

Fact Sheet  
January 2002

# Wastewater Produced in Jewelry Manufacturing



## JEWELRY MANUFACTURING WASTE STREAM

***DTSC is one of six Boards and Departments within the California Environmental Protection Agency. DTSC's mission is to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.***

State of California



California  
Environmental  
Protection Agency



### What is this waste?

Water is used to rinse pieces of jewelry between the various steps involved in casting, stripping, cleaning, and plating operations. When rinse water becomes so dirty that it is no longer useful, it becomes waste and is referred to as "spent rinse water" or "wastewater." Wastewater from jewelry manufacturing operations is usually corrosive\*. It also usually contains dissolved metals such as gold, silver, platinum, rhodium, copper, nickel, zinc, chrome, or other metals. It may also contain cyanide.

### Why is this waste considered hazardous?

Waste that is corrosive, or contains cyanide or dissolved metals, is generally harmful to human health and the environment, and is therefore considered hazardous [1]. Precious metals are commonly recovered from wastewater in the form of a "wastewater treatment sludge." The sludge is typically dried in a filter press. The resulting "filter cake" usually contains metals, and may contain cyanide, and is therefore considered hazardous.

### Why must this waste be managed safely?

Because this waste is hazardous to human health and the environment, it is important to manage it safely, even if it contains precious metals. Current laws and regulations tell you how to manage hazardous waste in order to protect public health and safety, and the environment [2]. These laws and regulations also specify how to recover precious metals from hazardous waste that contains precious metals. Jewelry manufacturers can protect public health and safety, and avoid costly fines and penalties, by managing their hazardous wastes in compliance with these laws and regulations.

\* "Corrosive" is described in California Code of Regulations, title 22, section 66261.22.  
‡ "Treatment" is any method, technique, or process which is designed to change the physical, chemical, or biological character or composition of any hazardous waste or any material contained therein, or removes or reduces its harmful properties or characteristics for any purpose, including, but not limited to, energy recovery, material recovery, or reduction in volume. (Health & Saf. Code 25123.5 and Cal. Code Regs., tit. 22, § 66260.10.)

***The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our web site at [www.dtsc.ca.gov](http://www.dtsc.ca.gov).***

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## How should I manage this waste?

If your business generates a hazardous waste, it is your responsibility to ensure that waste is properly managed (please see the Department of Toxic Substances Control (DTSC) fact sheet on "[Hazardous Waste Generator Requirements for Jewelry Mart Operators](#)").

It is unlawful to dump any hazardous waste into the trash or onto the land, or to pour hazardous waste down the sink, into a storm drain, or down the toilet. If you want to treat‡ the hazardous wastewater that you generate, or if you want to recover precious metals from your hazardous wastewater, you must get a grant of authorization or permit for onsite¥ hazardous waste treatment. You can [contact your local Certified Unified Program Agency \(CUPA\) for assistance](#), or DTSC at (800) 728-6942 if there is no CUPA in your area.

The CUPA cannot grant authorization to treat hazardous waste that contains cyanide. If you want to treat and dispose of any waste that contains cyanide, you must contact DTSC for assistance. For additional information regarding cyanide waste, please see the DTSC fact sheet on "[Cyanide Waste Produced in Jewelry Manufacturing](#)." You must also get a permit from your local wastewater treatment facility if you want to discharge your treated waste to the sewer. Your local CUPA can also assist you in complying with the laws and regulations governing the discharge of treated waste.

You can also have your hazardous wastewater treated offsite† by a facility that is permitted to treat the waste. However, it is unlawful to use the United States Postal Service, any common parcel carrier, or anyone other than a DTSC-registered transporter to

transport your hazardous waste offsite. For additional information regarding transport requirements, please see the DTSC fact sheet on "[Hazardous Waste Generator Requirements for Jewelry Mart Operators](#)."

## What if the owner of the building where my business is located has a wastewater treatment unit?

This would be considered offsite treatment of your waste. The building owner or operator must have a permit for offsite hazardous waste treatment in order to treat and dispose of ANY hazardous waste that is generated by your business. For additional information, please see the DTSC fact sheet on "[The Standardized Permit for Building Owners of Jewelry Marts](#)."

## Can I reduce the amount of wastewater that I generate?

Yes. The DTSC Office of Pollution Prevention and Technology Development (OPPTD) can help you identify ways to reduce the amount of hazardous wastewater that you generate. You can contact OPPTD at (800) 700-5854. For additional information please see the DTSC fact sheet on "[Jewelry Manufacturing Industry Pollution Prevention Recommendations](#)."

Ion exchange or electrolytic recovery (also called electrowinning) can be used to recover precious metals from wastewater. Although the use of ion exchange and electrolytic recovery to recover metals from wastewater is considered treatment, it may be exempt from permitting requirements if you reuse a significant portion of the wastewater in your jewelry manufacturing processes. Electrolytic recovery equipment is inexpensive, and the value of the precious metals that you

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¥ The term "onsite facility" is summarized for purposes of this fact sheet to mean a hazardous waste facility at which hazardous waste is generated, and which is owned by, leased to, or under the control of the generator of the waste. (Health and Saf. Code, § 25117.12 and Cal. Code Regs., tit.22, § 66260.10.)

† An "offsite facility" means a hazardous waste facility that is not an onsite facility. (Health & Saf. Code, § 25117.11 and Cal. Code Regs., tit. 22, § 66260.10.)

are able to recover from your wastewater will offset the cost of the equipment. Furthermore, by reducing the amount of wastewater that you must treat and dispose, you may reduce your costs and legal responsibility associated with hazardous waste management and disposal.

## Special management for silver-only waste

The treatment of wastewater that is hazardous only because it contains silver does not require a permit or grant of authorization (please see the DTSC fact sheet on "Hazardous Waste Generator Requirements for Jewelry Mart Operators" and the DTSC fact sheet on "Onsite Tiered Permitting: Changes in Regulation of Silver Wastes"). Most of the waste generated in electroplating processes contains other hazardous substances besides silver. It is important for you to know what is in the hazardous waste you generate.

## Disclaimer

This fact sheet is intended to provide guidance for managing hazardous wastewater. This fact sheet covers only the basic management requirements under the Health and Safety Code and the California Code of Regulations. This document does not replace or supersede relevant statutes and regulations. This fact sheet was prepared in January, 2002 and is based on statutes and regulations in effect at that time. Interested parties should always review the most current statutes and regulations.

## References

1. Cal. Code Regs., tit. 22, div. 4.5, ch. 11.
2. Health & Saf. Code, div. 20, ch. 6.5, and Cal. Code Regs., tit. 22, div. 4.5.

**Please direct questions to the DTSC Office nearest you, or call the regional Public and Business Liaisons at (800) 72TOXIC (1-800-728-6942) or visit [www.dtsc.ca.gov](http://www.dtsc.ca.gov)**

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This fact sheet is also available in Armenian, Spanish, and Vietnamese.

Esta información se encuentra disponible también en armenio, español y vietnamita.

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