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What is DVD?

DVD is the new generation of optical disc storage technology. DVD is essentially a bigger, faster CD that can hold cinema-like video, better-than-CD audio, still photographs, and computer data. DVD aims to encompass home entertainment, computers, and business information with a single digital format. It has replaced laserdisc, is well on the way to replacing videotape and video game cartridges, and could eventually replace audio CD and CD-ROM. DVD has widespread support from all major electronics companies, all major computer hardware companies, and all major movie and music studios. With this unprecedented support, DVD became the most successful consumer electronics product of all time in less than three years of its introduction. In 2003, six years after introduction, there were over 250 million DVD playback devices worldwide, counting DVD players, DVD PCs, and DVD game consoles. This was more than half the numbers of video cassette recorders (VCR), setting DVD up to become the new standard video publishing.

What do the letters DVD stand for?

All of the following have been proposed as the words behind the letters DVD.

- Delayed, very delayed (referring to the many late releases of DVD formats)
- Diversed, very diversified (referring to the proliferation of recordable formats and other spin-offs)
- Digital venereal disease (referring to piracy and copying of DVDs)
- Dead, very dead (from naysayers who predicted DVD would never take off)
- Digital video disc (the original meaning proposed by some of DVD's creators)
- Digital versatile disc (the original mean ing proposed by some of DVD's creators)
- Nothing.

And the official answer is? 'Nothing.' The original acronym came from 'digital video disc.' The DVD Forum decreed in 1999 that DVD, as an international standard, is simply three letters. After all, how many people ask what VHS stands for?

Care of DVD players

Since DVDs are read by a laser, they are resistant to fingerprints, dust, smudges, and scratches. However, surface contaminants and scratches can cause data errors. On a DVD player, the effect of data errors ranges from minor video artefacts to frame skipping to complete unplayability. So it is a good idea to take care of your discs. In general treat them the same way as you would a CD.

Your player cannot be harmed by a scratched or dirty disc unless globs of nasty substances on it actually hit the lens. Still, it is best to keep your discs clean, which will also keep the inside of your player clean. Do not attempt to play a cracked disc, as it could shatter and damage the player. It does not hurt to leave the disc in the player, even if it is paused and still spinning, but leaving it running unattended for days on end might not be a good idea.

In general, there is no need to clean the lens on your player, since the air moved by the rotating disc keeps it clean. However, if you use a lens cleaning disc in your CD player, you may want to do the same with your DVD player. It is advisable to use a cleaning disc specifically designed for DVD players, because there are minor differences in lens positioning between DVD and CD players.

Periodic alignment of the pickup head is not necessary. Sometimes the laser can drift out of alignment, especially after rough handling of the player, but this is not a regular maintenance item.

Care and feeding of DVDs

Handle only at the hub or outer edge. Do not touch the shiny surface with your popcorn-greasy fingers.

Store in a protective case when not in use. Do not bend the disc when taking it out of the case, and be careful not to scratch the disc when placing it in the case or in the player tray.

Ensure that the disc is properly seated in the player tray before you close it.

Keep discs away from radiators, heaters, hot equipment surfaces, direct sunlight (near a window or in a car during hot weather), pets, small children, and other destructive forces. The DVD specification recommends that discs be stored at a temperature between 20 to 50°C with less than 15°C variation per hour. Artificial light and indirect sunlight have no effect on replicated DVDs since they are made of polycarbonate, polymer adhesives, and metal (usually aluminium or gold), none of which are significantly affected by exposure to light. Exposure to bright sunlight may affect recordable DVDs, specifically write-once DVDs (DVD-R and DVD+R) that use light-sensitive dyes. Magnetic fields have no effect on DVDs, so it is fine to leave them sitting on your speakers.

Colouring the outside edge of a DVD with a green marker (or any other colour) makes no difference in video or audio quality. Data is read based on pit interference at ¼ of the laser wavelength, a distance of less than 165 nanometers. A bit of dye that on average is more than three million times farther away is not going to affect anything.

Cleaning and repairing DVDs

If you notice problems when playing a disc, you may be able to correct them with a simple cleaning.

- Do not use strong cleaners, abrasives, solvents or acids.
- With a soft, lint-free cloth, wipe gently in a radial direction only (a straight line between the hub and the rim). Since the data is arranged circularly on the disc, the micro scratches you create when cleaning the disc (or the nasty gouge you make with the dirt you did not see on your cleaning cloth) will cross more error correction blocks and be less likely to cause unrecoverable errors.
- Do not use canned or compressed air, which can be very cold and may thermally stress the disc.
- For stubborn dirt or gummy adhesive, use water, water with mild soap, or isopropyl alcohol. As a last resort, try peanut oil. Let it sit for about a minute before wiping it off.
- There are commercial products that clean discs and provide some protection from dust, fingerprints, and scratches.

CD cleaning products work as well as DVD cleaning products.

If you continue to have problems after cleaning the disc, you may need to repair one or more scratches. Sometimes even hairline scratches can cause errors if they just happen to cover an entire error correction (ECC) block. Examine the disc to find scratches, keeping in mind that the laser reads from the bottom.

There are essentially two methods of repairing scratches: fill or coat the scratch with an optical substance; polish down the scratch. There are many commercial products that do one or both of these, or you may wish to do it yourself with polishing compounds or toothpaste. The trick is to polish out the scratch without causing new ones. A mess of small polishing scratches may cause more damage than a big scratch. As with cleaning, polish only in the radial direction. It is recommended that DVDs with scratches that cannot be polished down be returned to the Library Service for repairs. The DVDs will be handled in the same way as damaged CDs.

What happens if a disc is scratched?

Scratches may cause minor data errors that are easily corrected. That is, data is stored on DVDs using powerful error correction techniques that can recover from even large scratches with no loss of data. A common misconception is that a scratch will be worse on a DVD than on a CD because of higher storage density and because video is heavily compressed. DVD data density is physically four times that of CD-ROM, so it is true that a scratch will affect more data. But DVD error correction is at least ten times better than CD-ROM error correction and more than makes up for the density increase. It is also important to realise that MPEG-2 and Dolby Digital compression are partly based on removal or reduction of imperceptible information, so decompression does not expand the data as much as might be assumed. Major scratches may cause uncorrectable errors that will produce an I/O error on a computer or show up as a momentary glitch in DVD-video picture. Paradoxically, sometimes the smallest scratches can cause the worst errors (because of the particular orientation and refraction of the scratch).

Labels or magnetic strips on DVDs?

Labels and adhesive strips are dangerous because they can unbalance the disc and cause errors, or even damage a player, especially if they peel off while the disc is spinning. Pressure-sensitive adhesives break down over time, so it is possible for labels to come loose after a few years. Libraries and DVD rental outlets often want to label discs or attach magnetic strips for security, but it is best not to use them at all. If you must, use a ring-shaped 'donut' label that goes around the centre of the disc. As long as the circular label doesn't interfere with the player clamping onto the hub, it should be fine. If you have to use a non-circular sticker, place it as close to the centre as possible to minimise unbalancing. Placing a second sticker straight across from the centre will also help. Writing with a marker in the clear (not reflective) area at the hub is better than using a sticker, although there is not much room for writing in. Write only in the area inside a 44mm diameter. Writing anywhere else on the disc is risky, since the ink could possibly eat away the protective coating and damage the data layer underneath.

In most cases a better alternative for security is a case that can only be opened with special equipment at the register or checkout counter. Barcodes, stickers, and security strips can be placed on the case without endangering discs (or players). This is especially good for double-sided discs, which have no space for stickers.

The Library Service is still investigating various products for the cleaning of discs and the strengthening of the centre part of the disc which is the most vulnerable. The commercial products are quite expensive and will add significantly to the processing cost, but if it can extend the life of a DVD it is worthwhile looking into. Any information and suggestions on the care of DVDs by public libraries will be welcomed. DVDs are here to stay (for the next few years at least!) and we will have to find ways to optimise their life span.

Source

http:// www.dvddemystified.com/dvdfag.html

Quick reference guide for care and handling

Do

- handle discs by the outer edge or the centre hole
- use a non-solvent-based felt-tip permanent marker to mark the label side of the disc
- keep dirt or other foreign matter from disc
- store discs upright (book style) in plastic cases specified for CDs and DVDs
- return discs in their packaging (or cases) to minimize the effects of environmental changes
- leave discs in their packaging (or cases) to minimize the effects of environmental changes
- open a recordable disc package only when you are ready to record data on that disc
- store discs in a cool, dry, dark environment in which the air is clean
- remove dirt, foreign material, fingerprints, smudges and liquids by wiping with a clean cotton fabric in a straight line from the centre of the disc toward the outer edge
- use CD/DVD-cleaning detergent, isopropyl alcohol, or methanol to remove stubborn dirt or material
- check the disc surface before recording.

Do not

- touch the surface of the disc
- bend the disc
- use adhesive labels
- store discs horizontally for a long time (years)
- open a recordable optical disc package if you are not ready to record
- expose discs to extreme heat or high humidity
- expose discs to extremely rapid temperature or humidity changes
- expose recordable discs to prolonged sunlight or other sources of ultraviolet light
- write or mark in the data area of the disc (the area the laser 'reads')
- clean by wiping in a direction going around the disc.