

## Appendix F

### Sherm's Test Run Data Provided by ARB/SSD

**Test 7  
Sherm's Custom Plating**

**Dates Tested: 3/9/04 – 3/11/04**

**Table 1: Freeboard Space, Chromic Acid Concentration and Average Temperature for the decorative Chromium Plating Tank During Testing**

Date	Run	Freeboard (inches)	Chromic Acid Concentration (oz/gal)	Temperature (°F)
3/9/04	1	5.0 – 4.9	34.2	109.5
3/10/04	2	3.0 – 3.5	32.6	109.8
3/11/04	3	4.0 – 4.0	Not done	109.8

**Note:**

- Freeboard space was measured at the beginning and end of the day. It represents the distance between the top of the tank and the tank solution
- Chromic Acid Concentration was measured once a day
- Temperature readings are averaged

**Table 2: Summary Surface Tension (dynes/cm) Readings at the Beginning and End of Each Day and total ampere hours during testing**

Date	Run	Surface Tension Reading During Sampling (dynes/cm)	Ampere-hours
3/9/04	1	35.6 – 35.9	415
3/10/04	2	37.5 – 35.9	459
3/11/04	3	37.8 – 37.9	425

**Note:** Surface tension was measured by E. Páramo Hernández of Metal Finishing Analytical using a stalagmometer. Samples were taken at the beginning and end of each day. These readings were taken at the time of sampling.

**Table 3: Surface Tension (dynes/cm) Readings in detail with time of sample taken, temperature when analyzed for surface tension, and time analyzed**

Date	Run	Time taken	Temperature when analyzed (°F)	Time analyzed	Surface tension Reading (dynes/cm)
3/9/04	1	9:30 A.M.	81	Same day	35.6
			67	Next day	37.1
		1:45 P.M.	90	Same day	35.9
			67	Next Day	37.6
3/10/04	2	9:20 A.M.	85	Same day	37.5
			66	Next day	38.4
		2:00 P.M.	90	Same day	37.8
			66	Next Day	38.7
3/11/04	3	9:50 A.M.	108	Same day	37.8
			69	Next day	38.7
		2:10 P.M.	109	Same day	37.9
			69	Next Day	39.9

Note: Surface tension was measured by E. Páramo Hernández of Metal Finishing Analytical using a stalagmometer. Samples were taken at the beginning and end of each day. Each sample was analyzed at the time of sampling and again the next morning.

**Additions to the bath:**

- Chromic Acid was not added to the decorative tank during testing.
- Fume suppressant used by Sherm's plating is Protab 1000 by MacDermid. However, no additions were made during testing
- Water was added as needed.

**Other Notes:**

- Plating amperage depended on type of parts plating and ranged from 200 – 1000 Amperes.
- Dummy parts were provided by Alta Plating and used when necessary to increase production. These parts were rotated in sets and included 2 inch diameter X 3 feet long pipe and 1.5 inch X 3 feet square tubing. The surface area was about 7.7sq.ft. Dummy parts were plated with nickel before chrome plating in order to emulate the normal plating procedure. After chrome plating, each dummy part was stripped and reactivated with nickel for subsequent chrome plating. Dummy parts were plating for 1 - 3 minutes.
- Types of parts plated were mostly automotive or motorcycle parts
- Smoke test was done every day to ensure adequate capture
- Temperature profile of the tank was done everyday

- The temporary hood was designed to accommodate the operator. A metal rod was added on top so parts could be hung and sprayed as in normal operation of Sherm's custom plating. The tank was enclosed partially with a splash guard and the hood was built on top. The front end of the hood and side was open so the operator could introduce parts into the tank transfer into the rinse tank.
- The Amp-hr meter was calibrated with the ampere meter.