Cleaning of Acrylic Painted Surfaces

Washington DC, April 30 – May 3, 2013

SESSION TITLE

Chemistry of liquid cleaning

INSTRUCTOR

Chris Stavroudis

SESSION OUTLINE

ABSTRACT

The fundamentals of aqueous chemistry will be reviewed as simply as possible and with the greatest currency towards the cleaning of artworks, particularly acrylic paint surfaces. Solubility theory will also be reviewed. Liquid cleaning in this context refers to both aqueous and non-aqueous cleaning systems and will be considered irrespective of application techniques.

OBJECTIVES

By contextualizing the chemical and empirical underpinnings of solubility and the interactions between molecules that can be exploited in a cleaning, we will have established a common vocabulary for the rest of the workshop.

CONTENT OUTLINE

- Simplification of the problem
- Ageing of organic materials
- Intermolecular forces and solubility
- Solubility parameters
- Aqueous chemistry
- The definition and importance of pH
- Buffering of pH
- Ionic strength and solution conductivity
- Isotonicity – diffusion and osmotic effects
- Chelating systems
- Surfactant theory
- Cloud-point and the suppression of same
- Emulsions

METHODOLOGY

A PowerPoint presentation, after which the practical session will allow participants to calibrate pH meters, mix selected MCP (Modular Cleaning Program) concentrate solutions, and mix appropriate pH- and conductivity-adjusted rinse solutions.

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