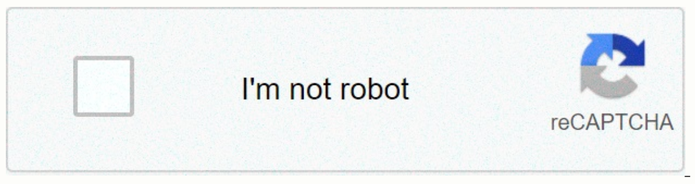

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How are mirrors made mercury

Products How to make a Faux Mercury Mirror Clean and silver glass according to the instructions in your kit. This antiquing process works just as well with pouring or spray silver. When the glass is silver, let the silver dry but not add a background color. Measure out equal amounts of silver remover parts A and B. Pour the mixture into a Misting bottle that produces a very fine mist. Spray the silver briefly and evenly with silver remover. Hold the Misting Bottle further back for a nice, even effect or closer to the glass for larger holes and a more dramatic result. Rinse the Silver Remover with distilled water and let the mirror dry. Protect the silver with Nikolas Clear spray paint. History These days the phrase mercury mirror is used loosely to describe many types of distressed or antiqued silver mirrors. A real mercury mirror is made by rubbing mercury, a metal that is liquid at room temperature, into a layer of tin (not aluminum) foil by hand until the two metals merge and then place a sheet of glass on top. The original 357 mirrors in the Hall of Mirrors at Versailles were mercury mirrors. Everyone knew when Versailles was built in 1684 that mercury was toxic. That is why Baron Justus von Leibig, a very skilled and creative German chemist, in 1835 developed the process of producing silver nitrate mirrors that we use today. Even a perfect tin mercury amalgam mirror is not as reflective as a silver mirror so using the phrase mercury mirror to mean an imperfect or distressed silver mirror is appropriate. Mercury mirrors can mean: A glass mirror created by Mercury silver Mercury glass mirrorA component of the liquid-mirror telescope Disambiguation page providing links to topics that could be ensured by the same search bait, This disambiguation page lists articles associated with the title Mercury Mirror. If an internal link led you here, you may want to change the link to point directly to the intended article. Retrieved from August 28, 2017 | Sheila Howell I have a special place in my heart for antique mirrors. Something about them just seems to reach out and grab me, drag me in, and speak to my soul. I don't know when this obsession started, or even why. I just know that I am not the only one, especially when it comes to mirrors made with real mercury glass. The first days of Mercury glass have been around since the early 16th century, when Del Gallo Glassmakers on the island of Murano in Venice invented a way to apply a reflective mercury-tin alloy to the glass plate. The mirrors they produced seem raw by modern standards, but they were far superior to anything that had come before. The process was extremely expensive, but demand was huge across Europe. All the big houses coveted the mercury glass mirrors, and were willing to huge sums to acquire these mirrors for their own homes. After all, what aristocratic lady could live without one? There was so much wealth involved that for 150 years Venice mirror makers guild limited travel for their members, to keep the technology from spreading. But in the mid-17th century, France spirited away some of the Italian artisans and started its own royal mirror factory in Saint-Gobain. When Louis XIV built his magnificent palace in Versailles, the French factory delivered the pieces used in the chateau's famous Hall of Mirrors – 357 of them in all, scattered among 17 soaring arches, facing 17 huge arcade windows. The breathtaking power of mercury glass. Even kings were entranced! The technology eventually spread throughout Europe, but it was not until 1835 that the mirror made it easier. That year, a German chemist named Justus von Liebig invented silver, a technique still in use today, which uses silver rather than mercury to make glass reflective. It was much cheaper and safer than working with toxic, unstable liquid mercury, and soon the pre-produced mirrors were mass produced. Still, real mercury glass continued to be made, and didn't completely die out until the early 20th century. The funny part: for many years silver glass was still called mercury glass. Even today, modern silver glass ornaments and porcelain are called mercury glass, and are very popular. You just need to know what you're looking for. Real, antique mercury glass mirrors here at European Finds, when we refer to a mercury glass mirror, we are talking about the real thing - old, old mirrors made with mercury. There are a few things that put these beautiful pieces apart from their newer pre-eroded counterparts. There will almost always be flaws in the glass. Made without the benefit of modern machines, old glass was thicker and less uniform. You may notice some rippling in your reflection. While silvered glass tends to faking over time to a yellowish hue, mercury glass is made with tin, which oxidizes to a bluish-grayish hue. Genuine mercury glass was made with a 25/75 alloy where liquid mercury filled the spaces between tin crystals. Over the years, some of the mercury would evaporate and some would flow toward the base of the mirror, leaving cavities between the crystals. This lack of reflective mercury is what causes dark spots, clouding and freckling in old mirrors, while the higher concentration near the bottom of the glass can also lead to extra deterioration. Yes, mercury vapour is highly toxic. But studies have shown that these old mirrors, even in rich museum back rooms filled with them, do not pose a health risk. In general, the most desirable antique mirrors are those that have never been restored, repainted or re-gilded. And that goes for unrepaired, also unreplaced mercury glass. I. I. the appearance of these old mirrors - not only the lovely frames, but the glass as well. They don't do this anymore, so it just exudes history to me. Age spots and all, genuine mercury glass is simply irreplaceable. And it makes me love it even more. Buy Now: Do you love what you see? Find these mercury glass antiques at EuropeanFinds: Featured Picture: 19th Century Mercury Glass Mirror with Gold Ram Inset Picture: Mercury Candlesticks Tin-Mercury Amalgam MirrorsBack to The Objects Of Specialty Group Conservation Wiki Contributor: Kerith Koss Schrager Your Name May Be Here! Please contribute. Copyright: 2011. The Wiki pages of the object group are a publication of the Objects Specialty Group at the American Institute for Conservation of Historic and Artistic Works. The object group's Wiki pages are published to members of the Specialty Objects Group. Publishing does not support or recommend any treatments, methods, or techniques described herein. The use of tin-mercury amalgam was the primary method for producing glass mirrors from the 16th to early 20th century. In this tin process foils and liquid mercury were applied to glass; The resulting two-phase amalgam consisted of tin-mercury crystals surrounded by a mercury-rich liquid phase. Identification Distinctive mercury-containing mirrors from silver mirrors can be difficult. If the mirror was produced before the beginning of the 20th century, it is probably a mercury amalgam mirror. Silvering, the second dominant historical mirroring technique, involves the deposition of silver on the glass. While silver was developed in the mid-19th century, it did not completely replace the amalgam process until the 20th century. Unfortunately, most mercury mirrors are only identified when mercury droplets are detected along the bottom of the frame or on floors and subboards. Sometimes beads of liquid mercury are also visible from the front of the mirror, which can be observed migrating under the glass. There are several additional ways to identify an amalgam mirror if liquid mercury is not visible. Scientific tests, such as X-ray fluorescence (XRF), can easily confirm the presence of mercury. However, if these methods are not available, mercury and silver mirrors can be distinguished by subtle differences in color and reflectivity. Mercury mirrors reflect less light and have a bluish appearance, while silver mirrors look more yellow. This effect can be strengthened by placing a thin paper over the mirror, which will appear more palare and brighter over silver mirrors (Hadsund 1993). Deterioration The state of mercury mirrors may be deceptive; they may appear to be in good condition even if they actively deteriorate and emit mercury. Look for surfaces that exhibit small bright spots, creating a glittering, rather than reflective, surface. The lower section of the mirror may be more deteriorated with several small holes. These holes may only be visible when the object is backlit and rarely visible during normal use. Corrosion begins as small dark spots that create a dark and cloudy appearance. More severe corrosion manifests such as grey layers or as grey, yellowish-brown and/or white concentric bands resulting from tin oxidation. Conservation and Care This information is intended for use by conservators, museum staff, and the general public for educational purposes only. It is not designed to replace consultation with a trained taxidermist. To find a conservator, visit AIC's Find a Conservator's page. To learn how to take care of your personal legacy, visit the AIC Resource Center. Documentation Preventive preservation Amalgamous degradation can be decelerated by taking preventive measures, such as keeping low and constant temperatures and relative humidity. In addition, mirrors should be displayed and stored in their original orientation; changing the orientation (e.g. putting a wall mirror on the back) will change the equilibrium and promote further deterioration. Mirrors should also be checked regularly to ensure that they are free of particles such as dust and cobwebs that can retain moisture. Preventive measures can also be used to limit mercury exposure. Mirrors containing mercury should be clearly labelled. Consider replacing severely degraded mirrors with stable modern mirrors, if possible. Covering the back of the mirror serves to both protect the amalgam and contain mercury; However, mirrors should not be completely sealed to prevent the accumulation of mercury vapor and because slow evaporation of the mercury is necessary to cure the amalgam. To protect the back of the mirror while allowing for air circulation, Hadsund recommends sealing the intersection of the glass and the frame with soft felt, attaching a paper or tightly woven textile over the back of the frame, and reattaching the original mirror support (Hadsund 1993: 14). Another method of containment used by some museums involves partially or completely lining the back of mirrors with Mylar, allowing for continuous monitoring. For temporary storage, the lower halves of mirrors can be packed with polyethylene to prevent leakage and steam build-up (Swan 2010). Experimental methods using substrate layers that can absorb mercury vapour are also currently being investigated (Torge et al. 2010). Interventiva Treatments Cleaning Stabilization Structural Treatments Aesthetic Reintegration Finishes Other Treatments Health & Safety Go to Health & Safety Main Page Disclaimer: Some of the information included in this section may be outdated, especially in terms of toxicological data and regulatory standards. Also, as new information on security issues is constantly published, outside the AIC should be consulted for more specific information. Improper handling of historical mirrors for mercury amalgam poses a potential risk of elementary mercury exposure. The tin-mercury amalgam that these mirrors were made is inherently unstable and releases mercury liquid and vapor when it deteriorates. As a result, the mirrors and frames, as well as storage, work and exhibition spaces can easily become contaminated, placing anyone interacting with these objects at risk of mercury exposure. Mercury emissions are the result of several processes: oxidation of the amalgam, evaporation of the liquid phase and migration of liquid mercury to the bottom edge of the mirror due to gravity. Mercury exposure from amalgam mirrors can be mitigated by identifying mirrors containing mercury; responsible exhibition, storage, and handling; following safety protocols for cleaning up mercury spills, and proper recycling and disposal of mercury-contaminated products. While the degradation of tin-mercury amalgam is inevitable and cannot be reversed, with these preventive and safety measures allowing for the safe exhibition, storage and handling of these historical objects. Visual properties can assist in identification (see above), however, it is safest to assume that mercury is present in any mirror produced before the latter half of the 20th century, unless otherwise documented or proven by scientific methods, and should therefore be handled appropriately. Handling Handle Handle mirrors that contain or may contain mercury with extreme caution. Always wear disposable personal protective equipment (PPE) including rubber, nitrile or latex gloves, as well as protective clothing and glasses. Work in well-ventilated, cool areas. If work surfaces cannot be properly ventilated, just wear respirators with cartridges approved for use with mercury vapor (these will have a special end of service life indicator to alert the user of potential mercury vapor breakthroughs). Workspaces should be covered with a disposable material. Examine floating mercury storage and exhibition surfaces, which can be collected on floors and easily distributed via pedestrian traffic. Regularly train staff on proper handling and spill response measures (see next section). The Guidelines of the Occupational Safety and Health Authority (OSHA) limit exposure to mercury vapours to 0.1 mg/M3 air. However, this level does not reflect the current toxicological literature on mercury health effects. The more current and conservative occupational exposure level is 0.025 mg/ M3 as an 8-hour time-weighted average, set by the American Conference of Governmental Industrial Hygienists (ACGIH 2012). Although studies measuring mercury vapour emissions in gallery spaces (Hadsund 1993; Swan 2010) and lab conditions (Torge et 2010) has shown that the amount of mercury vapour mercury vapour from undisturbed historical mirrors are below recommended safety guidelines, take precautions when moving, handling, or disassembling mirrors. Warm or poorly ventilated indoor spaces and agitation of liquid mercury increase the risk of exposure to mercury vapour. Mercury vapour levels can be measured using special passive dosimeter marks (laboratory analysis is often included) or with indicator/detection cards that can be purchased through laboratory safety providers. More expensive analytical instruments are also available; however, it may be more appropriate to contract with an environmental monitoring company to monitor mercury emissions. One source is the American Industrial Hygiene Association's Consultant Listing. Since mercury liquid and steam control is an important issue in most municipalities, especially in school systems, monitoring and guidance may also be available through local public health departments on request. A valuable and free resource for SMEs is the OSHA On-Site Consultation Service, which offers advice (separate from enforcement) through offices in each state. Clean-up and disposal of Elemental Mercury Small spills of liquid mercury can be handled safely using appropriate precautions. Ventilate contaminated areas and wear protective equipment. Never use a broom or vacuum to collect liquid mercury unless it is a specially designed vacuum for mercury recovery. Commercial mercury waste kits, fungi and powders bound and containing the liquid shall be used for collection. Sprays, powders and paper are also produced to control mercury vapor levels. If waste kits are not available, carefully collect beads of mercury in sealed containers using disposable materials. Never pour liquid mercury into the drain. Discard clothing and any absorbent materials that have come into contact with mercury and do not wash contaminated material in a washing machine. Be especially aware of tracing liquid mercury on shoes. All contaminated objects should be placed in sealed containers, clearly marked and disposed of according to state, local and institutional regulations. Many civil and government agencies offer collection and exchange programs for mercury and mercury-containing devices as part of an ongoing awareness to provide proper disposal for hazardous materials. For information on these programs, please contact local officials to find out when and where a collection will be held. Resources that Earth911.com can provide information about local fundraising programs. Health risks of elementary mercury exposure Elementary mercury mainly causes health effects when inhaled like a vapor. After exposure to liquid mercury, less than 1% of the total amount is absorbed by ingestion or dermal while 80% of inhaled mercury vapour is absorbed by the airways and retained in the kidneys and brain (WHO (WHO) Symptoms of high levels of mercury exposure may occur within hours and include respiratory distress, shaking, emotional changes, insomnia, neuromuscular changes, headaches, disorders of sensations, nausea, vomiting, diarrhea, and changes in cognitive function. Chronic exposure can result in more severe kidney, respiratory, and cognitive effects. Individuals who are concerned about their exposure to mercury should consult their doctor within three days of exposure to testing and treatment. Mercury Supplies Mercury specific detection and waste products are available through most laboratory supply companies such as Grainger Industrial Supply and Fisher Scientific. Customer service representatives will be able to help you find suitable deliveries for your needs. Some of the most useful products are: Mercury vapor badges and cards Passive dosimeter brands contain adsorbent cartridges sent to laboratories to quantify exposure levels, while steam indicator cards and brands contain specialty paper that changes color in the presence of mercury. Mercury indicator powder Indicator powder changes color in the presence of mercury and can identify mercury residues. Mercury spill kit kits contain everything needed to clean up small spills including personal protective equipment (PPE), cleaning supplies, and collection containers. Mercury Recycling Vacuum Vacuum safely collects mercury, mercury vapours and mercury-contaminated particles with specially adapted filters and collection containers. Mercury vapor respirator cartridges Cartridges will have a special end-of-life indicator to alert the user of potential mercury vapor breakthroughs. Mercury amalgamation powder Adsorbent powder converts elementary mercury into an amalgam, preventing the release of mercury vapor. Powder can be safely collected in suitable disposable containers. Mercury amalgamation fungus Adsorbent fungi collect and convert elementary mercury into an amalgam, preventing mercury vapor emissions. Mercury containers/cans Polyethylene containers that use fungi to collect and contain liquid mercury. Some containers only collect the liquid mercury and others use adsorbent mushrooms to collect the mercury as amalgam. Mercury vapor powders and sprays Powder sorbs, such as iodized activated carbon, and commercial sprays reduce and suppress mercury vapors. Additional Reading Agency for Toxic Substances and Disease Registry (ATSDR), Centers for Disease Control. 2010. Mercury and your health. American Conference of State Industrial Hygienists (ACGIH). 2012. Threshold thresholds and biological exposure indices. Cincinnati, OH. Earth911.

2012. Environmental Protection Agency (EPA). 2012. Mercury Releases and Spills. (EPA). 2012.Elementary mercury effects. Hadsund, P. 1993. The Tin-Mercury Mirror: Its Its Technology and Deterioration Process. Studies in conservation, 38(1): 3-16. Koss Schrager, K. 2013. Tin-Mercury Amalgam Mirrors. AIC News, 38(1): 12-16. Occupational Safety and Health Administration (OSHA), United States Department of Labor. Mercury Vapor guideline. Payne de Chavez, K. 2010. Historic Mercury Amalgam mirrors: history, safety and conservation. Art care, Spring 2010: 23-26. Podsiki, C. 2008. Heavy metals, their salts and other compounds: A quick reference guide from aic and the Health & Safety Committee. AIC News, November 2008: Special Insert. Swan, C. 2010. Mercury: the problem of 18th century Looking Glasses. In C. Hawks, et. Al. Health & Safety of Museum Staff. New York: Society for the Preservation of Natural History Collections, 516. Torge, M., et. Al. 2010. Mercury emissions from historic Tin Amalgam mirrors. In H. Roemich (ed), Glass & Ceramics Conservation 2010, the Papers presented at the Interim Meeting of the ICOM-CC Glass & Ceramics Working Group, 3-6 October 2010, Corning, New York: ICOM Conservation Committee in collaboration with corning museum of glass, 156-163. World Health Organisation (WHO). 2000. Chapter 6.9: Mercury. In Air Quality Guidelines - Second Edition, Copenhagen, Denmark: WHO Regional Office for Europe. Back to Main Directories Page, ,

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