the history of glass

3500 B.C.

Discovery of Glass: The earliest man-made glass objects, mainly non-transparent glass beads, are created in Egypt and Eastern Mesopotamia.

1600 B.C.

First Man-Made Glass Vessels: Glass vases, the very first man-made glass vessels, are created in Mesopotamia.

1500 B.C.

Glass Bottles Made: Egyptian craftsmen attach metal rods to a core of compacted sand, dip it into molten glass repeatedly and turn it to produce small bottles.

650 B.C.

The first glassmaking "manual" is created: It was found on tablets from the library of the Assyrian king Ashurbanipal (669-626 BC)

250 B.C.

Advancement of Glass Technology: Babylonian glassmakers using core-dipped method switch to hollow metal rods and discover that molten glass can be blown into shapes. With this innovation, glass vessels became easy and inexpensive to produce.

100

The Art of Glassmaking Spreads: The powerful Roman Empire makes glass products more accessible to the common people. The art of glass making spreads to many countries.

MESOPOTAMIAN CIVILIZATION

ANCIENT EGYPT

BRONZE AGE

ANCIENT GREECE

IRON AGE

ANCIENT ROME

BYZANT

M

3500 B.C. | 3000 B.C. | 1500 B.C. | 1000 B.C. | A.D. | 500

1608

First Glass House in America: Settlers in Jamestown, Virginia, build America's first glass house in 1608. In Colonial Jamestown and the other early colonies, glass containers provided important means of storing and displaying medicines and elixirs prepared on demand by early pharmacists.

1271

Trade Established in Italy: In the Middle Ages, the Italian city of Venice assumes its role as the glass-making center of the western world.

1887

Semi-Automatic Glass Production: By 1887, glass making transitioned from mouth blowing to a semi-automatic process when Ashley introduced a machine capable of producing 200 bottles per hour in Castleford, Yorkshire, which was more than three times quicker than the previous production methods.

1925

IS Machines Developed in the US: Individual Section machines were developed allowing the simultaneous production of a number of bottles from one piece of equipment. The gob feeder and IS machine combination remains the basis of most automatic glass container production today.

1960

Glass is given GRAS (Generally Recognized as Safe) rating from the FDA and to this day is the only packaging material to have this designation.

2000

Scientific and consumer concerns about safety of some packaging materials begins to surface. The tide begins to turn back to glass.

2008

400th Anniversary of the Jamestown, VA, Glasshouse

TODAY

Glass as a High-Tech Industry: Glass making has evolved from a craft to a precise high-tech industry. Modern glass plants are capable of making millions of glass containers per day (or 700 bottles per minute), which are used for products from wine and spirits, to foods and juices, to cosmetics and pharmaceuticals. Innovative glass packaging continues to give products valuable shelf appeal and is good for the earth because it is made from virtually inexhaustible raw materials, is 100% recyclable, refillable, and reusable. Consumers choose glass to preserve the taste and purity of foods and beverages.

INTERNET AGE

MODERN AGE

BYZANTINE EMPIRE

MIDDLE AGES

COLONIAL AMERICA

RENAISSANCE

UNITED STATES OF AMERICA

500 | 1200 | 1800 | 1900 | 1950 | 2000 | NOW

1821

Split Mold Developed: The first split mold is developed, ending the age of blowing individual bottles, glasses and flasks.

1858

The Mason jar was invented by John L. Mason in New York City

1897

First semi-automatic glass bottle making machine: Frank C. Ball invented the first semi-automatic glass bottle making machine

1903

Owens Automatic Bottle Blowing Machine Developed: American engineer Michael Owens invented an automatic bottle blowing machine, allowing for the high-speed production of bottles and jars of uniform height, weight and capacity. By 1920, there were around 200 automatic Owens Libbey Suction Blow machines operating in the U.S.

1919-1943

Glass Container Manufacturers Association of America was established in NYC.

1923

Development of the Gob Feeder: The Gob feeder ensured the rapid supply of consistently sized gobs in bottle production. Henry Ingle invented the gob feeder at the Hartford Empire Company in Connecticut.

1945

The Glass Container Manufacturers Association of America was reestablished as the Glass Container Manufacturers Institute.

1976

Glass Container Manufacturers Institute moved to Washington, DC and was renamed the Glass Packaging Institute.

2007

The National Inventors Hall of Fame inducted Michael J. Owens and his revolutionary invention, the automatic glass bottle-making machine. Owens' invention in 1903 was the most significant development in glassmaking since the invention of the blowpipe more than 3,000 years prior. Michael J. Owens is the founder of Owens-Illinois, Inc.

LATE 19TH CENTURY

Invention of the Tank Furnace: Friedrich Siemens developed the tank furnace in Dresden, Germany, replacing the pot furnace and allowing for the continuous production of great quantities of molten glass.