

RICOH MEDIA: THE FIRST NAME IN SECURE AND DURABLE INFORMATION STORAGE

Data is a vital currency in today's information age, so it's critical for companies to economically produce, distribute and store information and to do it with utmost reliability. Ricoh media set the quality standards.

Ricoh offers a choice of media that fulfill the range of application needs: CD-R, CD-RW or Platinum CD-R. Using Ricoh media, you can:

- ▶ Store the equivalent content of 450 floppy disks onto a single CD
- ▶ Create long-lasting data storage, preserving data up to six times longer than magnetic media
- ▶ Create durable data storage—once written, the media is not affected by magnets or damage from liquid spillage

Advantages of Using CD-R Media

The advent of CD recorders and drives have accelerated the use of compact discs, underscoring the following Ricoh advantages:

- ▶ Compact discs can be produced locally in-house for only the cost of the media
- ▶ Avoidance of pre-mastering costs associated with CD-ROM replication
- ▶ Elimination of turnaround time associated with replication
- ▶ Made low-volume production of compact discs economically feasible
- ▶ Assured security of data, since production is performed in-house
- ▶ Economical production of prototypes for testing before mass production
- ▶ Prototypes could be easily used for submitting data for mastering

As a result of this technical ease and broad standardization, applications for CD media are growing exponentially. These include the creation and distribution of sales and training presentations, mailers, and the secure archiving of data, image and audio information.

CD-R Media Arrives—and Takes Off

Ricoh introduced its first CD-R (recordable) media six years ago, letting you write to a compact disc using your computer. CD media are now becoming a standard vehicle for storing and distributing data, due to their high capacity (650MB), small size, light weight and rugged surface durability.

CD-R media typically have four layers: lacquer, reflective layer, dye and polycarbonate. Ricoh uses advanced phthalocyanine dye to produce gold or Platinum™ discs. Unlike other dyes, it does not degrade rapidly in bright light, or high temperature and humidity. Depending upon the capability of the disc and the recorder, CD-R discs can be written at a variety of speeds ranging from 1X (150 KB/second) to 8X (1200 KB/second).

Low Errors, Hard Layers and Legible Labels

Block Error Rate (BLER) is the prevailing test measurement of media quality. A BLER of 220 was determined to be the maximum allowed error rate for approved, certified media. Phthalocyanine-based CD-R media would reach a BLER of 220 in 5 years—translated into normal conditions (at 25 degrees Celsius), the estimated data lifetime is greater than your lifetime. Your data might be used on Pluto.

Ricoh also employs a patented Hardcoat™ layer on each disc

Specifications

	CD-R	CD-RW	Platinum CD-R
Recording Material	Phthalocyanine dye	Phase-change alloy	Advanced phthalocyanine dye
Run Time	74 minutes	74 minutes	74 minutes
Capacity	650 MB data	650 MB data	650 MB data
Hard Coat	Yes	Yes	Yes
Record Speed	1X-6X	1X-2X	1X-8X
Readable by Standard			
CD-ROM	Yes	No	Yes
M/R CD-ROM	Yes	Yes	Yes
CD-RW	Yes	Yes	Yes
DVD-ROM	No	Yes	No
Record Once	Yes	Erase and Re-record	Yes

that protects data from scratches, peeling and other damage. Ricoh's Hardcoat layer promotes labeling flexibility: printed labels created with an inkjet printer can be applied, or titles can be written directly on the disc with a felt pen. A special water-based ink reception layer on the label side assists fast drying, and blur-proof measures ensure sharp, bright images.

Only Ricoh media delivers this total package of performance, reliability and secure data integrity.

High-Performance CD-RW Media

Ricoh introduced the first multifunctional CD-RW (rewritable) drive and media in 1996. Similar to a floppy disc, but with vastly greater storage, the CD-RW disc can be written, erased and rewritten up to 1,000 times.

CD-RW discs have a phase-change alloy layer composed of silver, indium, antimony, and tellurium instead of a dye

layer, which gives the media the rewritable capability. CD RW discs are capable of 2X writing.

Platinum Media Arrives

Ricoh introduced the first Platinum media in 1997. Platinum CD-R (recordable) technology is based on advanced phthalocyanine dye enabling high resistance to intense light, heat and humidity. The tested archival life of the CD is over 200 years.

Platinum offers multi-speed (1X through 8X speeds) recording, lowest block-error rate, making it more forgiving of variations in recording power. The resulting low jitter characteristics are a big plus. Stability of the media makes Ricoh Platinum ideal for audio recording, high-speed duplication, data archiving, data backup and software distribution.

Whatever your message, Ricoh has the media.

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