PROPOSED REGULATIONS – Post-Hearing Changes

PERMIT BY RULE FOR TREATMENT OF
AQUEOUS WASTES CONTAINING CYANIDES R-96-48

Changes in this version reflect post-hearing changes from the text as originally proposed

Key to changes:
Underline: New text
Bold Double-underline: New text resulting from post-hearing changes
Bold Strikeout: Deleted text resulting from post-hearing changes

Amend the California Code of Regulations, title 22, division 4.5, chapter 45, section 67450.11. List of Influent Waste Streams and Treatment Process(es) for Influent Waste Streams Eligible for Treatment Pursuant to Permit by Rule to read as follows:

(a) ...

* * * *

(d)(1) Notwithstanding subsection (a), cyanide-containing aqueous wastes listed in subsection (d)(2) are eligible for treatment by TTUs operating pursuant to section 67450.2 **subsection** (a) or FTUs operating pursuant to section 67450.2 **subsection** (b) provided that:

(A) treatment of the waste is not regulated under the federal Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C., section 6901 et seq.);
(B) the waste is not extremely hazardous pursuant to sections 66261.107 or 66261.110 (except for waste identified in paragraphs ~~(d)~~(2)~~(D)~~**(F)** and ~~(E)~~**(G)** of ~~this~~ subsection **(d))**;
(C) **notwithstanding any other basis for a determination that** the waste to be treated is a hazardous waste ~~only~~**, said waste is hazardous** because it contains cyanide or a combination of cyanide and metals listed in section 66261.24 **subsection** (a)(2);
(D) the treatment is conducted solely for the purpose of treating cyanide-containing waste in accordance with processes listed in subsection (d)(3)~~,~~ or (d)(7); or the purpose of treating spent process solutions by electrowinning pursuant to subsection (d)(6);
(E) the owner or operator of the TTU and/or FTU is in compliance with the requirements of **subsection** (d)(4);
(F) all treatment is conducted in tanks or containers; and
(G) all discharges to air comply with applicable federal, state, and local air pollution control and worker safety statutes and regulations.

(2) Cyanide-containing wastes eligible for treatment pursuant to this subsection are:

(A) ~~A~~aqueous wastes generated by rinsing workpieces and fixtures holding workpieces that were processed in cyanide-containing solutions;

(B) ~~A~~aqueous wastes generated by **reverse osmosis or the** regeneration of demineralizer (ion exchange) columns that were used for recycling of wastewaters at facilities that ~~have eliminated the discharge of wastewaters (other than sanitary discharges.)~~ **maintain zero discharge of wastewaters derived from the treatment of cyanide-containing aqueous waste;**

(C) ~~A~~aqueous wastes generated by rinsing containers, pumps, hoses, and other equipment used to transfer cyanide solutions onsite;

(D) aqueous wastes generated by the following onsite recycling activities:

1. rinsing spent anode bags prior to onsite reuse; or

2. rinsing empty containers prior to onsite reuse.

(E) aqueous wastes generated by onsite laboratories conducting analyses and testing;

(F) ~~**(D)** **S**~~**s**pent process solutions managed in accordance with the requirements of subsection (d)(6); and

(G) ~~**(E)** **S**~~**s**pent process solutions ~~**identified in**~~ managed in accordance with the requirements of subsection (d)(7).

(3) The following processes may be used to treat the wastes described in subsection**s** (d)(2)**(A)-(E)** ~~**subject to conditions specified in this section**~~:

(A) ~~**O**~~**o**xidation by addition of hypochlorite;

(B) ~~**O**~~**o**xidation by addition of peroxide or ozone, with or without the use of ultraviolet light;

(C) ~~**A**~~**a**lkaline chlorination;

(D) ~~**E**~~**e**lectrochemical oxidation~~**; or**~~

(E) ~~**I**~~**i**on exchange~~**.**~~ **; or**

(D) reverse osmosis.

(4) The owners or operators of all sites or facilities subject to ~~**this**~~ subsection **(d)** shall implement the following to reduce waste generation, and minimize or eliminate releases to work areas and the environment:

(A) ~~**Spill and Release Prevention. U**~~**u**se holding racks and**/or** drain boards between all process and rinse tanks to contain plating drag-out, rinse solution drag-out, and return drag-out solutions to process tanks.

(B) ~~**Pollution Prevention.**~~

~~**1. U**~~**u**se countercurrent rinsing to reduce water use and wastewater generation~~**;**~~ **when multiple sequential rinse tanks are used.**

(C) ~~**2. A**~~**a**t a minimum, every four (4) years, review the use of cyanide-containing process baths to determine if a non-cyanide alternative with equivalent results is available as part of:

~~i.~~ **1.** the Source Reduction Evaluation Review and Plan pursuant to Health and Safety Code section 25244.19,
~~ii.~~ **2.** an Environmental Management System, or
~~iii.~~ **3.** an environmental performance evaluation plan**.** ~~; and~~

(D) ~~3. P~~**p**rovide initial and annual training to employees**, who handle cyanide process solutions, cyanide-containing rinse waters, or manage cyanide-containing aqueous waste,** on how to reduce wastes in the production area, including**,** but not limited to**,** procedures to:

~~i.~~ **1.** ~~R~~**r**educe drag-out of plating baths,
~~ii.~~ **2.** ~~M~~**m**inimize contaminants in process baths,
~~iii.~~ **3.** ~~E~~**e**xtend process bath life,
~~iv.~~ **4.** ~~M~~**m**inimize chemical spills and splashes from process and rinse solutions handling practices, and
~~v.~~ **5.** ~~R~~**r**espond to chemical spills to reduce waste and minimize releases from process and rinse solutions handling practices.

(5) Non-aqueous cyanide**-**containing wastes may not be treated under the authority of ~~this~~ subsection **(d)**.

(6) Spent process solutions containing recoverable amounts of metal may be treated by electrowinning in order to recover those metals provided that the owner or operator is in compliance with ~~all other applicable~~**the** requirements of ~~this~~ **sub**section **(d)**. Incidental treatment of cyanide contained in the spent process solution by the electrowinning process is also authorized by this subsection **(d)(6)**. For the purposes of ~~this~~ **sub**section **(d)**, electrowinning means the electrodeposition of metals from spent process solution.

(7) Spent cyanide-containing process solutions may be treated by slow addition to the ~~rinsates~~ **aqueous waste** identified in paragraphs ~~(d)~~(2)(A) and (C) of ~~this~~ subsection **(d)** for the purpose of reducing cyanide processing hazards**,** provided that the owner or operator is in compliance with the following requirements. Solutions resulting from the mixing authorized in ~~this~~ subsection **(d)(7)** shall be further treated by processes listed in subsection (d)(3) in accordance with the other provisions of ~~this~~ subsection **(d)**. Owners or operators managing this cyanide-containing spent process solutions shall ensure the following:

(A) the concentration of cyanide in solutions treated in accordance with subsection (d)(3) shall not exceed 5000 **milligrams per liter or** parts per million (ppm) **of total cyanide**;
(B) residual solids removed by ~~the~~ **any** treatment process **allowed in section 67450.11**, such as filtercakes and sludges from clarifiers, shall be recycled by a facility that recovers metals from the residual materials; and
(C) ~~T~~**t**he following records are maintained at the facility for a minimum of three years from the last date of any activity authorized pursuant to this paragraph of this

subsection and **made**~~**makes it**~~ available to authorized representatives of the Department, the CUPA, or the U.S. EPA upon request:

1. ~~**W**~~**w**ritten approval from the agency operating the POTW receiving the facility's discharges required by ~~**sub**~~section 67450.3 **subsection** (a)(7)(A) or ~~**67450.3**~~(c)(5)((A);
2. ~~**W**~~**w**ritten method **documented in the waste analysis plan required by section 67450.3 subsections (a)(10)(A) and (c)(8)(A)** for ensuring that the concentration of **total** cyanide ~~**entering the treatment system from the rinsewater stream**~~ does not exceed 5000 **milligrams per liter** ~~**ppm**~~ **in the aqueous waste resulting from the mixing authorized in this subsection (d)(7)**; and
3. ~~**D**~~**d**ocumentation that the residual materials generated by the treatment pursuant to paragraph ~~**(d)**~~(7)(B) of this subsection have been sent to a recycling facility for metals recovery.

NOTE: Authority cited: Sections 25150~~, 58004,~~ and 58012, Health and Safety Code. Reference: Sections 25150, 25200, ~~and~~ 25200.2**, 25200.17**, and 25201 Health and Safety Code.

Amend title 27, division 3, subdivision 1, chapter 4, C., Information Description -- Permit by Rule (PBR) Waste and Treatment Process Combinations, to read as follows:

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IV HAZARDOUS WASTE **C. Onsite Tiered Permitting - Waste and Treatment Process Combinations**				
INFORMATION DESCRIPTION - Permit by Rule (PBR) Waste and Treatment Process Combinations. These are all of the eligible waste streams and treatment processes that are available within the tier. NOTE: PBR codes are the same as CESQT, except that items 630-14a through 630-~~17~~20 cannot be treated under CESQT.				
ID	**ELEMENT**	**EDIT CRITERIA / CODE**	**LENGTH**	**TYPE**
630-10d	Used Oil, Mixed Oil, Oily Water, O/W Sludges - Separation by Size, Magnetism, or Density	Y or N	1	AN
630-10e	Used Oil, Mixed Oil, Oily Water, O/W Sludges - Reverse Osmosis	Y or N	1	AN
630-10f	Used Oil, Mixed Oil, Oily Water, O/W Sludges - Biological Process Using Microorganisms	Y or N	1	AN
630-11a	Containers (< 110 Gallons) or Liners - Rinsing with Liquid	Y or N	1	AN
630-11b	Containers (< 110 Gallons) or Liners – Crush, Shred, Grind, or Puncture	Y or N	1	AN
630-12a	Multi-component Resins - Mixing per Manufacturer's Instructions	Y or N	1	AN
630-13	Wastestream & Treatment Technology Combination Certified by DTSC per HSC 25200.1.5	Valid Certified Technology Number	10	AN
630-14a	Cyanide Rinsewater, Cyanide Destruction – Oxidation by Addition of Hypochlorite	Y or N	1	AN
630-14b	Cyanide Rinsewater, Cyanide Destruction – Oxidation by Addition of Peroxide or Ozone, with or without Ultraviolet Light	Y or N	1	AN
630-14c	Cyanide Rinsewater, Cyanide Destruction – Alkaline Chlorination	Y or N	1	AN
630-14d	Cyanide Rinsewater, Cyanide Destruction – Electrochemical Oxidation	Y or N	1	AN

630-14e	Cyanide Rinsewater, Cyanide Removal – Ion Exchange	Y or N	1	AN
630-14f	**Cyanide Rinsewater, Cyanide Removal – Reverse Osmosis**	**Y or N**	**1**	**AN**
630-15a	**Reverse Osmosis Effluent with Cyanide or** Demineralizer Regenerate with Cyanides, Cyanide Destruction - Oxidation by Addition of Hypochlorite	Y or N	1	AN
630-15b	**Reverse Osmosis Effluent with Cyanide or** Demineralizer Regenerate with Cyanides, Cyanide Destruction - Oxidation by Addition of Peroxide or Ozone, with or without Ultraviolet Light	Y or N	1	AN
630-15c	**Reverse Osmosis Effluent with Cyanide or** Demineralizer Regenerate with Cyanides, Cyanide Destruction - Alkaline Chlorination	Y or N	1	AN
630-15d	**Reverse Osmosis Effluent with Cyanide or** Demineralizer Regenerate with Cyanides, Cyanide Destruction - Electrochemical Oxidation	Y or N	1	AN
630-15e	**Reverse Osmosis Effluent with Cyanide or** Demineralizer Regenerate with Cyanides, Cyanide Removal - Ion Exchange	Y or N	1	AN
630-15f	**Reverse Osmosis Effluent with Cyanide or Demineralizer Regenerate with Cyanides, Cyanide Removal – Reverse Osmosis**	**Y or N**	**1**	**AN**
630-16a	Transfer Equipment Rinsate with Cyanides, Cyanide Destruction – Oxidation by Addition of Hypochlorite	Y or N	1	AN
630-16b	Transfer Equipment Rinsate with Cyanides, Cyanide Destruction – Oxidation by Addition of Peroxide or Ozone, with or without Ultraviolet Light	Y or N	1	AN
630-16c	Transfer Equipment Rinsate with Cyanides, Cyanide Destruction – Alkaline Chlorination	Y or N	1	AN
630-16d	Transfer Equipment Rinsate with Cyanides, Cyanide Destruction – Electrochemical Oxidation	Y or N	1	AN
630-16e	Transfer Equipment Rinsate with Cyanides, Cyanide Removal – Ion Exchange	Y or N	1	AN

630-16f	Transfer Equipment Rinsate with Cyanides, Cyanide Removal – Reverse Osmosis	Y or N	1	AN
630-17a	Anode Bag and Empty Container Rinsate with Cyanides, Cyanide Destruction – Oxidation by Addition of Hypochlorite	Y or N	1	AN
630-17b	Anode Bag and Empty Container Rinsate with Cyanides, Cyanide Destruction – Oxidation by Addition of Peroxide or Ozone, with or without Ultraviolet Light	Y or N	1	AN
630-17c	Anode Bag and Empty Container Rinsate with Cyanides, Cyanide Destruction – Alkaline Chlorination	Y or N	1	AN
630-17d	Anode Bag and Empty Container Rinsate with Cyanides, Cyanide Destruction – Electrochemical Oxidation	Y or N	1	AN
630-17e	Anode Bag and Empty Container Rinsate with Cyanides, Cyanide Removal – Ion Exchange	Y or N	1	AN
630-17f	Anode Bag and Empty Container Rinsate with Cyanides, Cyanide Removal – Reverse Osmosis	Y or N	1	AN
630-18a	Onsite Laboratory Aqueous Wastes with Cyanides, Cyanide Destruction – Oxidation by Addition of Hypochlorite	Y or N	1	AN
630-18b	Onsite Laboratory Aqueous Wastes with Cyanides, Cyanide Destruction – Oxidation by Addition of Peroxide or Ozone, with or without Ultraviolet Light	Y or N	1	AN
630-18c	Onsite Laboratory Aqueous Wastes with Cyanides, Cyanide Destruction – Alkaline Chlorination	Y or N	1	AN
630-18d	Onsite Laboratory Aqueous Wastes with Cyanides, Cyanide Destruction – Electrochemical Oxidation	Y or N	1	AN
630-18e	Onsite Laboratory Aqueous Wastes with Cyanides, Cyanide Removal – Ion Exchange	Y or N	1	AN

630-18f	**Onsite Laboratory Aqueous Wastes with Cyanides, Cyanide Removal – Reverse Osmosis**	**Y or N**	**1**	**AN**
630-~~18~~19	Electrowinning Process Solutions with Cyanides, Metal Recovery	Y or N	1	AN
630-~~17~~20a	Process solutions with Cyanides added slowly to rinse tanks, Cyanide Destruction – Oxidation by Addition of Hypochlorite	Y or N	1	AN
630-~~17~~20b	Process solutions with Cyanides added slowly to rinse tanks, Cyanide Destruction – Oxidation by Addition of Peroxide or Ozone, with or without Ultraviolet Light	Y or N	1	AN
630-~~17~~20c	Process solutions with Cyanides added slowly to rinse tanks, Cyanide Destruction – Alkaline Chlorination	Y or N	1	AN
630-~~17~~20d	Process solutions with Cyanides added slowly to rinse tanks, Cyanide Destruction – Electrochemical Oxidation	Y or N	1	AN
630-~~17~~20e	Process solutions with Cyanides added slowly to rinse tanks, Cyanide Removal – Ion Exchange	Y or N	1	AN
630-20f	**Process solutions with Cyanides added slowly to rinse tanks, Cyanide Removal – Reverse Osmosis**	**Y or N**	**1**	**AN**

Amend title 27, division 3, subdivision 1, chapter 6, "Unified Program Consolidated Form – Onsite Tiered Permitting, Permit by Rule Page, Waste and Treatment Process Combinations," by adding the following items to the end of the existing form:

* * * *

14.	**Aqueous wastes generated by rinsing products and fixtures holding products that were processed in cyanide-containing solutions may be treated by the following technologies:**
Θ	Oxidation by addition of hypochlorite
Θ	Oxidation by addition of peroxide or ozone, with or without the use of ultraviolet light
Θ	Alkaline chlorination
Θ	Electrochemical oxidation
Θ	**Ion exchange**
Θ	**Reverse osmosis**
15.	**Aqueous wastes generated by reverse osmosis or the regeneration of demineralizer (ion exchange) columns that were used for recycling of wastewaters at facilities that ~~have eliminated the discharge of wastewaters (other than sanitary discharges)~~ maintain zero discharge of wastewaters derived from the treatment of cyanide-containing aqueous waste may be treated by the following technologies:**
Θ	Oxidation by addition of hypochlorite
Θ	Oxidation by addition of peroxide or ozone, with or without the use of ultraviolet light
Θ	Alkaline chlorination
Θ	Electrochemical oxidation
Θ	**Ion exchange**
Θ	**Reverse osmosis**
16.	**Rinsate from rinsing equipment used to transfer aqueous solutions containing cyanides such as containers, pumps, and hoses may be treated by the following technologies:**
Θ	Oxidation by addition of hypochlorite
Θ	Oxidation by addition of peroxide or ozone, with or without the use of ultraviolet light
Θ	Alkaline chlorination
Θ	Electrochemical oxidation
Θ	**Ion exchange**
Θ	**Reverse osmosis**
17.	**Aqueous wastes generated by the following onsite recycling activities 1) Rinsing spent anode bags prior to onsite reuse; or 2) Rinsing empty containers prior to onsite reuse may be treated by the following technologies:**
Θ	**Oxidation by addition of hypochlorite**
Θ	**Oxidation by addition of peroxide or ozone, with or without the use of ultraviolet light**
Θ	**Alkaline chlorination**
Θ	**Electrochemical oxidation**
Θ	**Ion exchange**
Θ	**Reverse osmosis**

18.	**Aqueous wastes generated by onsite laboratories conducting analyses and testing may be treated by the following technologies:**
Θ	**Oxidation by addition of hypochlorite**
Θ	**Oxidation by addition of peroxide or ozone, with or without the use of ultraviolet light**
Θ	**Alkaline chlorination**
Θ	**Electrochemical oxidation**
Θ	**Ion exchange**
Θ	**Reverse osmosis**
~~18~~19.	Process solutions containing cyanides with recoverable amounts of metal may be treated by the following technology:
Θ	Electrowinning to recover metals prior to further treatment, including destruction of incidental amounts of cyanide by electrochemical oxidation resulting from the electrowinning process
~~17.~~20	**Process solutions containing cyanides added slowly to a rinse tank at a level that never exceeds 5000 milligrams per liter ~~ppm~~ cyanide in the rinse tank may be treated by the following technologies:**
Θ	Oxidation by addition of hypochlorite
Θ	Oxidation by addition of peroxide or ozone, with or without the use of ultraviolet light
Θ	Alkaline chlorination
Θ	Electrochemical oxidation
Θ	**Ion exchange**
Θ	**Reverse osmosis**

The Waste and Treatment Process Combinations pages list those waste and treatment combinations certified by DTSC pursuant to HSC §25200.1.5 for authorization under CE, CA, and PBR tiers. Each page is specific to a tier, with each tier specific page listing the wastes and treatment processes eligible under that tier. Note that some of the categories have volume or concentration restrictions that must be met in order to qualify for that tier. Additionally, some of the wastes refer to 22 CCR and others to the Health and Safety Code.

Complete one Waste and Treatment Process Combinations page for each unit, except CE-CL units.

(Note: the numbering of the instructions follows the data element numbers that are on the UPCF pages. These data element numbers are used for electronic submission and are the same as the numbering used in 27 CCR, ~~**Appendix C, the Business Section of the Unified Program Data Dictionary**~~ **division 3, subdivision 1, chapters 1-5**.)

Please number all pages of your submittal. This helps your CUPA or local agency identify whether the submittal is complete and if any pages are separated.

606. UNIT ID NUMBER - Enter the unit ID number (same as item 606 from the Onsite Hazardous Waste Treatment Notification - Unit page).

1. FACILITY ID NUMBER - Leave this blank. This number is assigned by the CUPA. This is the unique number which identifies your facility.

627. WASTE AND TREATMENT PROCESS COMBINATIONS - CESQT 628. WASTE AND TREATMENT PROCESS COMBINATIONS - CESW 629. WASTE AND TREATMENT PROCESS COMBINATIONS - CA 630. WASTE AND TREATMENT PROCESS COMBINATIONS - PBR 631. WASTE AND TREATMENT PROCESS COMBINATIONS - CEL	Use the correct page for the unit. Check the waste and treatment process(es) that pertain to the unit. If the process is a technology certified by DTSC, please enter the Certified Technology Number (Cert. #). Certified technologies appropriate for authorization, and the eligible tiers, are listed below.

Note that reactive and extremely hazardous wastes are not allowed to be treated under any of the onsite treatment tiers, except for certain wastes under Conditionally Exempt - Specified Wastestreams **and Permit by Rule**.

CERTIFIED TECHNOLOGIES

DTSC is authorized to certify hazardous waste technologies. Appropriate certified technologies may be eligible for CE, CA or PBR onsite treatment tiers. As of April 1, 1999, there is one certified technology for these tiers. The certification is for aldehyde treatment processes and is eligible for the CESW tier. The approved technology is:

Neutralex	SCIGEN
Cert. #. 97-01-0024	333 East Gardena Blvd. Gardena, CA 90248
Effective Date:	June 29, 1997 (expires June 29, 2000)
Description:	Batch treatment for 10 percent Formalin generated by medical, educational, and laboratory facilities. Chemically treats in a provided 8 liter vessel. After testing, allows for disposal to sanitary sewer.
Tier:	Authorized for the CESW tier.

A copy of published Certification Statements and additional updates may be obtained by contacting DTSC at (916) 322-3670 or from the Cal/EPA on-line Bulletin Board via modem at (916) 322-5041.