

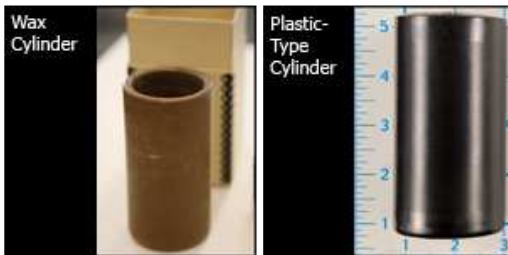


Audiovisual Formats

Intro Film Video Magnetic Audio Grooved Disc Grooved Cylinder Wire Optical Media Other Formats

Grooved Cylinder

Printable PDF version of this page



Wax Cylinders

Plastic Cylinders

Base/Composition

Wax Cylinder



Description: Wax cylinder is an analog recording sound format that consists of a mechanical grooved cylinder made of soft wax. The earliest wax cylinders are ivory or cream colored, while subsequent wax cylinders are a warm medium brown color. The "standard" cylinder dimensions are typically 2.1875" x 4.25," although they vary widely, ranging from 1 5/16" diameter x 4" length, 2 1/4" diameter x 8" length, 3 3/4" diameter by 6" length, and 5" diameter x 4" length (Stauderman, 2003).

History Cylinders are the earliest manufactured recorded sound format. They were developed by Thomas Edison in 1877 and remained in commercial production until 1929. Cylinder recording technology was still used from the 1930s until the early 1960s for ethnographic field recording notes and office dictation.

Prone to the Following Problems

All grooved disc media is susceptible to warpage, breakage, groove wear, and surface contamination (Farrington, 1991). Surface contamination includes dirt, dust, mold, and other foreign materials - all of which can abrade or damage the grooves and diminish playback sound quality. Wax cylinders are especially prone to issues related to humid storage environments, namely fungal growth. Additionally, materials within the wax cylinder harden with age, causing the wax to become brittle. The surface of wax cylinders is soft and fragile, and they are also prone to surface scratching and groove wear.

Risk Level Inherent in Format Because of the age, fragility, obsolescence, and relative uniqueness of the content, cylinders should be given priority for reformatting.

Issues Related to Playback All audiovisual media require equipment to decode the information held within it. Cylinders of different diameters cannot be played on the same machine (Stauderman, 2003); attempting to do so will damage the cylinder. The earliest wax cylinders are typically 2 to 2.5 minutes in length with 100 grooves per inch. Playback speed is also a consideration, since cylinders have different rotation speeds depending on the manufacturer and technology. Rotation speeds include 120 rpm, 144 rpm, and 160 rpm (Stauderman, 2003).

Recommended Storage Conditions(+/- 2)

Best Temp (degrees F)	Good Temp (degrees F)
40-54 °	33-44 °

[Back to the top of the page](#)

Plastic Cylinders



Description: Plastic cylinder is a mechanical grooved cylinder analog recording sound format. Pre-recorded molded cylinders were available starting in the early 1900s. Cylinders composed of cellulose nitrate molded around a cardboard or plaster core were available after 1908 (Stauderman, 2003). The "standard" cylinder dimensions are typically 2.1875" x 4.25", although they vary widely, ranging from 1 5/16" diameter x 4" length, 2 1/4" diameter x 8" length, 3 3/4" diameter by 6" length, and 5" diameter x 4" length (Stauderman, 2003).

History Cylinders are the earliest manufactured recorded sound format. They were developed by Thomas Edison in 1877 and remained in commercial production until 1929.

Prone to the Following Problems All grooved disc media is susceptible to warpage, breakage, groove wear, and surface contamination (Farrington,1991). Surface contamination includes dirt, dust, mold, and other foreign materials - all of which can abrade or damage the grooves and diminish playback sound quality. Celluloid-based cylinders are prone to brittleness and their cores (plaster or cardboard) are extremely fragile.

Risk Level Inherent in Format Due to the age, fragility, obsolescence, and relative uniqueness of the content, cylinders should be given priority for reformatting.

Issues Related to Playback All audiovisual media require equipment to decode the information held within it. Cylinders of different diameters cannot be played on the same machine (Stauderman, 2003); attempting to do so will damage the cylinder. The earliest wax cylinders are typically 2 to 2.5 minutes in length with 100 grooves per inch. Playback speed is also a consideration, since cylinders have different rotation speeds depending on the manufacturer and technology. Rotation speeds include 120 rpm, 144 rpm, and 160 rpm (Stauderman, 2003).

Recommended Storage Conditions(+/- 2)

Best Temp (degrees F)	Good Temp (degrees F)
40-54 °	33-44 °

[Back to the top of the page](#)

Cylinders - Material Composition

Cylinders are typically composed of either wax or plastic. Cylinders composed of wax have a higher preservation priority.

Wax -The earliest wax cylinders were ivory or cream colored; subsequent wax cylinders were a warm medium brown color. In humid storage environments, wax cylinders are especially prone to fungal growth. Materials within the wax cylinder harden with age, causing the wax to become brittle. Since the surface of wax cylinders is soft and fragile, they are also prone to surface scratching and groove wear.



Brown Wax Cylinder

Plastic - Pre-recorded, molded cylinders were available starting in the early 1900s. Cylinders composed of cellulose nitrate molded around a cardboard or plaster core were available after 1908. Celluloid-based cylinders are prone to brittleness and their cores (plaster or cardboard) are extremely fragile.



Black Plastic-type Cylinder

[Back to the top of the page](#)

[Intro](#) | [Film](#) | [Video](#) | [Magnetic Audio](#) | [Grooved Disc](#) | [Grooved Cylinder](#) | [Wire](#) | [Optical](#) | [Other Media Glossary](#) | [Bibliography](#)



This page is part of the Audiovisual Self-Assessment Program (AvSAP), an IMLS-funded audiovisual preservation assessment tool. AvSAP was designed at the University of Illinois at Urbana-Champaign Library. More information about AvSAP and a link to the program can be found here:

http://www.library.illinois.edu/prescons/services/av_self_assesment_program.html

UNIVERSITY LIBRARY
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN