



METAL FINISHING, COATING, MACHINING, AND COOLING

ENVIRONMENTAL GUIDELINES



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ACTIVITY DESCRIPTION

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.

Coating Applications involves 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, brushing rolling, and dipping. Nearly all coatings used contain a mixture of organic solvents.

Metal Machining and Parts Cooling involve the use of cutting oils, lubricating oils, greases, machine coolants, and degreasing solvents to build or modify parts.

POTENTIAL ENVIRONMENTAL RISKS

The following environmental concerns are associated with these activities:

- Air pollution and odors
- Improper or inappropriate disposal of metal scraps from cutting operations
- Improper or inappropriate disposal of wastes
- Contamination of the sewer system
- Contamination of soil
- Solvent and oil spills

Potential consequences from performing the activity incorrectly:

- Personal injury, property damage, or long-term damage to the environment
- Possible regulatory noncompliance, Notices of Violation, and related [financial & non-financial] penalties

RECOMMENDED OPERATING CONTROLS

Prohibited Activities

- Conducting metal finishing, coating, machining, and cooling application activities outdoors is prohibited unless DIA Environmental Services is contacted (see contact information) and a Stormwater Management Plan (SWMP) Industrial Activities Survey/Matrix Questionnaire is completed and submitted for approval. It is recommended that these activities be conducted in a booth whenever possible.
- Discharge to any floor drain, sewer drain, or storm water drain.
- Controlled or uncontrolled release of any kind to outside air, water or soil.
- Improper disposal of hazardous wastes generated in metal finishing, coating, machining, and cooling activities is strictly prohibited.

General Considerations



- 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.
- To avoid dangerous accidents, fire, or explosions, special care must be taken in handling ignitable, reactive, or incompatible materials and wastes.
- Owner/operator/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.
- 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.
- To determine if particular wastes or storage units are compatible, the RCRA regulations list some common potentially incompatible wastes (40 CFR 264, 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 unit for compatibility.
- Develop procedures for the various recordkeeping requirements that apply to airports 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 3 years.

Training Requirements

- Train all employees in the proper handling of hazardous materials, hazardous wastes, and spill response procedures.
- Make all SDSs and chemical hygiene plans available to all employees.
- Conduct additional site-specific training as required.
- Employee training programs shall inform personnel at all levels of responsibility who are involved in industrial activities that may impact Stormwater runoff. Training shall address topics such as spill response, good housekeeping, and material management practices. Contractor or temporary personnel shall be informed of plant operation and design features in order to prevent discharges or spills from occurring.
- Employee training programs shall inform personnel at all levels of responsibility who are involved in industrial activities that may impact stormwater runoff. Stormwater training shall address topics such as spill response, good housekeeping, and material management practices. Contractor or temporary personnel shall be informed of plant operation and design features in order to prevent discharges or spills from occurring.

Storage and Materials Management

- Employees handling hazardous wastes must receive site-specific training.
- Provide employees with the proper equipment to store and label hazardous wastes.
- Maintain legible labels and markings on all containers and tanks.
- Ensure adequate secondary containment for all bulk storage containers, and that all containers and containment are in good operating condition.



- Use General Waste Management to facilitate waste classification.

PLANNING REQUIREMENTS

CRITICAL TASKS

EMERGENCY RESPONSE

If a spill occurs, refer to Environmental Guideline Spill Response.

- Call DEN Communications Center immediately at 303-342-4200 for all spills.
- Control spills to minimize property damage and eliminate imminent risk to human health and the environment.
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- Containerize all collected wastes and evaluate for labeling, storage and disposal.

INSPECTION AND MAINTENANCE REQUIREMENTS

To make sure the facility is operating properly, the owner/operator must visually inspect the facility for malfunction, deterioration, operator errors, and leaks.

- Inspections should follow a written inspection schedule developed and followed by the owner/operator / tenant.
- The schedule identifies the types of issues to be inspected and frequency inspections should be conducted.
- 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.

Areas where spills are more likely to occur, such as loading and unloading areas should be inspected daily when in use.

EXPECTED RECORDS AND OUTPUTS

Equipment inspection reports

- The inspections should follow a written inspection schedule developed and followed by the owner/operator/tenant.
- These inspections will ensure the proper maintenance and operation of critical equipment used for these activities.

Equipment maintenance records

- Will be maintained by tenant.
- The owner/operator/tenant must record equipment inspections in a log or summary and must remedy any problems identified during inspections.



Waste Management Plan (including generation locations and waste determinations).

- While this plan is not required, it is highly recommended to predetermine the generation, control, and storage of industrial and potentially hazardous wastes.

Waste Analysis and Profiles- SDSs and Generator Knowledge

- All non-municipal wastes must be profiled by the landfill for disposal. This frequently requires chemical analysis be performed by an EPA-certified analytical laboratory.

Disposal manifest(s), LDR & shipping forms

- 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. (Manifest forms can be obtained from the Colorado Department of Public Health & Environment)
- All manifests should be maintained on file by the generator for at least three years.

Inspection records

- Waste storage area inspection records must be maintained on site by the operator for a minimum of 3 years.

Evidence of training

- Employees involved in the handling of hazardous wastes may need to receive site-specific training per RCRA guidance.
- Site-specific hazardous waste training records for employees may need to be maintained on site by the generator for a minimum of three years.
- While formal certifications are not always necessary, some form of “proof of training” (such as sign-in sheets and handouts) is expected and should be maintained on file by the operator.

SDSs

- Manufacturers will supply these documents on demand. SDSs should be made available to all employees and maintained on file by the Generator at the facility. Generator knowledge documentation must be kept on site.

REFERENCES

Contacts

- DEN Communications Center (for spill reporting): 303-342-4200
- DEN Environmental Services (Main Line): 303-342-2730; DIA.Environmental@flydenver.com
- Mark Kunugi, DEN Environmental Services: 303-342-2629; mark.kunugi@flydenver.com

Guidance Materials

- Operator site-specific training materials for handling hazardous wastes SDSs
- DEN Stormwater Management Plan (SWMP)



- DOT Labeling and Placarding Guidance
- SPCC Plan

Related Environmental Guidelines

- Spill Response
- General Waste Management
- Management of Hazardous Wastes
- Management of Special Wastes

Applicable Regulations

- 40 CFR 50, 51, 53 and 58 National Ambient Air Quality Standards
- 40 CFR 63 NESHAP for Aerospace Manufacturing and Rework Facilities
- 40 CFR 117.3 Determination of Reportable Quantities for a Hazardous Substance
- 40 CFR 261-282 Federal RCRA Regulations
- 40 CFR 401 Effluent Limitation Guidelines
- 40 CFR 433 Effluent Guidelines and Standards for Metal Finishing
- C.R.S. 25-8-101 through 703 Colorado Wastewater Quality Control Act
- 5 CCR 1002-61 Colorado Discharge Permit System (CDPS) Regulations
- Metro Wastewater Rules and Regulations
- Denver Wastewater Management Division Rules and Regulations
- DIA Rules and Regulations Section 180.01 through 180.03-5
- Article II Section 56-16, 56-17, 56-102 of the City and County of Denver Municipal Code.

Other Documents

- DEN Managers Bulletins
- City and County of Denver Executive Orders