CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 36

DateRun: 12/31/1969

Experimenters: Alexander Symko

ClientType: Ceramic Coating Company

ProjectNumber: Project #1

Substrates:

PartType: Coupon

Contaminants: Pitch

Cleaning Methods: Immersion/Soak

Analytical Methods: HSPiP

Purpose: Evaluate Full HSP panel of options for replacing Trichloroethylene in the client's graphite pitch impregnation process.

Experimental Procedure: Twenty Six 15 mL scintillation vials were prepared with each of the HSP calibration matrix solvents including one with TCE and one with PCE. Equal masses of Polyvinyl Chloride pitch were then put in each vial and observations were taken every 10 minutes for the first hour, followed by observations every half hour until three hours. At the first hour mark the vials were strained to examine the state of the pitch pieces as the solution became so opaque that it was impossible to see them. If the pitch particles were fine enough to pass through the strainer it was considered satisfactorily dissolved.

Results:

Matrix #	Final Score
1 - Toluene	2
2 – Dimethyl Carbonate	0
3 - Xylenes	1
4 – Benzyl Alcohol	0
5 – Ethylene glycol	0
6 – Methyl Acetate	0
7 - Undecane	0
8 – Ethyl Lactate	0
9 – Acetone	0
10 – Ethyl Acetate	0
11 – Methanol	0
12 – Ethanol	0
13 – 1,3-dioxolane	1
14 – Diethyl Carbonate	0
15 – 1-propanol	0
16 – Isopropanol	0
17- Propylene Carbonate	0
18 – Thiophene	2
19 – 1-Methoxy-2-Propanol	0
20 – Dimethyl Sulfoxide	0
21 – 1-Butanol	0
22 – Dimethyl glutarate	0
23 – Anisole	2
24 – 2-Butoxyethyl-Acetate	0
25 - Trichloroethylene	2
26 - Perchloroethylene	2

0 - less than 60% of the pitch was dissolved, 1 - more than 60% but less than 90% of the pitch was dissolved, 2 - more than 90% of the pitch was dissolved.

Summary:

Conclusion: Based on the results of this test, Toluene, Thiophene, Xylene, 1,3-Dioxolane, and Anisole may be suitable options that should be evaluated further.