

# A Timeline of Colorless Glass through the Ages

The quest for perfectly colorless and transparent glass is age-old. Because glass has a natural tint due to the impurities of its raw materials, glassmakers had to intentionally manipulate its chemistry to remove all traces of color from the glass.

At almost every significant moment in glassmaking history, people took great care to make colorless glass, and it was more highly valued than other types of glass being made. As you walk through the Chrysler Museum's glass galleries, we invite you to take a closer look at how artists and designers have adapted this mesmerizing material, capitalizing on its unique beauty and optical properties.

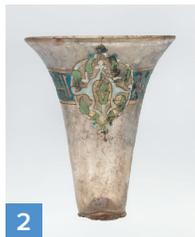
## Bowl, mid-1st century

Traditionally, glass has been made by combining three ingredients: soda, lime, and silica. This type of glass has a bluish-green color due to the presence of iron oxide in the raw materials. Blowing glass thinly was one way artisans could manipulate the material to appear colorless. Notice how the thinner glass near the top and middle of this Roman bowl looks nearly colorless, while the thicker glass of the base reveals its actual aqua color.



## Beaker or Lamp, ca. 13th–14th century

Artisans closely controlled the purity of their raw materials or adapted their recipes to create colorless glass. The addition of materials like antimony or manganese oxide served to counteract the bluish tinge of iron oxide, resulting in glass that appears colorless. Islamic glassmakers blew elegant, thin-walled glass vessels like this one, in which enamel and gilded embellishments draw attention to the glass's clarity. The graying color that we see today is due to the slow chemical breakdown of the glass over many centuries.



## Façon De Venise Winged Goblet, ca. 17th–early 18th century

During the Renaissance, glassmakers in Venice kept secret recipes for their colorless *crystallo* (Italian for “crystal”), a glass that was renowned for its clarity and strength. Other European glassmakers sought to copy the quality and style of Venetian glassware. Glasshouses in Dutch cities like Antwerp or Amsterdam often employed glassmakers trained in Venice to mimic vessels otherwise available through export only. The elaborate goblet here is accented by a pop of turquoise, but the colorlessness of the glass was its main attraction and triumph.



## Pokal, ca. 1725–50, engraved ca. 1770s

Adding lead oxide improved the working quality and appearance of colorless glass. Soft enough to carve, lead glass achieved an extra brilliance and gave a pleasant ringing sound when tapped. Bohemian artisans became renowned for their elaborately cut and engraved colorless glassware, like this stemmed goblet. For the last 250 years, the

association of “lead crystal” with notions of luxury has led to the use of the shortened “crystal” to refer to the highest-quality glass in production, regardless of actual lead content.

## Covered Sugar Bowl, ca. 1825–40

American companies drew upon a rich history of glassmaking techniques, as immigrant glassworkers brought with them knowledge of English, German, and Venetian traditions. Attractive cut and pressed tableware was produced from colorless glass, but the transparency of the material could also cleverly show off an artisan's virtuosity. Look closely at this blown bowl and you will see that silver coins were enclosed within the hollow finial of the lid and the stem while the glass was still hot—a difficult feat to accomplish.



## Covered Jar, ca. 1884



The deeply engraved areas of this jar have been given a very high polish to create a sparkling effect imitating the brilliance of rock crystal quartz. Earlier styles of glass engraving, by contrast, retained the matte finish left by the abrasives used in the engraving process to create variations in tone and texture. This vessel's shape and decorative motifs draw inspiration from a widespread interest in Japanese and Chinese art and design.

## Teapot, designed 1931

This simple yet attractive teapot demonstrates the primary emphasis of the influential Bauhaus school, which emphasized the unity of beauty and function. Every element of the teapot was designed to make preparing and serving tea as efficient and pleasant as possible. The special heat-resistant glass is perfectly colorless and transparent, allowing the user to easily control the strength of the tea by sight. The shape of the pot is practical but also visually appealing; the soft, round curves recall an airy soap bubble.



7.3.2011, 2011

Thousands of shards of Liquid Crystal Display glass (used to make television, computer, and smartphone screens) are arranged into a dense circular form. The type of glass is central to the meaning and impact of the work: an industrial material that is pervasive yet invisible.



Here, the glass projects outward from the wall and becomes sculptural. The extreme thinness of the glass and its interaction with light trick the mind with an appearance of softness, masking the danger of coming too close.

FURTHER AFIELD:

Colorless Glass at the Moses Myers House

Beth Lipman

American, born 1971

Adeline's Portal, 2013

Blown, fused, cast, sculpted, flame-worked, cut, and etched glass

Museum purchase with funds provided by the

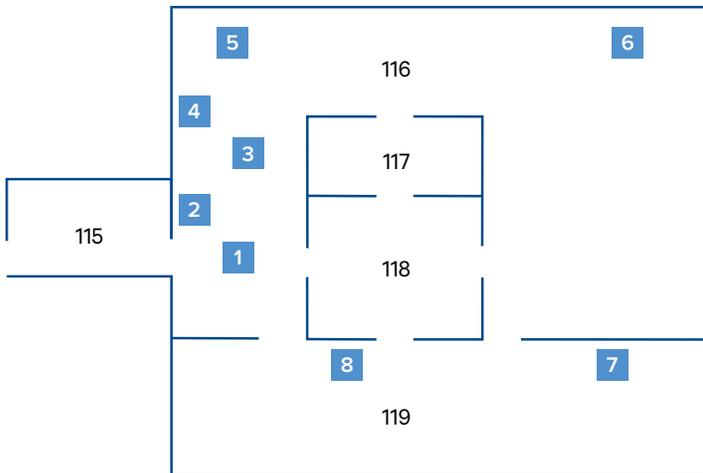
Friends of Historic Houses 2014.1



Colorless glass enables artist Beth Lipman to meditate on themes like materiality, memory, and mortality. In this installation at the Moses Myers House in downtown Norfolk, blown glass dishes, books, candles, keys, flowers, lamps, and baskets fill the hallway adjacent to the bedroom once used by Myers's daughter, Adeline. Without color, familiar objects become ghostly and timeless.

OBJECT KEY

- 1 **Ennion**  
Syria-Palestine  
**Bowl**, mid-1<sup>st</sup> century  
Mold-blown glass  
Gift of Walter P. Chrysler, Jr. 71.6779
- 2 Syria or Egypt  
**Beaker or Lamp**, ca. 13<sup>th</sup>–14<sup>th</sup> century  
Blown, gilded, and enameled glass  
Gift of Walter P. Chrysler, Jr. 81.196
- 3 Probably the Low Countries  
**Façon De Venise Winged Goblet**,  
ca. 17<sup>th</sup>–early 18<sup>th</sup> century  
Blown and applied glass  
Museum purchase 2000.9.2A–B
- 4 Central Europe, probably Bohemia  
**Pokal**, ca. 1725–50, engraved ca. 1770s  
Blown, cut, and engraved glass  
Gift of Walter P. Chrysler, Jr. 72.35
- 5 **New England Glass Company**  
East Cambridge, Massachusetts  
**Covered Sugar Bowl**, ca. 1825–40  
Blown glass with silver coins  
Bequest Kate Tyler Smith Collection 52.18.6
- 6 **Joseph Keller**, designer and engraver  
British, born in Meistersdorf, Bohemia,  
1850–1934  
**Stevens & Williams**, manufacturer  
Stourbridge, England  
**Covered Jar**, ca. 1884  
Blown, cut, and engraved glass  
Museum purchase 98.6.1
- 7 **Wilhelm Wagenfeld**, designer  
German, 1900–90  
**Jenaer Glaswerk Schott & Gen.**, manufacturer  
Jena, Germany  
**Teapot**, designed 1931  
Blown and pressed borosilicate glass  
Museum purchase, 2007.24
- 8 **Josepha Gasch-Muche**  
German, born 1944  
**7.3.2011**, 2011  
Glass mounted on wood  
Museum purchase 2011.7



CLEAR AS CRYSTAL

✦ COLORLESS GLASS FROM THE CHRYSLER MUSEUM

