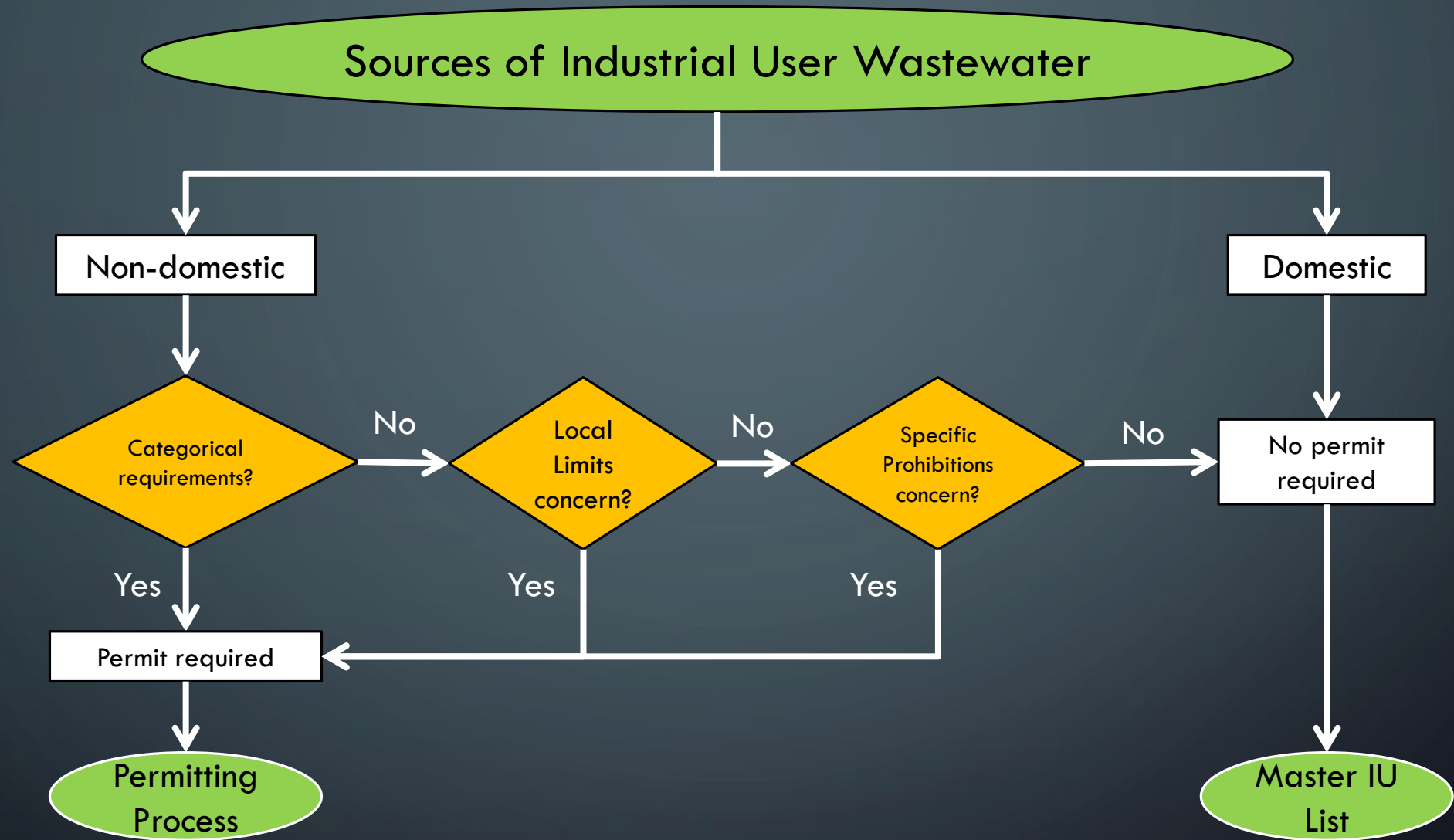
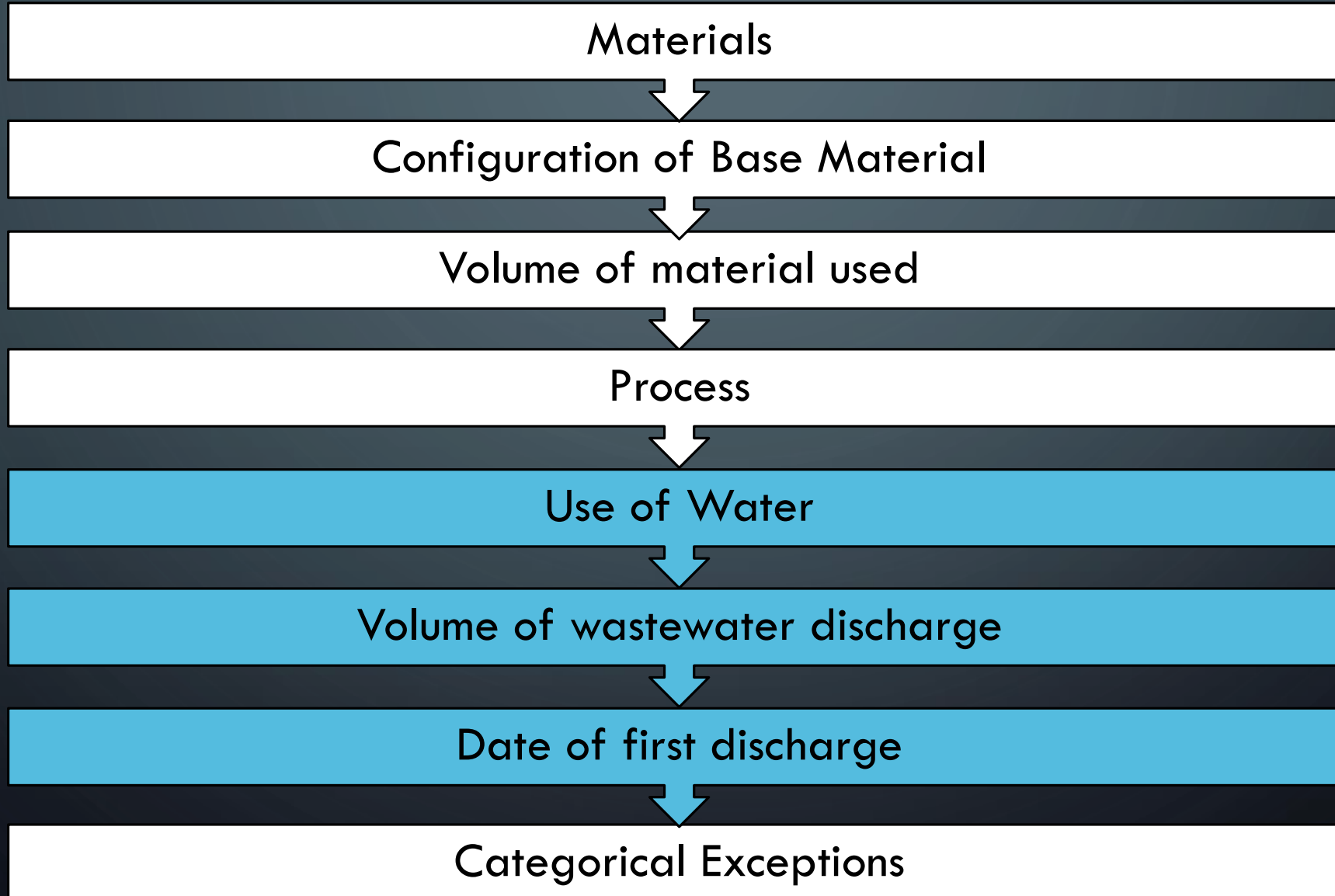




CATEGORICAL INDUSTRIAL USER CLASSIFICATIONS



INFORMATION THAT NEEDS TO BE COLLECTED TO DETERMINE IF CATEGORICAL AND IF SO WHAT SUBPART



Materials

- Metal (Aluminum, Copper, Steel)
- Pharmaceutical Active Ingredients
- Silicon

Configuration of Base Material

- Rod, wire, and coil
- Bar, billet, and bloom
- Strip, Sheet, and plate
- Pipe, tube, and other products

Volume of material

- Production Based Limits

Process

- Acid Etching
- Cleaning
- Mixing/Compounding
- Chemical Synthesis

Use of Water

- Air Scrubber
- Cleaning
- Rinsing
- Contact Cooling Water

Volume of discharge

- Electroplating limits
- Production Based Limits

Date of first discharge

- Existing Source
- New Source

Exceptions

- Pharmaceutical Research vs Production
- Aluminum forming draw less than 1 million pounds per year

Materials



40 CFR Part	Category	New Source Date for Indirect Dischargers	
467	Aluminum Forming	Subpart A-F	Subpart A-B: Rolling Subpart C: Extrusion Subpart D: Forging Subpart E-F: Drawing
421	Nonferrous Metals Manufacturing	Subparts B-C	Subpart B: Producing aluminum from alumina Subpart C: Remelting of aluminum scrap
464	Metal Molding and Casting	Subparts A	Subpart A: Aluminum Casting

SAFETY DATA SHEETS (SDS)

3

COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Cas #	Percentage	Chemical Name
1333-82-0	5-10%	Chromium (VI) trioxide, anhydrous
7429-90-5	30-50%	Aluminum (fume or dust)
14808-60-7	0-10%	Silica, crystalline
7631-86-9	1-2%	Silica, amorphous
1344-28-1	2-3%	Aluminum oxide (Al ₂ O ₃)
7664-38-2	10-35%	Phosphoric acid
	<10%	Phosphoric acid, reaction products with aluminum hydroxide and chromium oxide.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as significantly hazardous to health or the environment and hence require reporting in this section.

MATERIAL CONFIGURATION

40 CFR 420 Iron & Steel Manufacturing



Sub part	Applicability	
H	Salt Bath Descaling	(a) Oxidizing
		(1) Batch, sheet and plate (2) Batch, rod and wire (3) Batch, pipe and tube (4) Continuous
		(b) Reducing
		(1) Batch (2) Continuous
I	Acid Pickling	(a) Sulfuric acid pickling
		(1) Rod, wire, coil (2) Bar, billet, and bloom (3) Strip, sheet, and plate (4) Pipe, tube, other products (5) Fume scrubber
		(b) Hydrochloric acid pickling
		(c) Combination acid pickling

VOLUME OF MATERIAL

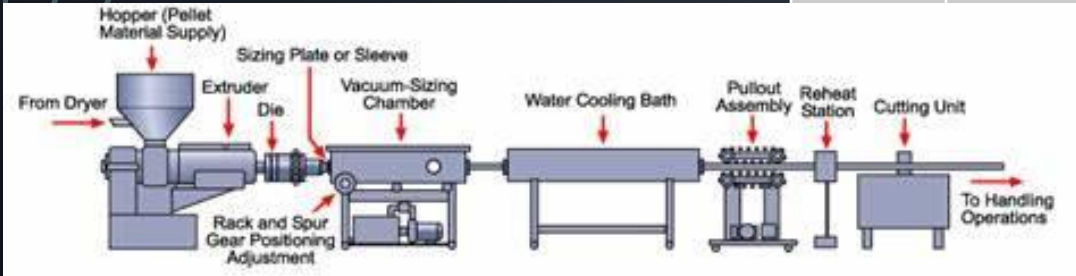


Subpart	Applicability	40 CFR 465 Coil Coating				
A	Steel Basis Material			Maximum for any 1 day	Average monthly	
				Mg/m2 (pounds per 1 million ft2) of area processed		
		Chromium	0.12	0.024	0.047	0.01
		Cyanide	0.063	0.013	0.025	0.005
		Zinc	0.33	0.066	0.14	0.027
B	Galvanized Basis Material			Maximum for any 1 day	Average monthly	
				Mg/m2 (pounds per 1 million ft2) of area processed		
		Chromium	0.13	0.027	0.052	0.011
		Copper	0.44	0.090	0.21	0.043
		Cyanide	0.07	0.015	0.028	0.006
		Zinc	0.35	0.072	0.15	0.030

Process



Sub part	Applicability	
A	Rolling with Neat Oils	<ul style="list-style-type: none"> • Core with an annealing furnace scrubber • Core without an annealing furnace scrubber • Continuous sheet casting lubricant • Solution heat treatment contact cooling water • Cleaning or etching bath
B	Rolling with emulsions	<ul style="list-style-type: none"> • Core • Direct chill casting contact cooling water • Solution heat treatment contact cooling water • Cleaning or etching bath • Cleaning or etching rinse • Cleaning or etching scrubber liquor
C	Extrusion	<ul style="list-style-type: none"> • Core • Extrusion press leakage • Direct chill casting contact cooling water • Press heat treatment contact cooling water • Solution heat treatment contact cooling water • Cleaning or etching bath • Cleaning or etching rinse • Cleaning or etching scrubber liquor





Standard Industrial Classification (SIC) North American Industry Classification System (NAICS)

LOCAL LIMITS GUIDANCE APPENDICES

- Appendix B - Industrial Categories with Pretreatment Standards
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INDUSTRIAL CATEGORIES

Category (SIC Codes)* [NAICS Codes]**	40 CFR Part (Sub- parts)	Type of Standard***	Overview of Pretreatment Standards
Aluminum Forming (3353, 3354, 3355, 3357, 3363) [331315, 331316, 331319, 331521]	467(A-F)	PSES PSNS	Limits are production-based, daily maximums and monthly averages. Subpart C prohibits discharges from certain operations.
Battery Manufacturing (3691, 3692) [335911, 335912]	461(A-G)	PSES PSNS	Limits are production-based, daily maximums and monthly averages. No discharge is allowed from any process not specifically identified in the regulations.
Carbon Black Manufacturing (2895) [325182]	458 (A-D)	PSNS	Limits are for Oil & Grease only (no limit duration specified).
Centralized Waste Treatment (4953) [562211, 562219]	437 (A-D)	PSES PSNS	Limits are concentration-based, daily maximums and monthly averages.
Coil Coating (3411, 3479, 3492) [332431, 332812]	465 (A-D)	PSES PSNS	Limits are production-based, daily maximums and monthly averages.
Commercial Hazardous Waste Combustors (4953, 2819, 2869, 3241, 1422, 1429, 1459) [562213, 212312, 325188, 325199, 327310]	444 (A)	PSES PSNS	Limits are concentration-based daily maximums or maximum monthly averages.
Concentrated Animal Feeding Operations (0211, 0213, 0214, 0241, 0251, 0252, 0253, 0254, 0259, 0272) [112112, 11221, 11241, 11242, 112111, 11212, 11232, 11231, 11233, 11234, 11239, 11292]	412 (B)	PSNS	Discharge of process wastewater is prohibited, except when there is an overflow resulting from a chronic or catastrophic rainfall event.
Copper Forming (3351, 3357, 3463) [331421, 331422, 332112]	468 (A)	PSES PSNS	Limits are production-based, daily maximums and monthly averages.
Electrical and Electronic Components (3671, 3674, 3679) [334411, 334413, 334419]	469 (A-D)	PSES PSNS	Limits are concentration-based, daily maximums and 30-day averages or monthly averages (varies per subpart and pollutant parameter). Certification is allowed in lieu of monitoring for certain pollutants when a management plan is approved and implemented.

W P I R T H E T R E A T M E N T S T A N D A R D S

INDUSTRIAL CATEGORIES

Category (SIC Codes)* [NAICS Codes]**	40 CFR Part (Sub-parts)	Type of Standard***	Overview of Pretreatment Standards
Electroplating (3471, 3672) [332813, 334412]	413 (A-B, D-H)	PSES	Limits are concentration-based (or alternative mass-based equivalents), daily maximums and four consecutive monitoring days averages. Two sets of limits exist, depending on if facility discharges more or less than 10,000 gallons per day of process wastewater. Certification is allowed in lieu of monitoring for certain pollutants when a management plan is approved and implemented.
Fertilizer Manufacturing (2873, 2874, 2875) [325311, 325312, 325314]	418 (A-G)	PSNS	Limits may specify zero discharge of wastewater pollutants (Subpart A), production-based daily maximums and 30-day averages (Subparts B-E) or concentration-based (Subparts F-G) with no limit duration specified.
Glass Manufacturing (3211, 3221, 3296) [327211, 327212, 327993]	426 (H, K-M)	PSNS	Limits are either concentration- or production-based, daily maximums and monthly averages.
Grain Mills (2041, 2043, 2044, 2045, 2046, 2047) [311111, 311211, 311212, 311213, 311221, 311230]	406 (A)	PSNS	Discharge of process wastewater is prohibited at a flow rate or mass loading rate which is excessive over any time period during the peak load at a POTW.
Ink Formulating (2893) [325910]	447 (A)	PSNS	Regulations specify no discharge of process wastewater pollutants to the POTW.
Inorganic Chemicals Manufacturing (2812, 2813, 2816, 2819) [325120, 325131, 325181, 325188]	415 (A-BO)	PSES PSNS	Limits vary for each subpart with a majority of the limits concentration-based, daily maximums and 30-day averages, or may specify no discharge of wastewater pollutants. Numerous subparts have no pretreatment standards.
Iron and Steel Manufacturing (3312, 3315, 3316, 3317, 3479) [331111, 331210, 331221, 331222, 332812]	420 (A-F, H-J, L, M)	PSES PSNS	Limits are production-based, daily maximums and 30 day averages, or may specify no discharge of wastewater pollutants.
Leather Tanning and Finishing (3111) [316110]	425 (A-I)	PSES PSNS	Limits are concentration-based, daily maximums and monthly averages. In certain instances, production volume dictates applicable pretreatment standards.
Metal Finishing (Industry groups: 34, 35, 36, 37, 38) [Industry Subsectors: 332, 333, 334, 336]	433 (A)	PSES PSNS	Limits are concentration-based, daily maximums and monthly averages. Certification is allowed for certain pollutants where a management plan is approved and implemented.
Metal Molding and Casting (3321, 3322, 3324, 3325, 3365, 3366, 3369) [331511, 331512, 331513, 331524, 331525, 331528]	464 (A-D)	PSES PSNS	Limits are primarily production-based, daily maximums and monthly averages. Discharges from certain processes are prohibited (Subparts A-C).
Nonferrous Metals Forming and Metal Powders (3356, 3357, 3363, 3497, 3499) [331491, 331422, 331521, 332117, 332999]	471 (A-J)	PSES PSNS	Limits are production-based, daily maximums and monthly averages. In some instances, the regulations prohibit the discharge of wastewater pollutants.

W P I R T H E T R E A T M E N T S T A N D A R D S

INDUSTRIAL CATEGORIES

Category (SIC Codes)* [NAICS Codes]**	40 CFR Part (Sub- parts)	Type of Standard***	Overview of Pretreatment Standards
Nonferrous Metals Manufacturing (2819, 3331, 3334, 3339, 3341) [331311, 331312, 331314, 331411, 331419, 331423, 331492]	421 (B-AE)	PSES PSNS	Limits are production-based, daily maximums and monthly averages. The majority of the Subparts have both existing and new source limits, with others having solely new source requirements. In some instances, the regulations prohibit the discharge of wastewater pollutants.
Oil and Gas Extraction (1311) [211111]	435 (D)	PSES PSNS	Regulations specify no discharge of process wastewater (drilling fluids, deck drainage, etc.) pollutants to the POTW.
Organic Chemicals, Plastics, and Synthetic Fibers (2821, 2823, 2824, 2865, 2869) [325211, 325221, 325222, 32511, 325132, 325192, 325188]]	414 (B-H, K)	PSES PSNS	Limits are mass-based (concentration-based standards multiplied by process flow), daily maximums and monthly averages. Standards for metals and cyanide apply only to metal- or cyanide-bearing wastestreams.
Paint Formulating (2851) [325510]	446 (A)	PSNS	Regulations specify no discharge of process wastewater pollutants to the POTW.
Paving and Roofing Materials (Tars and Asphalt) (2951, 2952, 3996) [324121, 324122, 326192]	443 (A-D)	PSNS	Limits are for Oil & Grease only (no limit duration specified).
Pesticide Chemicals (2879) [325320]	455 (A, C, E)	PSES PSNS	Limits are mass-based (concentration-based standards multiplied by process flow), daily maximums and monthly averages. Subpart C specifies no discharge of process wastewater pollutants but provides for pollution prevention alternatives. Subpart E specifies no discharge of process wastewater pollutants.
Petroleum Refining (2911) [324110]	419 (A-E)	PSES PSNS	Limits are concentration-based (or mass-based equivalent), daily maximums.
Pharmaceutical Manufacturing (2833, 2834) [325411, 325412]	439 (A-D)	PSES PSNS	Limits are concentration-based, daily maximums and monthly averages. Subpart A and C facilities may certify they do not use or generate cyanide in lieu of performing monitoring to demonstrate compliance.
Porcelain Enameling (3431, 3469, 3479, 3631, 3632, 3633, 3639) [332116, 332812, 332998, 335221, 335222, 335224, 335228]	466 (A-D)	PSES PSNS	Limits are concentration-based (or alternative production-based), daily maximums and monthly averages. Subpart B prohibits discharges certain operations.
Pulp, Paper, and Paperboard (2611, 2621, 2631) [322110, 322121, 322122, 322130]	430 (A-G, I-L)	PSES PSNS	Limits are production-based or concentration-based (or alternative production-based) daily maximums and monthly averages. These facilities may certify they do not use certain compounds in lieu of performing monitoring to demonstrate compliance. Facilities subject to Subparts B and E must also implement Best Management Practices as identified.
Rubber Manufacturing (2822) [325212]	428 (E-K)	PSNS	Limits are concentration- or production-based, daily maximums and monthly averages.

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Category (SIC Codes)* [NAICS Codes]**	40 CFR Part (Sub- parts)	Type of Standard***	Overview of Pretreatment Standards
Soap and Detergent Manufacturing (2841) [325611]	417 (O-R)	PSNS	Regulations specify no discharge of process wastewater pollutants to the POTW.
Steam Electric Power Generating (4911) [221112]	423	PSES PSNS	Limits are either concentration-based, daily maximums, or "maximums for any time," or compliance can be demonstrated through engineering calculations. In some instances, the regulations prohibit the discharge of wastewater pollutants.
Timber Products Processing (2421, 2435, 2436, 2491, 2493, 2499) [321114, 321219, 321211, 321212]	429 (F-H)	PSES PSNS	All PSNS (and PSES for Subpart F) prohibit the discharge of wastewater pollutants. PSES for Subparts G and H are concentration-based, daily maximums (with production-based alternatives).
Transportation Equipment Cleaning (4491, 4499, 4741, 7699) [484230, 488320, 488390, 488210]	442 (A-C)	PSES PSNS	Limits are concentration-based daily maximums. Subpart A and B allow for a pollutant as an alternative to achieving PSES or PSNS.

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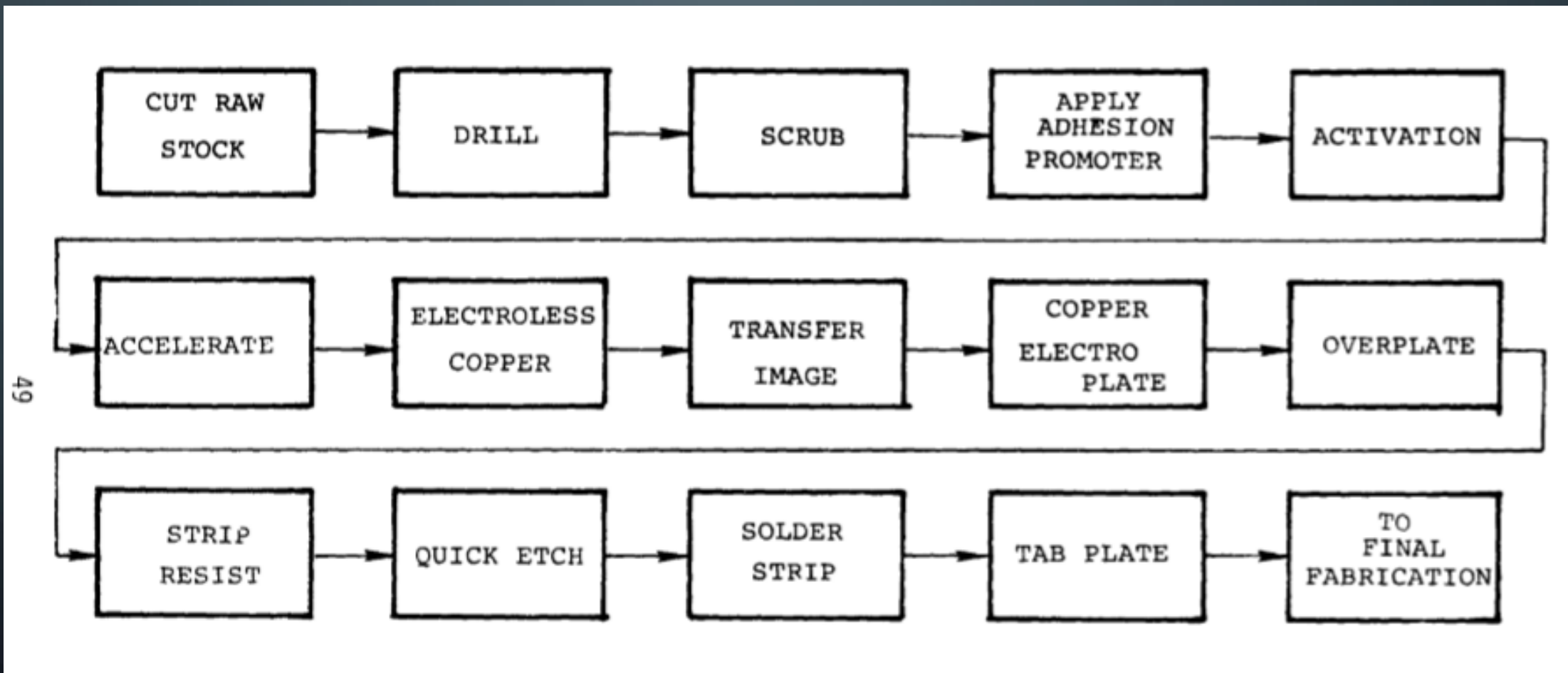
Category (SIC Codes)* [NAICS Codes]**	40 CFR Part (Sub- parts)
Transportation Equipment Cleaning (4491, 4499, 4741, 7699) [484230, 488320, 488390, 488210]	442 (A-C)

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PROCESS FLOW DIAGRAM

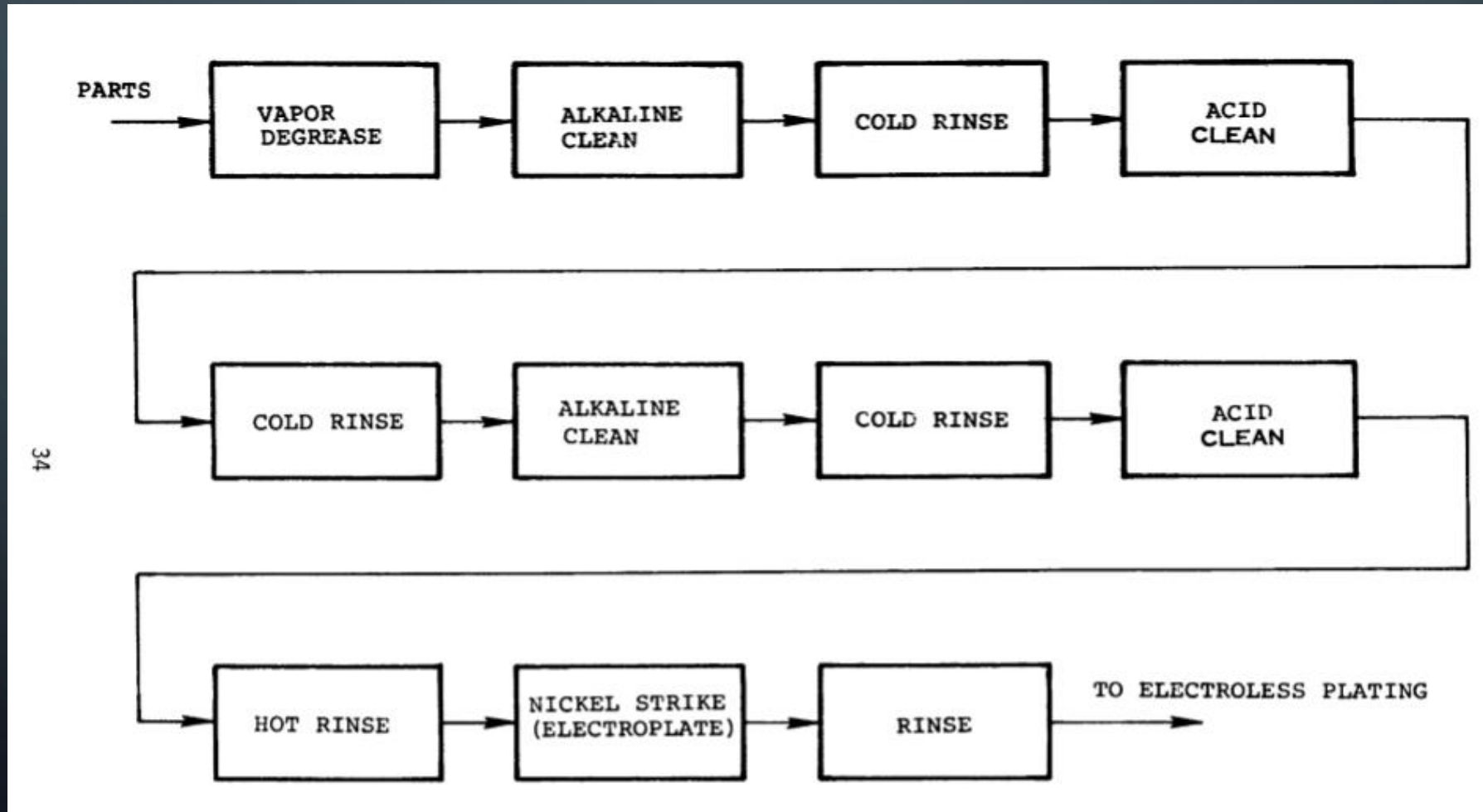


USE OF WATER

- Quench
- Rinse
- Contact Cooling
- Noncontact cooling
- Cast Cooling
- Air Scrubbers



PROCESS FLOW DIAGRAM



VOLUME OF DISCHARGE



Subpart	Applicability	413 Electroplating		
A	Common Metals facilities discharging less than 38,000 liters per day	Pollutant	Maximum for any 1 day	Average 4 consecutive days
		CN, A	5.0	2.7
		Lead	0.6	0.4
		Cadmium	1.2	0.7
		TTO	4.57	N/A
A	Common Metals facilities discharging more than 38,000 liters per day	Pollutant	Maximum for any 1 day	Average 4 consecutive days
		CN, T	1.9	1.0
		Copper	4.5	2.7
		Nickel	4.1	2.6
		Chromium	7.0	4.0
		Zinc	4.2	2.6
		Lead	0.6	0.4
		Cadmium	1.2	0.7
		Total Metals	10.5	6.8
		TTO	2.13	N/A

NEW SOURCE DATES

NPDES PERMIT WRITERS' MANUAL: APPENDIX D

- New Source Dates by Effluent Guideline Category

NEW SOURCE DATES

40 CFR Part	Category	New source date for direct dischargers		New source date for indirect dischargers	
467	Aluminum Forming	Subparts A-F:	10/24/83	Subparts A-F:	11/22/82
427	Asbestos Manufacturing	Subparts A-K:	10/30/73 ²	Not Applicable	
461	Battery Manufacturing	Subparts A-G:	03/09/84	Subparts A-G	11/10/82
407	Canned and Preserved Fruits and Vegetables Processing	Subparts A-H:	03/21/74	Not Applicable	
408	Canned and Preserved Seafood Processing	Subparts A-J, N: Subparts O-AG:	06/26/74 12/01/75	Not Applicable	
458	Carbon Black Manufacturing	Subparts A-D:	01/09/78	Subparts A-D:	05/18/76
411	Cement Manufacturing	Subparts A-C:	02/20/74	Not Applicable	
437	Centralized Waste Treatment (CWT)	Subparts A-D:	01/05/01	Subparts A-D:	01/13/99
434	Coal Mining	Subparts B-E, H: Subpart G:	05/04/84 ³ 02/22/02 ⁴	Not Applicable	
465	Coil Coating	Subparts A-C: Subpart D:	12/01/82 11/17/83	Subparts A-C: Subpart D:	01/12/81 02/10/83
412	Concentrated Animal Feeding Operations (CAFO)	Subparts A-B: Subparts C-D:	02/14/74 04/14/03 ⁵	Subpart B:	09/07/73
451	Concentrated Aquatic Animal Production	Subparts A-B:	09/07/04	Not Applicable	
468	Copper Forming	Subpart A:	08/15/83	Subpart A:	11/12/82
405	Dairy Products Processing	Subparts A-L:	05/28/74	Not Applicable	
469	Electrical and Electronic Components	Subparts A-B: Subparts C-D:	04/08/83 12/14/83	Subparts A-B: Subparts C-D:	08/24/82 03/09/83
413	Electroplating	Not Applicable ⁶		See Metal Finishing ⁷	
457	Explosives Manufacturing	Not Applicable		Not Applicable	
424	Ferroalloy Manufacturing	Subparts A-C:	02/22/74	Not Applicable	
418	Fertilizer Manufacturing	Subparts A-D: Subpart E: Subparts F-G:	04/08/74 01/16/76 10/07/74 ⁸	Subparts A-D ⁹ : Subpart E: Subparts F-G:	12/07/73 01/16/76 10/07/74
426	Glass Manufacturing	Subpart A: Subparts B-D: Subparts E-G: Subparts H, J-M:	01/22/74 02/14/74 02/14/74 01/16/75	Subparts H, K-M:	08/21/74
406	Grain Mills	Subparts A-J:	12/04/73 ¹⁰	Subpart A:	12/04/73
454	Gum and Wood Chemicals	Not Applicable		Not Applicable	
460	Hospitals	Not Applicable		Not Applicable	
447	Ink Formulating	Subpart A:	07/28/75	Subpart A:	02/26/75

NEW SOURCE DATES

40 CFR Part	Category	New source date for direct dischargers		New source date for indirect dischargers	
415	Inorganic Chemicals	Subparts B-F, H, K-N, P, Q, T, V, W, AJ [CuSO ₄ manufacturing], AH, AP, AU [NiSO ₄ manufacturing], BB: 06/29/82 Subparts AJ [except CuSO ₄ manufacturing], AU [except NiSO ₄ manufacturing], BL - BO: 08/22/84		Subparts B-F, H, K-N, P, Q, V, AH, AJ [CuSO ₄ manufacturing], AP, AU [NiSO ₄ manufacturing], BB: 07/24/80 Subparts T, AA, AC, AE, AI, AJ [except CuSO ₄ manufacturing], AL, AN, AQ, AR, AU [except NiSO ₄ manufacturing], AX, BC, BH, BK-BO: 10/25/83	
420	Iron and Steel Manufacturing	Subparts A-B: 11/18/02 ¹¹ Subpart C: 05/27/82 Subpart D, Semi-Wet: 10/31/02 Subpart D, Other: 05/27/82 Subparts E-L: 05/27/82 Subpart M: 10/31/02		Subparts A-B: 11/18/02 ¹² Subpart C: 01/07/81 Subpart D, Semi-Wet: 12/27/00 Subpart D, Other: 01/07/81 Subparts E-F, H-J, L: 01/07/81 Subpart M: 12/27/00	
445	Landfills	Subparts A-B: 02/02/00		Not Applicable	
425	Leather Tanning and Finishing	Subparts A, B, D-I: 11/23/82 Subpart C: 04/04/88		Subpart A, B, D-I: 07/02/79 Subpart C: 01/21/87	
432	Meat and Poultry Products	Subparts A-D, Small Facilities: 02/28/74 ¹³ Subparts A-D, Other: 09/22/04 Subparts E-I, Small Facilities: 01/03/75 ¹⁴ Subparts E-I, Other: 09/22/04 Subpart J-L: 09/22/04		Not Applicable	
433	Metal Finishing	Subpart A: 07/15/83		Subpart A: 08/31/82	
464	Metal Molding and Casting	Subparts A-D: 11/13/85		Subparts A-D: 11/15/82	
438	Metal Products and Machinery	Subpart A: 06/12/03 ¹⁵		Not Applicable	
436	Mineral Mining and Processing	Not Applicable		Not Applicable	
471	Nonferrous Metals Forming and Metal Powders	Subparts A-J: 09/06/85		Subparts A-J: 03/05/84	
421	Nonferrous Metal Manufacturing	Subparts B-I (except molybdenum acid plants), K-M: 03/08/84 Subparts N-AE, molybdenum acid plants in subpart I: 10/04/85 Subpart J: 02/04/88		Subparts B-I (except molybdenum acid plants), K-M: 02/17/83 Subparts N-AE, molybdenum acid plants in subpart I: 06/27/84 Subpart J: 01/22/87	
435	Oil and Gas Extraction ¹⁵	Subparts C (Onshore), D (Coastal), and E (Agriculture & Wildlife): 03/04/93 Subparts A and D (Synthetic-Based Drilling Fluids): 02/05/01		Subpart D: 02/17/95	
440	Ore Mining and Dressing	Subparts A-F, J, M: 12/03/82		Not Applicable	

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40 CFR Part	Category	New source date for direct dischargers		New source date for indirect dischargers	
414	Organic Chemicals, Plastics, and Synthetic Fibers	Subparts B-H:	11/19/87	Subparts B-H:	03/21/83
446	Paint Formulating	Subpart A:	07/28/75	Subpart A:	02/26/75
443	Paving and Roofing Materials (Tars and Asphalt)	Subparts A-D:	07/28/75	Subparts A-D:	01/10/75
455	Pesticide Chemicals	Subparts A-B: Subparts C, E:	10/12/93 11/20/96	Subparts A-B: Subparts C, E:	04/10/92 04/14/94
419	Petroleum Refining	Subparts A-E:	10/18/82	Subparts A-E:	12/21/79
439	Pharmaceutical Manufacturing	Subparts A-D:	11/20/98 ¹⁷	Subparts A-D:	05/02/95
422	Phosphate Manufacturing	Subparts D-F:	06/23/76	Not Applicable	
459	Photographic	Not Applicable		Not Applicable	
463	Plastics Molding and Forming	Subparts A-C:	12/17/84	Not Applicable	
466	Porcelain Enameling	Subparts A-D:	11/24/82	Subparts A-D:	01/27/81
430	Pulp, Paper, and Paperboard	Subparts B, E: Subparts A, C, D, F, G, I-L:	06/15/98 ¹⁸ 11/18/82	Subparts B, E: Subparts A, C, D, F, G, I-L:	12/17/93 01/06/81
428	Rubber Manufacturing	Subparts A-D: Subparts E-J:	02/21/74 01/10/75	Subparts E-K:	08/23/74
417	Soap and Detergents Manufacturing	Subparts A-S:	4/12/74	Subpart Q: Subparts O, P, R:	12/26/73 02/20/75
423	Steam Electric Power Generation		11/19/82 ¹⁹		10/14/80
409	Sugar Processing	Subpart A: Subparts B, C:	1/31/74 12/07/73 ²⁰	Not Applicable	

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40 CFR Part	Category	New Source Date for Direct Dischargers		New Source Date for Indirect Dischargers
410	Textile Mills	Subparts A-I:	9/2/82	Not Applicable
429	Timber Products Processing	Subparts A-P:	1/26/81	Subparts F-H: 10/31/79
442	Transportation Equipment Cleaning	Subparts A-D:	8/28/00	Subparts A-C: 6/25/98
444	Waste Combustors	Subpart A:	2/10/00	Subpart A: 2/6/98

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40 CFR PART	Category	Applicable Subparts	New Source Date
406	Grain Mills	A	12/4/1973
412	Concentrated Animal Feeding Operations	B	9/7/1973
413	Electroplating	A-H	Prior to 8/31/1982
414	Organic Chemicals, Plastics, and Synthetic	B-H	3/21/1983
415	Inorganic Chemicals	B-F, H, K-N, P, Q V, AH, AJ, AP, AU, BB T, AA, AC, AE, AI, AJ, AL, AN, AQ, AR, AU, AX, BC, BH, BK- BO	7/24/1980 10/25/1983
417	Soap and Detergents	Q O, P, R	12/26/1973 2/20/1975

35 have indirect discharge categorical standards

EXCEPTIONS

- **40 CFR 467.01**

(b) This part applies to any aluminum forming facility, except for plants identified under paragraph (c) of this section, which discharges or may discharge pollutants to waters of the United States or which introduces or may introduce pollutants into a publicly owned treatment works.

(c) This part is applicable to indirect discharging aluminum forming plants that extrude less than 3 million pounds of product per year and draw, with emulsions or soaps, less than 1 million pounds per year.

EPA MANUALS

Development Document for Existing Source Pretreatment Standards for the Electroplating Point Source Category

Final

United States Environmental Protection Agency
Effluent Guidelines Division
WH-552
Washington DC 20460
EPA 440/1-83/091
June 1983

Water

Development Document for Effluent Limitations Guidelines and Standards for the Metal Finishing Point Source Category

Final

DEVELOPMENT DOCUMENT
FOR FINAL
EFFLUENT LIMITATIONS GUIDELINES,
NEW SOURCE PERFORMANCE STANDARDS,
AND
PRETREATMENT STANDARDS
FOR THE
STEAM ELECTRIC
POINT SOURCE CATEGORY

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Project Officer

November 1982



40 CFR 433 METAL FINISHING



SIX CORE PROCESSES

If one or more of these processes are performed, its wastewater and 40 other process wastewater are regulated:

1. Electroplating
2. Electroless plating
3. Anodizing
4. Metal coloring
5. Etching and Chemical Milling
6. Printed Circuit Board Manufacturing

ANCILLARY PROCESSES

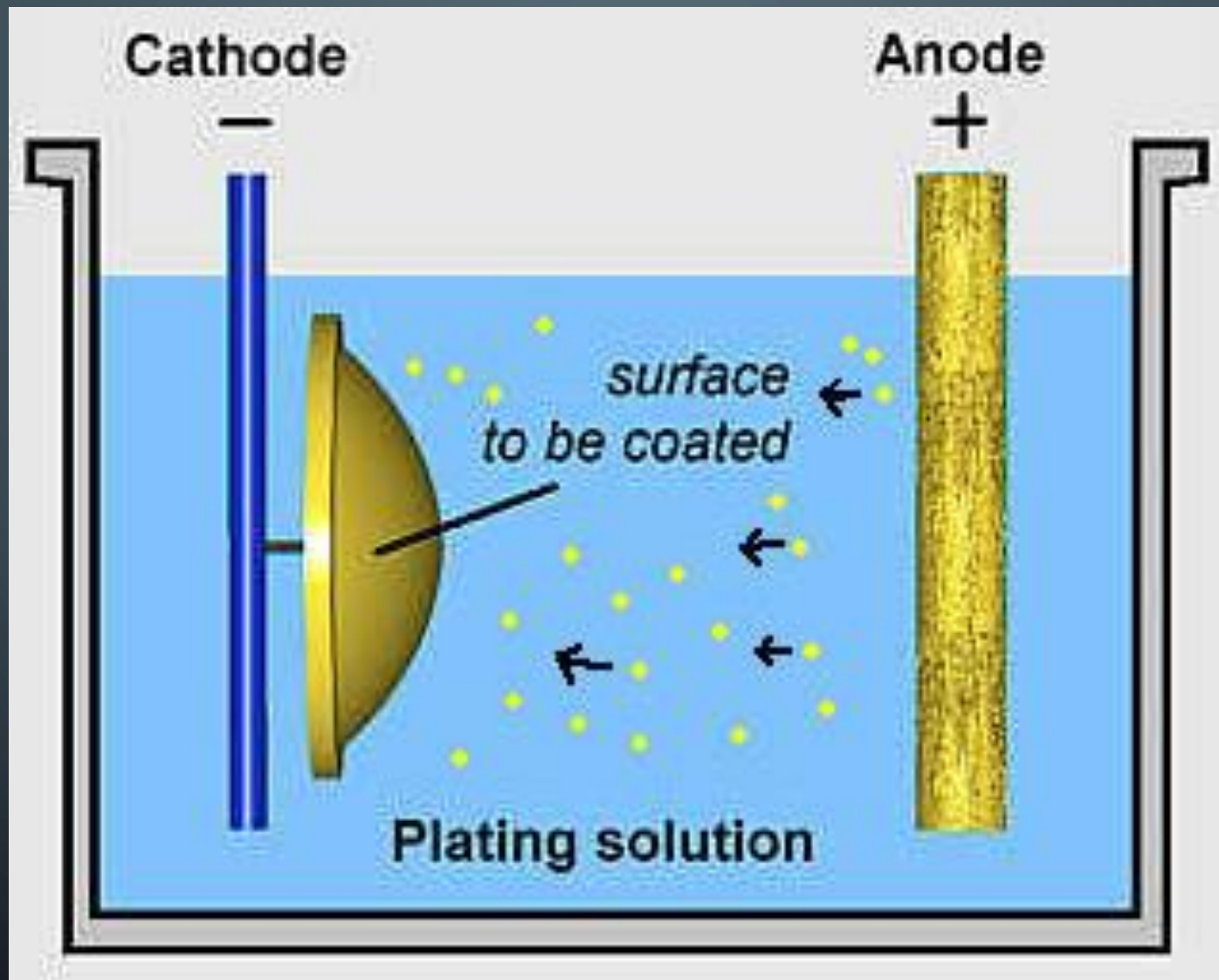
- **Cleaning**
- **Machining**
- **Grinding**
- **Polishing**
- **Barrel Finishing**
- **Burnishing**
- **Impact Deformation**
- **Pressure Deformation**
- **Shearing**
- **Heat Treating**
- **Thermal Cutting**
- **Welding**
- **Brazing**
- **Soldering**
- **Flame Spraying**
- **Sand Blasting**

- **Abrasive Jet Machining**
- **Electrical Discharge Machining**
- **Electrochemical Machining**
- **Electron Beam Machining**
- **Laser Beam Machining**
- **Plasma Arc Machining**
- **Ultrasonic Machining**
- **Sintering**
- **Laminating**
- **Hot Dip Coating**
- **Sputtering**
- **Vapor Plating**
- **Thermal Infusion**
- **Salt Bath Descaling**

- **Solvent Degreasing**
- **Paint Stripping**
- **Painting**
- **Electrostatic Painting**
- **Electropainting**
- **Vacuum Metalizing**
- **Assembly**
- **Calibration**
- **Testing**
- **Mechanical Plating**

ELECTROPLATING

- The production of a thin coating of metal such as copper, nickel, chromium, brass, bronze, zinc, tin, lead, cadmium, iron, aluminum, precious metals or combined metals upon another by Electrodeposition.
- Anode metal is dissolution to ions in either acid, alkaline or neutral solutions are reduced on cathodic surfaces.



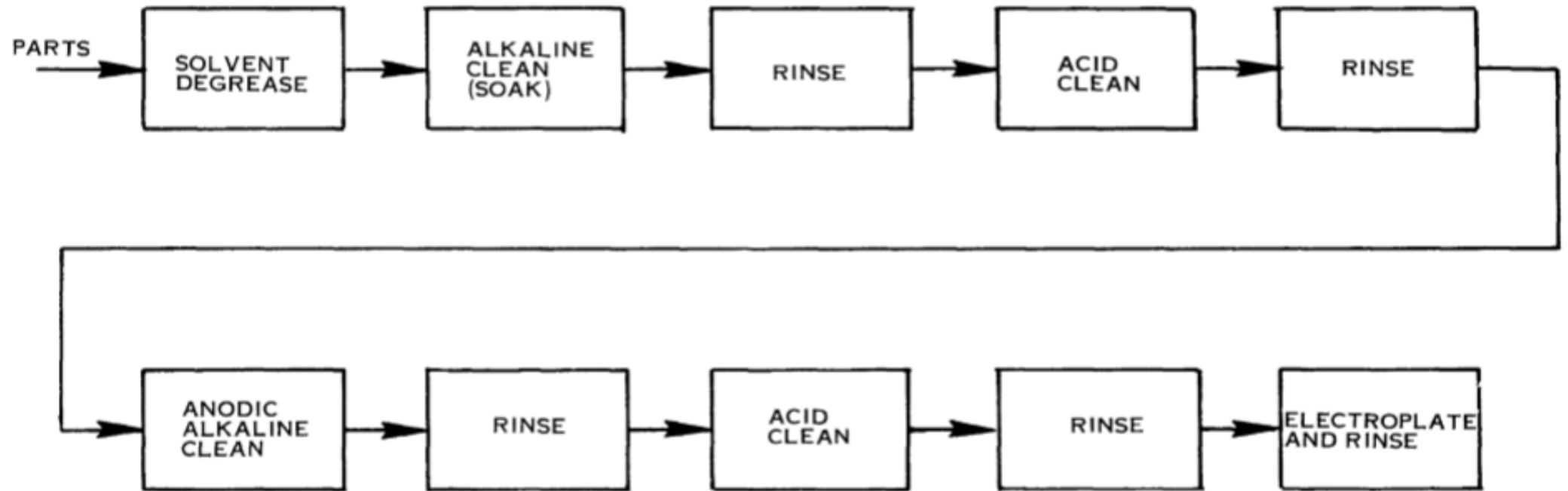
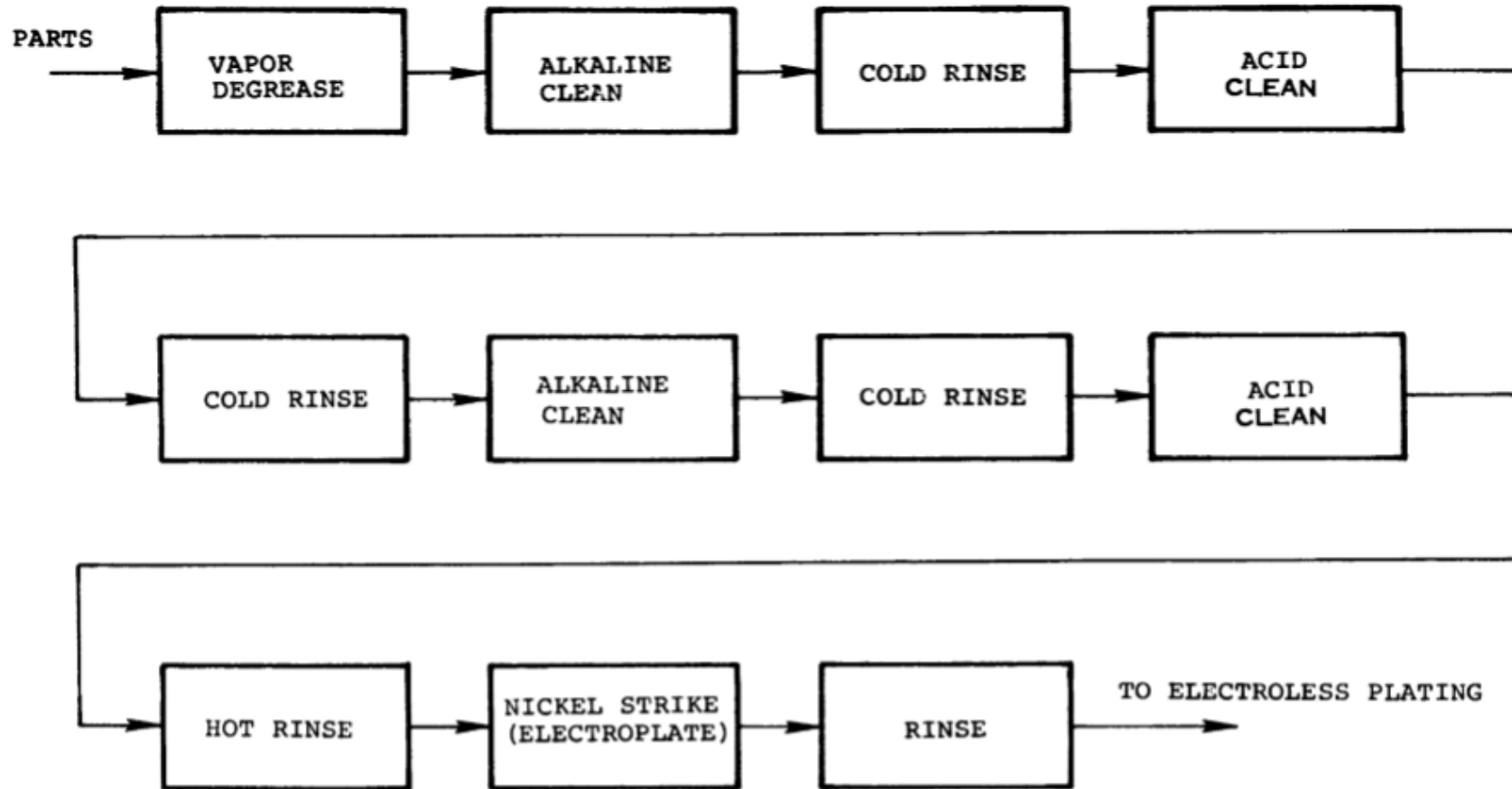


FIGURE 3-2 TYPICAL ELECTROPLATING SURFACE PREPARATION SEQUENCE

ELECTROLESS PLATING

- Chemical reduction process where reducing agents allow metal ions to deposition on a desired metal without electrical energy.
- Usually a metal salt is reduced

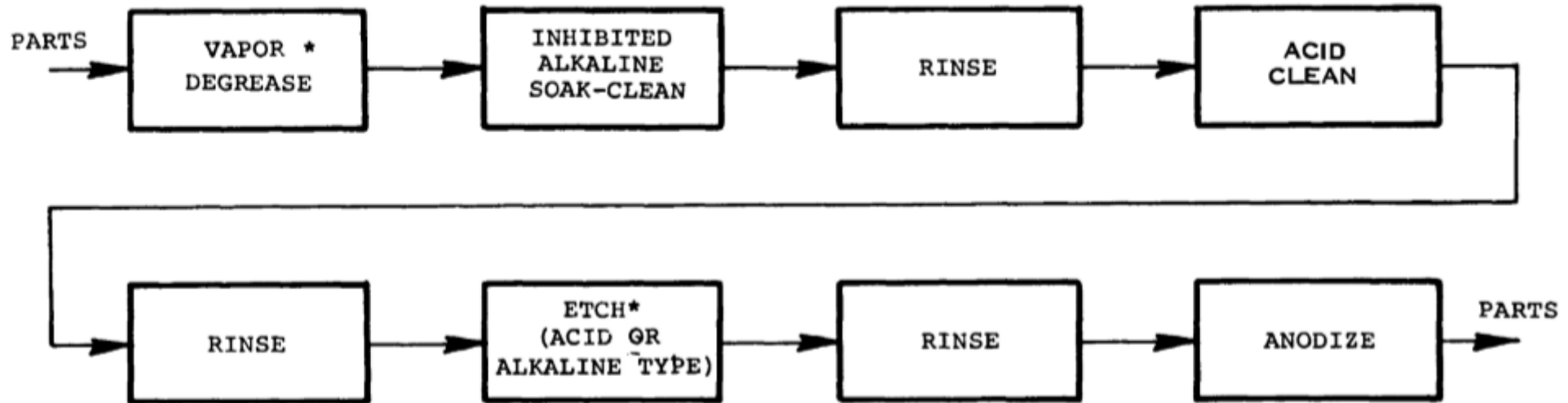


34

FIGURE 3-4 EXAMPLE OF ELECTROLESS PLATING ON METALS-SURFACE PREPARATION SEQUENCE

ANODIZING

- An electrolytic oxidation process of converting the surface layer to an oxide for protection.
- Usually aluminum base material



* OPTIONAL DEPENDING ON BASIS MATERIAL

FIGURE 3-5 EXAMPLE OF SURFACE PREPARATION SEQUENCE FOR ANODIZING OF ALUMINUM

COATING



- Chromating
- Phosphating
- Metal Coloring
- Passivating

CHROMATING

- A base metal surface is converted to a protective film form by hexavalent chromium with active organic or inorganic compounds.
- Base material usually Zinc, Cadmium, Aluminum, Magnesium, Copper, Brass, Bronze, and Silver.

PHOSPHATING

- Iron, steel, or zinc plated steel is placed into a solution of phosphoric acid

3

COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Cas #	Percentage	Chemical Name
1333-82-0	5-10%	Chromium (VI) trioxide, anhydrous
7429-90-5	30-50%	Aluminum (fume or dust)
14808-60-7	0-10%	Silica, crystalline
7631-86-9	1-2%	Silica, amorphous
1344-28-1	2-3%	Aluminum oxide (Al ₂ O ₃)
7664-38-2	10-35%	Phosphoric acid
	<10%	Phosphoric acid, reaction products with aluminum hydroxide and chromium oxide.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as significantly hazardous to health or the environment and hence require reporting in this section.

METAL COLORING

- Chemical conversion of the surface to an oxide.
- Base material usually copper, steel, zinc, and cadmium.

PASSIVATION

- The surface of usually stainless steel or copper are converted to a oxide film when immersed in acid.
- Acid include nitric acid on stainless steel

ETCHING AND CHEMICAL MILLING

- Control Dissolution of metal to a desired configuration with etchants. Process names include Chemical Etching, Chemical milling, Bright Dipping, Metallic Coating stripping.

CHEMICAL ETCHING

- Chemical dipping based on immersion time used to remove a small layer of metal on formed complex parts

BRIGHT DIPPING

- Removal of oxide from ferrous and nonferrous metals by multiple acids.



3. COMPOSITION & INGREDIENT INFORMATION														
CHEMICAL NAME(S)	CAS No.	RTECS No.	EINECS No.	%	EXPOSURE LIMITS IN AIR (mg/m ³)									OTHER
					ACGIH		NOHSC			OSHA				
					ppm		ppm			ppm				
					TLV	STEL	ES-TWA	ES-STEL	ES-PEAK	TLV	STEL	IDLH		
WATER	7732-18-5	ZC0110000	231-791-2	60-100	NE	NE	NF	NF	NF	NE	NE	NE		
SELENIOUS ACID	7783-00-8	VS7175000	231-974-7	1-5	(0.2)	NA	(0.2)	NF	NF	(0.2)	NA	NA		
	Acute Tox. 3; Acute Tox. 3; Aquatic Acute 1; Aquatic Chronic; H301, H331, H400, H410													
NITRIC ACID	7697-37-2	QU5775000	231-714-2	1-5	2	4	2	4	NF	2	NA	25		
	Ox. Liq. 3; Skin Corr. 1A; H272, H314													
CUPRIC NITRATE	10031-43-3	NA	221-838-5	1-3	1	NA	NF	NF	NF	1	NA	NA		
	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2; H302, H315, H319													
CUPRIC PHOSPHATE	7798-23-4	GI7875000	232-254-5	1-3	1	NA	NF	NF	NF	1	NA	NA		
	Aquatic Chronic 3; H412													

CHEMICAL MILLING

- Chemical dipping based on immersion time used to remove a larger layer(s) of metal on formed complex parts
- Chemical solutions include ferric chloride, nitric acid, ammonium persulfate, chromic acid, cupric chloride, hydrochloric acid, or combination.

PRINTED CIRCUIT BOARD MANUFACTURING

- PROCESSES:
 - Cleaning/Surface Preparation
 - Catalyst application and electroless plating
 - Pattern printing and masking
 - Electroplating
 - Etching



QUESTIONS?

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