

**Programme modulaire pour le nettoyage des polychromies / Modular Cleaning Program MCP :  
les gels de solvants**

**Session de formation permanente organisée par le département des restaurateurs**

**22, 23, 24 novembre 2017**

**Orientations bibliographiques réalisées par la bibliothèque de l'Inp et les intervenants**

*Tous les documents ci-dessous peuvent être consultés à la Bibliothèque de l'INP, à l'exception de ceux précédés d'un astérisque.*

*Les mémoires de fin d'études de l'Inp sont accessibles en ligne. Pour pouvoir les consulter, vous devez préalablement demander l'autorisation au service de la documentation des oeuvres par courrier électronique à [documentation.oeuvres@inp.fr](mailto:documentation.oeuvres@inp.fr). Un identifiant et un mot de passe personnels vous seront attribués.*

**Méthodes aqueuses et Programme modulaire de nettoyage / Modular Cleaning Program**

BARTON, A.F.M. *CRC Handbook of Solubility Parameters and other Cohesion Parameters*, Boca Raton (Floride) : C. R. C. Press, 1983, 594 p.

BURKE John, « Solubility Parameters: Theory and Application » [en ligne], in *The AIC Book and paper group annual – 3*, Washington, DC : AIC, Book and Paper Group, 1984, p. 13-18  
<http://cool.conservation-us.org/coolaic/sg/bpg/annual/v03/bp03-04.html> (consulté le 21 novembre 2017)

DESVOIS Laetitia, *Le Programme de Nettoyage Modulaire, une approche systématique de dégrassage des couches picturales : étude, analyse et application de la méthode*, Paris, Université Paris I Panthéon Sorbonne, 2009, 107 p.

DESVOIS Laetitia, CRIOLLO Andrea, « The modular cleaning program: An approach for treating oil stains on paper? », *Journal of Paper Conservation*, Vol. 14 (2013), n° 1, p. 16-20

DORMAN Nicholas, « Conference Review: The Cleaning of Acrylic Paint Surfaces 3 London Workshop – A space-time continuum of pH and conductivity » [en ligne], *WAAC Newsletter*, 2012, vol. 34, n° 3, p. 18-23  
<http://cool.conservation-us.org/waac/wn/wn34/wn34-3/wn34-305.pdf> (consulté le 23 novembre 2017)

FELLER R. L. « Solubility Parameters », *The International Institute for Conservation of Historic and Artistic Works - Bulletin of the American Group*, 1968, Volume 8, Number 2, p. 20-24

FUSTER LOPEZ L., CHAROLA A.E., MECKLENBURG Marion F., DOMÉNECH CARBO Maria Teresa, *Cleaning 2010 : New insights into the cleaning of paintings* : [conference preprints (abstracts), Universitat politècnica de Valencia, May 26th-28th 2010], Valencia, Universidad politècnica de Valencia, 2010, 108 p.

HACKNEY S., TOWNSEND Joyce H., EASTAUGH N., *Dirt and Pictures Separated*. London: United Kingdom Institute for Conservation (UKIC), 1990, 56 p.

HANSEN Charles M., *Hansen Solubility Parameters: A User's Handbook*. Boca Raton: CRC Press, 2nd rev. ed. (Reimp. de 2007), [25]-519 p.

HEDLEY Gerry, « Solubility Parameters and Varnish Removal: A Survey », in *Measured opinions : Collected papers on the conservation of paintings*, Gerry HEDLEY, Caroline VILLERS (eds), Gainsborough : United Kingdom Institute for Conservation (UKIC), 1993, p. 128ss.

\*KANEGBERG B., and KANEGBERG E., *Handbook for Critical Cleaning*, Boca Raton: CRC Press, LLC, 2001

LEANER Thomas J.S., *Analysis of modern paints*, Los Angeles, Cal.: The Getty conservation institute, 2004, VI-210 p.

\*LEANER Thomas J.S., ORMSBY B., « Cleaning Concerns for Acrylic Emulsion Paints », in *The Conservation of Easel Paintings*, STONER J.H., RUSHFIELD R. (eds), London New York, N.Y. : Routledge, 2012, p. 564-570

LEANER Thomas J.S., SMITHEN, Patricia, KRUEGER, Jay W., SCHILLING, Michael R. (eds), *Modern Paints Uncovered: Proceedings from the Modern Paints Uncovered Symposium, May 16-19, 2006, Tate Modern, London*. Los Angeles: Getty Publications, 2007

MCGLINCHY Christopher, « Boundaries of the Teas Solubility Concept » [en ligne], *WAAC Newsletter*, 2002, vol. 24, n° 2, p. 17-19  
<http://cool.conservation-us.org/waac/wn/wn24/wn24-2/wn24-205.html> (consulté le 23 novembre 2017)

MICHALSKI S., « A physical model of varnish removal from oil paint », in *Cleaning, Retouching, and Coatings. Technology and Practice for easel paintings and polychrome sculpture. Preprints of the Contributions to the Brussel Congress, 3-7 September*, London, International Institute for Conservation of Historic and Artistic Works, 1990, p. 85-93

PHENIX Alan, « Solubility Parameters and the Cleaning of Paintings: an update and review », *Kunsttechnologie Konservierung*, Heft 2, Jahrgang 12, 1998, p. 387-409

SLOTTVED KIMBRIEL C., ROSE J., « The Modular Cleaning Program: First Impressions from a Four-day Course and Subsequent Implementations », *The Picture Restorer*, Issue 50, p.18-26  
(version condensée dans *WAAC Newsletter* 2017, vol. 39, n° 2, p. 22-28)

STAVOUDRIS Chris, « Azeotropes from A to Z » [en ligne], *WAAC Newsletter*, 2006, vol. 28, n° 3, p. 14-17  
<http://cool.conservation-us.org/waac/wn/wn28/wn28-3/wn28-304.pdf> (consulté le 23 novembre 2017)

STAVROUDIS Chris, DOHERTY Tiarna, « The Modular Cleaning Program in Practice: Applications to Acrylic Paintings », in *New insights into the cleaning of paintings [conference preprints (abstracts), Universidad politécnica de Valencia, may, 26th-28th 2010]*. Marion F. MECKLENBURG et al. (eds), Valencia : Universidad politécnica de Valencia = Universitat politécnica de Valencia, 2010, p. 139-145

STAVROUDIS Chris, DOHERTY Tiarna, WOLBERS Richard C., « A new approach to cleaning I: using mixtures of concentrated stock solutions and a database to arrive at an optimal aqueous cleaning system » [en ligne], *WAAC Newsletter*, 2005, vol. 27, n° 2, p. 17- 28  
<http://cool.conservation-us.org/waac/wn/wn27/wn27-2/wn27-205.pdf> (consulté le 23 novembre 2017)

STAVROUDIS Chris, DOHERTY Tiarna, WOLBERS Richard C., « A Novel Approach to Surface Cleaning: Using Mixtures of Concentrated Stock Solutions and a Database to Arrive at an Optimal Cleaning System », in *Oberflächenreinigung - Material und Methoden = Surface Cleaning - Material and Methods : Beiträge der Tagung "Oberflächenreinigung - Material und Methoden", Düsseldorf, 29. September bis 4. Oktober 2003*. Cornelia Weyer et al. (eds), Bonn : Verband der Restauratoren (VDR) Stuttgart : Konrad Theiss Verlag, 2006, p. 68-81

WOLBERS Richard C., *Cleaning painted surfaces, Aqueous methods*, London, Archetype Publications, 2000, 198 p. Trad. it. [*La Pullitura di superfici dipinte : metodi acquosi*], Saonara, Il Prato,

2005. Trad. fr. [*Le nettoyage des surfaces peintes : méthodes aqueuses*] MIRABAUD Sigrd, DESVOIS Laetitia sous la direction de PALMADE-LE DANTEC Nathalie, Paris, Eyrolles / Institut national du patrimoine (Inp), 2013

WOLBERS Richard C., STAVROUDIS Chris, « Aqueous Methods for the Cleaning of Paintings », in *The Conservation of Easel Paintings*, STONER Joyce Hill, RUSHFIELD Rebecca (eds), London New York, N.Y. : Routledge, 2012 (Routledge Series in Conservation and Museology), p. 500-523

WOLBERS Richard C., STAVROUDIS Chris, « The Cleaning of Paintings », in KANEGSBURG Barbara, KANEGSBURG Edward, *Handbook for Critical Cleaning 2<sup>nd</sup> Edition Volume 2: Applications, Processes and Controls*, Boca Raton: CRC Press, 2011

## Solvants et émulsions

BLANK Sharon, STAVROUDIS Chris, « Solvents and Sensibility » [en ligne], *WAAC Newsletter*, vol.11, n° 2, 1989, p. 2-10  
<http://cool.conservation-us.org/waac/wn/wn11/wn11-2/wn11-202.html> (consulté le 21 novembre 2017)

BURNSTOCK Aviva, KIESLICH Tanya, « A study of the clearance of solvent gels used for varnish removal from paintings », in *ICOM Committee for Conservation, 11th Triennial Meeting, Edinburgh, Scotland, 1-6 September 1996*, Londres, James and James, 1996, p. 253-262

DORGE Valerie (ed), *Solvent gels for the cleaning of works of art, the Residue Question*, Los Angeles, The Getty Conservation Institute, 2004, XI-160 p.

FELLER Robert L., STOLLOW Nathan, JONES Elizabeth H., *On Picture Varnishes and Their Solvents*. Washington D.C.: National Gallery of Art, 1985, XXIV-260 p.

FORD Bruce, BYRNE Allan, « The lipid stripping potential of resin soap gels used for cleaning oil paintings » [en ligne], *AICCM Bulletin*, 1991, vol. 17, n° 1 et 2, p. 51-60  
<http://www.tandfonline.com/doi/abs/10.1179/bac.1991.17.1-2.004> (consulté le 23 novembre 2017)

HEDLEY Gerry, ODLYHA M., BURNSTOCK Aviva, TILLINGHAST JHUSBAND C., « A study of the mechanical and surface properties of oil paint films treated with organic solvents and water », in *Measured opinions : Collected papers on the conservation of paintings*, Gerry HEDLEY, Caroline VILLERS (eds), Gainsborough : United Kingdom Institute for Conservation (UKIC), 1993, p. 103-111

KHANDEKAR Narayan, « A survey of the conservation literature relating to the development of aqueous gel cleaning on painted and varnished surfaces », *Reviews in Conservation*, 2000, n°1, p. 10-20

\*ODEGARD N., CAROLL S., ZIMMT W., « Chemical Safety », in *Material Characterization Tests for Objects of Art and Archeology*, London: Archetype Publications, 2000, p. 7-17

PHENIX Alan, WOLBERS Richard, « Removal of Varnish: Organic Solvents as Cleaning Agents », in *The Conservation of Easel Paintings*, STONER Joyce Hill, RUSHFIELD Rebecca (eds), London New York, N.Y. : Routledge, 2012 (Routledge Series in Conservation and Museology), p. 524-554

PHENIX Alan, « The Swelling of Artists' Paints in Organic Solvents. Part 1, A Simple method for measuring the in-plane swelling of unsupported paint films » [en ligne], *Journal of the American Institute for Conservation*, 2002, vol. 41, n° 1, p. 43-60  
<http://www.tandfonline.com/doi/abs/10.1179/019713602806082610> (consulté le 23 novembre 2017)

PHENIX Alan, « The Swelling of Artists' Paints in Organic Solvents. Part 2, Comparative swelling powers of selected organic solvents and solvent mixtures » [en ligne], *Journal of the American Institute for Conservation*, 2002, vol. 41, n° 1, 61-90  
<http://www.tandfonline.com/doi/abs/10.1179/019713602806082647> (consulté le 23 novembre 2017)

STAVROUDIS Chris, « Gels: Evolution in Practice », in ANGELOVA Lora (ed), *Gels in the Conservation of Art*, London: Archetype Publications, 2017, p. 209-217

STAVROUDIS Chris, « More from CAPS 3: surfactants, silicone-based solvents, and microemulsions », *WAAC Newsletter*, 2012, vol. 34, n° 3, p. 24-27  
<http://cool.conservation-us.org/waac/wn/wn34/wn34-3/wn34-306.pdf> (consulté le 23 novembre 2017)

STAVROUDIS Chris, « Pemulen Revised: pHuck the pH Meter », *WAAC Newsletter*, 2012, vol. 34, n° 2, p. 19  
<http://cool.conservation-us.org/waac/wn/wn34/wn34-2/wn34-206.pdf> (consulté le 23 novembre 2017)

STAVROUDIS Chris, « Silicone-Based Solvents in Conservation. As free solvents and components of gel systems and microemulsions », in *Dall'olio all'acrilico, dall'impressionismo all'arte contemporanea - Monographie : studi, ricerche, indagini scientifiche ed interventi conservative. Atti del VII Congresso Internazionale Colore e Conservazione, Politecnico di Milano, 13-14 November 2015*. A cura di Valentina Emanuela SELVA BONINO, CESMAR7 (Centro per lo Studio dei Materiali per il Restauro), Saonara, Il Prato, 2016, p. 176-184

STAVROUDIS Chris, « Sorting Out Surfactants », *WAAC Newsletter*, 2009, vol. 31, n° 1, p. 18-21  
<http://cool.conservation-us.org/waac/wn/wn31/wn31-1/wn31-105.pdf> (consulté le 24 novembre 2017)

STAVROUDIS Chris, DOHERTY Tiarna, « A Novel Approach to Cleaning II: Extending the modular cleaning program to solvent gels and free solvents, part 1 », *WAAC Newsletter*, 2007, vol. 29, n° 3, p. 9-15  
<http://cool.conservation-us.org/waac/wn/wn29/wn29-3/wn29-304.pdf> (consulté le 24 novembre 2017)

STULIK Dusan C., KHANJIAN Herant, DORGE Valerie, DE TAGLE Alberto, « Scientific investigation of surface cleaning processes : quantitative study of gel residue on porous and topographically complex surfaces », in *ICOM, 13Th triennial meeting Rio de Janeiro, 22-27 September 2002*, London : James & James, 2002, p. 245-251

TSANG Jia-Sun, ERHARDT David, « Current Research on the Effects of Solvents and Gelled and Aqueous Cleaning Systems on Oil Paint Films » [en ligne], *Journal of the American Institute for Conservation*, 1992, vol. 31, n° 1, p. 87-94  
<http://www.tandfonline.com/doi/abs/10.1179/019713692806156457> (consulté le 24 novembre 2017)

WOLBERS Richard C., *Notes for workshop on new methods in the cleaning of painting prepared by Richard C. Wolbers with Nanette T. Sherman and C. Stavroudis = Stage animé par Monsieur Richard Wolbers assisté de Madame Géraldine Guillaume-Chavannes, 17-29 juin 1991*, Paris, ARAAFU, 1991

WOLBERS Richard C., « Recent developments in the use of gel formulations for the cleaning of paintings », in *Restoration'92 - Preprints to the conference held at the RAI international exhibition and congress centre, Amsterdam, 20-22 October 1992*. Ed. TODD Victoria, London, UKIC, 1992, p. 74-75

\*WYPYCH George, *Handbook of Solvents*, Toronto: ChemTech Publishing, 2001, XXV-1675 p.

## Vidéos

Getty Conservation Institute videos prepared for the Cleaning Acrylic Paint Surfaces (CAPS) workshops :

Calibrating Conventional pH Meters  
<https://www.youtube.com/watch?v=9Ktlz0uw6kw>

Calibrating pH and Conductivity: Horiba Meters  
[https://www.youtube.com/watch?v=\\_nx3gNnKsUE](https://www.youtube.com/watch?v=_nx3gNnKsUE)

Preparing pH- and Conductivity- Adjusted Water  
<https://www.youtube.com/watch?v=hGAUAgNYZjl>

Preparing a Pemulen Gel from MCP and Making an Emulsion  
<https://www.youtube.com/watch?v=2O5pYyc45Qo>

Making Agarose Gel and Preparing an Agarose Plug  
<https://www.youtube.com/watch?v=SX4n2DO6Lao>

Measuring Surface pH and Conductivity Using Water Drop and Agarose Plug Methods  
<https://www.youtube.com/watch?v=bOqZEE7Kb8Y>

Mixing and Using Velvesil Plus  
<https://www.youtube.com/watch?v=i6cet8sa-6Y>

Preparing a Dow Mineral Spirits Microemulsion (With Cosurfactants)  
<https://www.youtube.com/watch?v=SGkf3i7rnDw>

Preparing a Silicone Microemulsion (With Cosurfactant) – [without cosurfactant]  
<https://www.youtube.com/watch?v=xDpwloLqJS4>

---

**Droits d’auteur**

© Institut national du patrimoine

---