CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 36

DateRun: 11/05/2024

Experimenters: Alexander Symko

ClientType: Plastic Manufacturer

ProjectNumber: Project #1

Substrates: Other

PartType: Part

Contaminants: Resins/Rosins

Cleaning Methods: Immersion/Soak

Analytical Methods: HSPiP

Purpose: Utilize the standard 24-solvent HSPiP panel as well as two comparatives to evaluate options for dissolution of the client's proprietary polymer

Experimental Procedure: 24 scintillation vials were filled with 15 mL of solvent from the TURI HSP solvent panel in addition to two other vials containing N-methyl pyrrolidone and Methyl Ethyl Ketone, these functioned as comparatives as they are currently utilized by the client in this process. Visual observations were taken prior to the immersion of the polymer sample into the solvent, then for the first hour observations were taken every 10 minutes.

Results:

Chemical	Appearance at T0	T0+10 minutes	T0+20 minutes	T0+30 minutes	T0+40 minutes	T0+50 minutes	T0+60 minutes
1-Toluene	C,C	C,C - 0	NC	NC	NC	NC	NC
2-Dimethyl Carbonate	C,C	CLD - 0	NC	NC	NC	NC	NC
3-Xylenes	C,C	PART - 0	NC	C,C - 0	NC	NC	NC
4-Benzyl Alcohol	C,C	C,C - 0	NC	NC	NC	NC	NC
5-Ethylene Glycol	C,C	C,C - 0	NC	NC	NC	NC	NC
6-Methyl Acetate	CLD	CLD - 0	NC	NC	NC	NC	NC
7-Undecane	C,C	C,C - 0	NC	NC	NC	NC	NC
8-Ethyl Lactate	C,C	C,C - 0	NC	NC	NC	NC	NC
9-Acetone	CLD	CLD - 0	NC	CLD - 1	NC	NC	NC
10-Ethyl Acetate	C,C	C,C - 0	NC	NC	NC	CLD, 1	NC
11-Methanol	C,C	C,C - 0	NC	NC	NC	NC	NC
12-Ethanol	C,C	C,C - 0	NC	NC	NC	NC	NC
13-1,3-dioxolane	CLD	CLD - 0	NC	CLD - 1	NC	NC	NC
14-Diethyl Carbonate	C,C	PART - 0	NC	NC	NC	NC	NC
15-1-Propanol	C,C	PART - 0	NC	NC	NC	NC	NC
16-Isopropanol	C,C	C,C - 0	NC	NC	NC	NC	NC
17-Propylene Carbonate	CLD	CLD - 0	NC	NC	NC	CLD, 1	NC
18-Thiophene	CLD	C,C - 0	NC	NC	NC	NC	NC
19-1-methoxy-2-propanol	C,C	C,C - 0	NC	NC	NC	NC	NC
20-Dimethyl Sulfoxide	C,C	CLD - 0	NC	NC	NC	NC	NC
21-1-Butanol	C,C	C,C - 0	NC	NC	NC	NC	NC
22-Dimethyl Glutarate	C,C	CLD - 0	NC	NC	NC	NC	NC
23-Anisole	C,C	C,C - 0	NC	NC	NC	NC	NC
24-2-butoxyethyl-acetate	C,C	C,C - 0	NC	NC	NC	NC	NC
25-MEK	CLD	CLD - 1	NC	NC	NC	NC	NC
26-NMP	C,C	PART - 0	NC	NC	NC	NC	NC

Observation Visual Code: NC - No change, C,C - Clear, colorless, SW - Swelling, CLD- cloudy, PART - Particulate, 0-dissolution less than 90%, 1 - dissolution greater than 90%

Summary:

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Conclusion: Based on the results of this test, Acetone, Ethyl Acetate, 1,3-dioxolane, and propylene carbonate are all viable solvents for the dissolution of the client's proprietary polymer.