

Table 6.4.1 F: Summary of Decorative Chromium Electroplating Alternatives

Assessment Criteria		Cr(VI) (Reference)	Comparison Relative to Cr(VI)	
			Trivalent Chromium	LTAVD
Technical/Performance Criteria	Corrosion Resistance	Good	=	=/+
	Appearance	Blue-white	-/=	=
	Throwing Power/Coverage	Poor	+	+
	Uniformity of Coating	Variable	+	+
	Tolerance to Current Interruptions	Poor	+	?
	Micro-discontinuous Structure	Need Special Process	+	?
	Susceptibility to Burning	High	+	N/A
	Ease of Rinsing	Moderate	+	N/A
	Color Buffing Required	Occasional	+	?
Financial Criteria	Effect of Impurities	Low	-	?
	Removal of Impurities	Difficult	+	N/A
	Waste Treatment & Disposal	Expensive	+	+
	Chemical Cost	Inexpensive	-	?
	Energy	196 kwh/8 hrs.	+	?
	Efficiency (number of parts per rack)	Moderate	+	Varies
	% Rejects	1.5%	+	?
Environmental Criteria	Amount of Waste Generated	High	+	+
	Use of Lead Anode	Yes	=/+	+
Human Health Criteria	Carcinogenicity	EPA Group A IARC Group 1	+	+
	Occupational Exposure: PEL (8-hour TWA)	~ mg/m ³	+	+
	Skin Irritant/Sensitizer	Yes	+/=	+

COMPARISON KEY + Better = Similar - Worse ? Unknown