

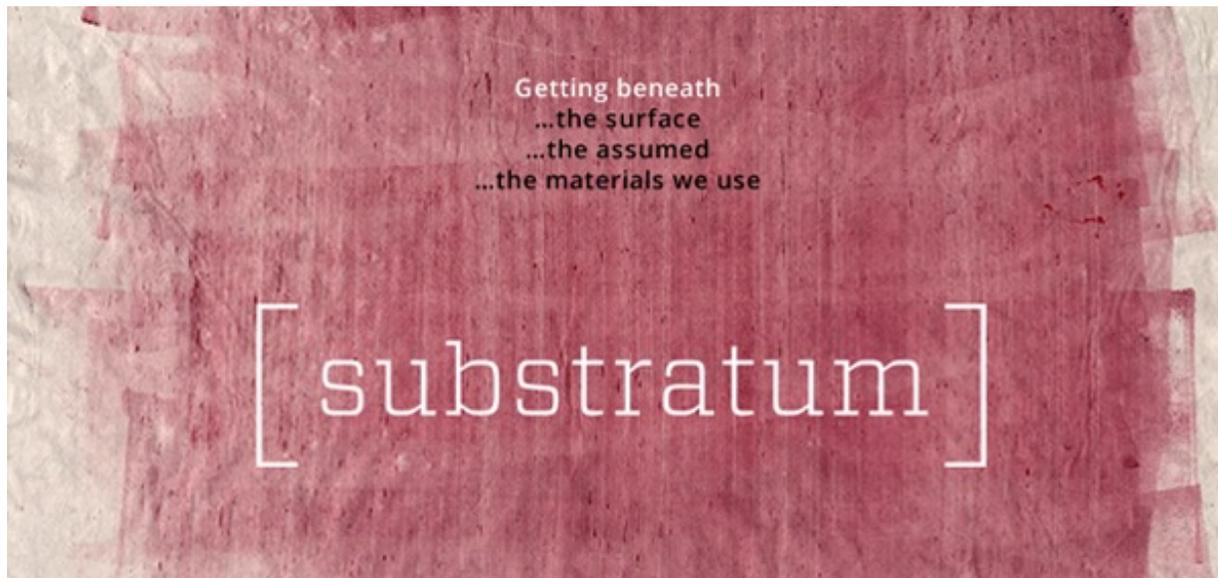
Collaborative Conclusions

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A Friend of Printeresting

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Collaborative Conclusions: Artists and Scientists Examine How Everyday Materials Impact Health is a guestpost by [Carand Burnet](#)

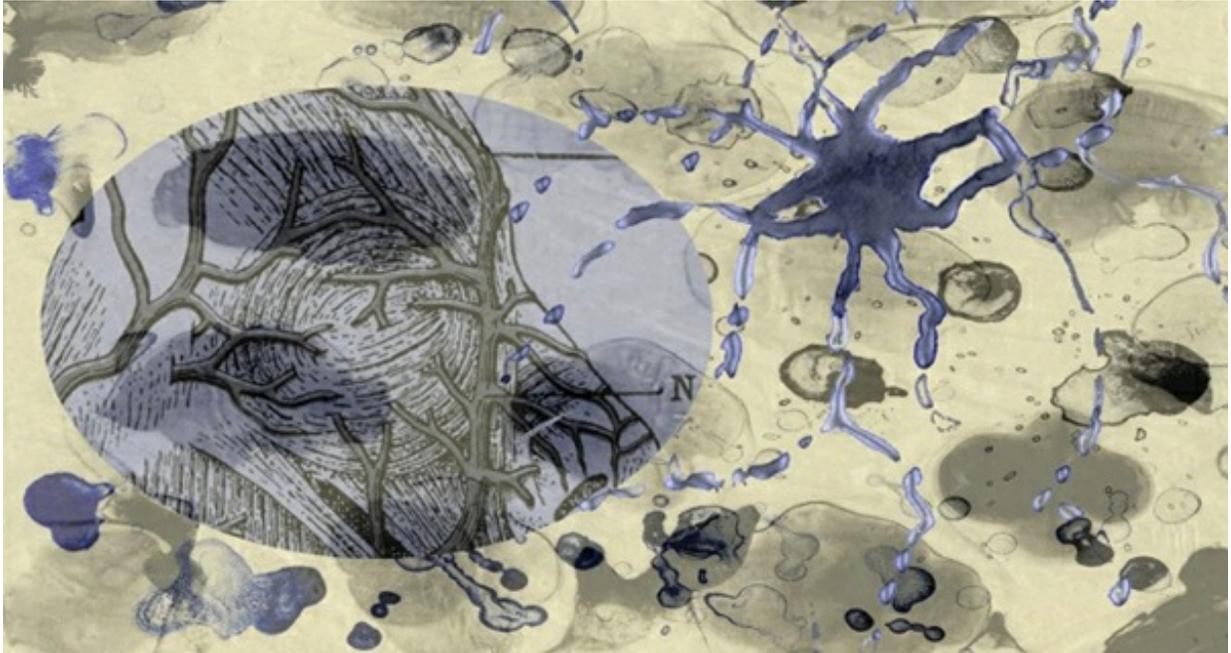


An artist interacts with material on an intensely personal level, often without considering the personal health implications. Specifically for printmakers, incising, sanding, and eroding a plate is a major part of the process towards creating an image. However, the artist's well-being is potentially threatened everyday by seemingly mundane materials like wood, plastic, metal, photopolymer, and linoleum. Questioning what chemicals are hidden beneath the surface and how the human body is affected is important because these materials surround everyone. With the help of funding from Artists in Context, seven artists at Zea Mays Printmaking asked these questions and drew surprising conclusions. Their research has taken the shape of a free accessible website called [Substratum](#)—a studio tool for individuals to learn how materials and creative processes affect health.

[Zea Mays Printmaking](#), located in Florence, MA, has over a decade of research behind safer alternatives to traditional printmaking methods. In this case, a partnership of art and science created the online inquiry into printmaking substrates and health impacts. Substratum is the result of a year's collaboration between artists, scientists, engineers, and occupational safety organizations. Visually engaging and informative, the website provides useful statistics, MSDS information, and simple suggestions for safer studio practices. [Artists in Context](#), a nonprofit based in Cambridge, MA, awarded Zea Mays Printmaking with a grant to develop the project and to convey it to an online audience. Artists in Context promotes exchanges between creative thinkers and other disciplines to create new approaches in solving contemporary issues.

Under the framework of the Artists in Context grant and guidance of studio director Liz Chalfin, the artists began to scrutinize the printmaking plates they use to create imagery. It quickly became evident that materials in question extend beyond the studio and into everyday life. Printmaker Joyce Silverstone, who studied substrates typically employed to create monotypes, commented, "Even finding information on a household item like plastic was difficult. Artists use these materials, but so does the public, and it's frightening there's so little information out there."

From the start, the project encountered roadblocks as the group found that many MSDS, also known as Material Safety Data Sheets, left a lot unsaid. A MSDS provides basic instruction for a substance's proper handling and storage. Examining nearly empty pages, the artists contacted Dr. David Hinkamp, professor at the Health in the Arts Program at the University of Illinois, Chicago. Dr. Hinkamp deciphered the MSDS sheets, interpreting their meaning and implications. He explained that even though MSDS are helpful, they are one part of understanding artist materials because MSDS only covers select substances. Other chemicals, not recognized by the government, are untested and hidden in countless products. In fact, numerous consumer goods, like tissues, include undocumented substances. Dr. Hinkamp's advice affirmed the project's broader scope and confirmed the need for additional outreach into scientific communities.



The artists connected with Dr. Richard Peltier, an Atmospheric Chemist at the University of Massachusetts Amherst. Dr. Peltier, an expert in the health consequences related to air pollution, visited Zea Mays Printmaking and analyzed the photopolymer plate that the studio uses. The plates are treated with a photosensitive film and require several preparatory stages before being printed, during which the artists believed fumes were released. While surveying the process, Dr. Peltier encountered three stages that the plates released airborne vapors. Upon recommendation, Chalfin added supplemental vents. Lowering inhalation levels in studios with photopolymer processing is critical because it releases chemical fumes that could cause eye and respiratory irritation if not properly ventilated. Not only did the Zea Mays Printmaking alter their ventilation in response to Dr. Peltier's findings, but printmaker Nancy Diessner also added vents to her private studio. Pamela Crawford, who works in monotype and etching remarked, "We're proud that even our small efforts have prompted action within our artistic community."

With notes scattering like leaves over the studio tables, the artists began to wonder how their findings could be visually represented. They looked outward to scientists for technical guidance but also looked within themselves for interpreting the dilemma of preserving their health without restricting creative freedom. Substratum underwent many transformations during its incubation period. As the group proposed ideas such as a performance installation and exhibit, they realized that the internet would move the information beyond their immediate region. So they aspired to blend their art and personal stories with technology. The group tied on their aprons, rolled out the ink, and dusted off the plates being warmed in the sunlight. They swayed from the press to the paper— seven sets of hands rubbing, wiping, deciding. The prints were then digitally collaged and integrated in Substratum's home page. A slideshow displays vibrant diagrams, cross sections of muscles, finger prints, and DNA strips ghostly patterning over soft, blurred texture.



During this time, Environmental Engineers Marina Gayl and Scott Fortier from The Massachusetts Office of Technical Assistance and Technology paid a site visit to Zea Mays Printmaking and assessed health hazards in the studio. Gayl and Fortier helped the members make sense of commonplace materials like plastic and wood. Particular plastics emit various rates of fumes, so artists should consider low emission types, like the ones listed by The Office of Technical Assistance and Technology on Substratum. Some plastics, including Plexiglass and polyurethane, should be handled with care because they contain Dioxins, phthalates, and BPA, which could disrupt the endocrine system. Like the other scientists, the assistance was free of charge. Chalfin commented, "Every artist should consider a scientist an incredible resource. Each one was accessible, accommodating, and willing to help artists make change." Susan Jaworski-Stranc, a linoleum artist that studied the substrate, added, "I think it was a pleasure both ways. The scientists enjoyed having a new challenge."

The most unsettling discovery was formaldehyde's widespread and covert use in wood. The chemical is an adherent and is inhaled when it off-gasses, is sanded, or cut. Formaldehyde, recognized as a human carcinogen by the US Toxicology Program, causes eye, nose, and throat irritation, in addition to reproductive damage. A derivative of the chemical is an antibacterial component in domestic products like toilet paper, paper towels, and cosmetics. Judith Bowerman, who practices relief and researched the medium, remarked, "I was amazed by how far reaching formaldehyde is. From household item like nail polish to a printmaker's wood block, non-artists are as much in the dark as artists are."

Zea Mays Printmaking discovered that asking questions generates positive responses. For example, the artists contacted a photopolymer manufacturer, who was missing a MSDS. A few weeks later a new MSDS was forwarded and is now obtainable through Substratum. In addition to the project prompting action, the artists gained insight into the history of the substrates they studied. Printmaker Lynn Peterfreund gained a new perspective on the copper plates she uses for Intaglio. Because copper is a scarce resource, what is available nowadays is mostly recycled. She noted that, "...Intaglio artists are possibly working with the same materials as someone from the middle ages. It's remarkable to think about a material so full of history." Substratum's model acts as a template for others to gain knowledge and direction—defining the relationship between artists and their creative materials. Upon completion of the project, Chalfin commented, "As artists, we must educate ourselves and ask questions. By doing so, we are looking out for everyone."

Carand Burnet is a poet and mixed media artist. Her articles have been previously featured in Art New England Magazine.

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