 590 Motor Vehicle Fuel, Petroleum Products and Antifreeze
 32. NAC 459/NRS 459 Hazardous Materials
 33. 29 CFR 1910 Occupational Safety and Health Standards
 34. 29 CFR 1926 Safety and Health Regulations for Construction
 35. 40 CFR Protection of the Environment
 36. Uniform Fire Code/NFPA
 37. Airport Rules and Regulations
- F. Other Documents (list is not limited to the following)
1. Operator standard operating procedures (SOPs) for equipment operations, aircraft servicing and spill prevention, control and countermeasure activities
 2. The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

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