

California Computer Care

News,
Views,
Tips and
Cool Techniques
for CCC Members

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We
speak
Geek,
so you
don't
have to.

Picking Quality Recordable CDs

Once again, simplicity loses to reality.

Recording files to CDs used to be oh, so simple. Go to the store, buy some CD-R or CD-RW blanks and pop them in your CD burning drive. But, as with all new technologies, the simple, early days give way to complex maturity (Hmmm. Kinda like life).

Recordable CD drives are now ubiquitous.

Whole industries rely on this technology. So, naturally, studies have been done, scientific papers written and some surprising results have been found.

First, definitions.

CD: Compact Disk.

Burner: CD handling mechanism that uses a laser beam to etch information onto a blank CD.

CD-R: Blank CD that can be recorded to ("burned") but never erased.

CD-RW: Blank CD that can be erased and "burned" to several times.

Not all CDs are created equal.

Avoid CD-RW discs. CD-RWs are designed for short-term storage. They deteriorate quickly and, for music, are not readable by many CD music players.

With CD-Rs, the dye used to create the colored data layer is probably the most important factor in determining long-term stability and lifespan.

There are three dyes used in CD-Rs:

Best: Phthalocyanine is inherently stable and longest lasting. Expected lifespans exceeding 200+ years when coupled with gold reflective layers in ideal temperature and humidity conditions.

To identify, look for light green on silver reflective surface or light yellow/green on a gold reflective surface.

Good: Azo. Only Mitsubishi/Verbatim uses this. Up to 100 years, less stable than

Phthalocyanine dye, but more so than cyanine dye. Look for a very deep blue on silver reflective surface similar to the illustration shown below.

Poor: Cyanine dye. Less stable than the other dyes in long-term simulation tests. However, the first made consumer CD-Rs used this and is part of the "standard" that all CD-RW drives must be compatible with. Look for green-blue/blue on silver.

Besides dye, the reflective layer used affects long-term storage.



There are three reflective layers commonly in use:

Best: Gold. It's expensive, but worth it. The bottom will look like real gold (it is!).

Good: Gold + Silver. Only Kodak Ultima Silver+Gold uses this. Kodak's tests show that this combination lasts longer than silver-looking discs.

Poor: Silver. This is not true silver, it just

looks like silver. Most discs use this. Given that all metals except gold corrode, if the top lacquer layer has been removed or damaged, corrosion can and will occur.

The longest lasting CD-Rs use Phthalocyanine dye and Gold reflective layers. Phthalocyanine with Gold+Silver reflective layers are next, followed by Phthalocyanine on Silver and Azo on Silver. Cyanine on anything (only silver is used these days) is very poor.

Check the label! Japanese made CD-Rs tend have better quality control. Many Japanese named CDs are actually made in Taiwan or Mexico. These are suspect.

These are quality CD-Rs. Look for them:

Phthalocyanine dye on Gold:

Mitsui Gold
Kodak Gold Ultima

Phthalocyanine dye on Silver & Gold:

Kodak Gold Silver+Gold

Phthalocyanine dye on Silver:

Mitsui Silver
Ricoh Platinum

Azo on Silver:

Mitsubishi/Verbatim

These may be hard to find in local

stores. Fortunately, they are readily available at internet stores like:

<http://www.cdrexpress.com>
<http://www.memorymedia.com>.

Avoid the cheapies! Cheap CD-Rs are generally of poor and variable quality. \$15.00 per hundred, shrinkwrapped packs are next to worthless.

Keep in mind, though, that even the cheapies will last a few years before deteriorating and will work fine. If they stay out of direct sunlight, they'll be great for disposable burns that don't really have to last for the ages.

Lastly, don't use stick-on labels. Sadly, those great looking sticky-back CD labels will quickly degrade the CD's data layer even if the label is properly adhered and undamaged.

Some CD-Rs have ink jet printable top surfaces and can be safely printed on by specially made ink jet printers like the Epson Stylus Photo R300.

If you want to write on your CD-Rs, don't use a sharp, hard pointed pen. A soft fiber or felt tip will work nicely. Make sure that the pen uses a mild ink solvent (if it smells bad, skip it). Pens for overhead projection cells are usually safe like Staedtler Mars Lumocolor or Sanford Vis-a-Vis.

February Tip—

There are some new email viruses going around called MyDoom. These viruses can only infect Windows PCs, but this nasty bugger has added a new wrinkle to the virus picture. In the past, email viruses would attack a Windows PC and propagate themselves by sending infected emails to everyone in the victim's address book. This goes one better. Instead of just sending itself out to the victim's address book contents, it also selects one or several names from the address book and uses those names as return addresses in place of the return address of the infected computer. This way it gets to muck up the infected PC and annoy the innocent parties that take the blame for having the virus when they, in fact, do not.

The result is that your name is used in this way and the organization receiving the infected email naturally accuses you for allowing the virus to be sent. You had nothing to do with the virus at all. In fact, as a Mac user, you cannot possibly have such a virus since none exist!

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