

Toxics Reduction Plan for Larsen & Shaw Ltd.
(Prepared in Compliance with the Toxics Reduction Act, 2009
& Ontario Regulation 455/09)

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Prepared for:



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1.0 STATEMENT OF INTENT AND OBJECTIVES

Larsen & Shaw intends to modify practices to maintain hexavalent chromium quantities below NPRI/TRA thresholds in their facility. The objective is to minimize the quantity of hexavalent chromium kept on-site by improved inventory management.

2.0 DIRECT & INDIRECT COSTS

Direct and indirect costs involved in reducing hexavalent chromium consumption include the following:

- Clearlyte Prep 82: \$6.06/L

3.0 OPTIONS IDENTIFIED AND ASSOCIATED ESTIMATED REDUCTIONS

Table 1 lists the options identified for the reduction of the use of hexavalent chromium as well as the estimated quantities associated with implementing each option.

Table 1: Reduction Options and Estimates for Hexavalent Chromium

Reduction Category	Reduction Option(s)	Estimated Reductions	
		(kg/yr)	(%)
1. Materials or feedstock substitution	a N/A due to customer specification and lack of appropriate alternatives	-	-
2. Product design or reformulation	a N/A due to customer specification and lack of appropriate alternatives	-	-
3. Equipment or process modification	a N/A as plating best practices already in place (dwell time, cascading rinse, etc.)	-	-
4. Spill and leak prevention	a N/A as spill/leak prevention already in place, no spills to date	-	-
5. On-site reuse or recycling	a Install hexavalent chromium recycling system	11	17%
6. Improved inventory management or purchasing techniques	a More closely monitor purchasing (timing and quantity) to avoid exceeding threshold	20	32%
7. Training or improved operating practices	a N/A as plating best practices already in place	-	-

Notes

5a Assumes 90% of hexavalent chromium not contained in product can be recycled.

4.0 TECHNICAL & ECONOMIC FEASIBILITY ANALYSIS

Table 2 analyzes the technical feasibility of the identified TRA options. The text in red indicates the reason for an option not being technically feasible. The economic feasibility of the technically feasible options is analyzed following the table.

Table 2: Technical Analysis of Reduction Options

Opportunities	Technical Analysis Considerations							Presently Technically Feasible?
	Status or Reliability of Technology	Success Rate of Opportunity	Impact on Quality or Productivity	Noise Level	Multimedia Considerations	Training Needs	Space Needs	
5 Install hexavalent chromium recycling system	Relatively new technology	High	Potential decrease in both quality and productivity if not well maintained	Some	Reduces metal waste, wastewater treatment chemical and water consumption	High	Some	No
6 More closely monitor purchasing (timing and quantity) to avoid exceeding threshold	Reliable due to simplicity	High	Nil	Nil	None	Little	Nil	Yes

An economic analysis was performed on the technically feasible option and since purchasing will be timed such that the threshold is not exceeded in a year, there will be no net change in cost.

4.1.1 OPTIONS SELECTED FOR IMPLEMENTATION

As a result of the technical and economic feasibility analysis, one option was selected by Larsen & Shaw for implementation. They plan to implement the option by the date shown in the table below.

Table 3: Estimated Implementation Timeline for Selected Options

Reduction Option(s)	Estimated Implementation Dates
6 More closely monitor purchasing (timing and quantity) to avoid exceeding threshold	Sep-15