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## *CD/DVD Burner and Media Success Rates - 2006*



### Report about burners and media use.

In April 2005, VSO Software introduced a new feature to collect anonymous data about the burning process. These statistics are collected in a MySQL database and we used this database to focus our attention on some optical drives. The database contains information like drive model, firmware, media type and brand, burn speed and whether the burn has completed successfully or not. As of today the database contains more than 14 million records, collected by VSO products such as [CopyToDVD](#), [BlindWrite](#), [PhotoDVD](#) and [ConvertXtoDVD](#) (formerly known as DivxToDVD) but also by some 3rd party products which use VSO technology (Burning SDK). If you wonder why you should switch on the statistic option during installation, please read this.

They published a first analysis in December 2005 and are now releasing the second, updated report.

What are the most popular CD and DVD writer manufacturers? What is the best DVD format to use (+R or -R)? Is it that important to update the firmware? Have the last trends changed since December 2005?

#### Database summary

Total records	14.069 million
Average hits per day	52 985 new records
Ratio success	95 %
Number of drives	1 983
Number of media	995
Number of drive manufacturers	58
Number of media manufacturers	18

With 50 000 new records per day we can quickly analyze the behavior of a new drive and detect compatibility issues. We use this database for support, suggesting the best drive or the best media brand for customers.

The average burning success rate has reached 95%, increasing by 2.5 % since December 05. Some people may consider it not very high, but the behavior of customers leads to believe they try several times in case the burn fails, and before realizing it is an issue of poor media quality, or another reason, the success rate is lowered. As we will see later, the best drive combined with the best media can increase the success rate up to 97%.

It's interesting to see that there are more than 1900 different drive models, and 900 different media brands and types.

As we will see later, the top 5 drive manufacturers represent more than 80% of the market.

## Chapter 1 - What is the most popular media format?

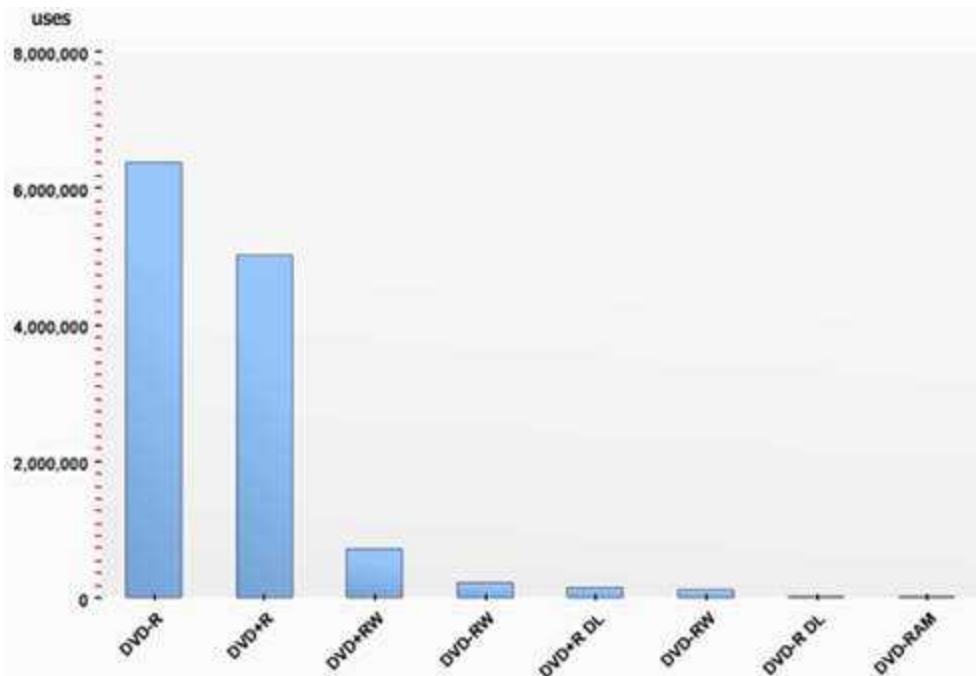
CD vs. DVD: It's not a big surprise; the DVD format is getting more and more popular. In December 2005, we found out that 80% of users were burning on DVD. Today, we see that the trend has increased to 90%. This is also due to the fact that most VSO and affiliate products do not offer the option to burn on CD. At this time only BlindWrite and CopyToDVD are still used to produce CD copies.



DVD = 90%

CD = 10% of total burns

Now let's look at the use of different DVD formats. They are divided into 3 categories, +, - (R and RW) and DL media.



DVD format graph

Media Type	Uses	Success	Ratio
DVD-R	6 371 049	6 013 915	94.39%
DVD+R	5 005 329	4 782 319	95.54%
CD-R	1 175 788	1 043 754	88.77%
DVD+RW	711 950	667 523	93.76%
DVD-RW	222 716	198 241	89.01%
CD-RW	166 577	139 814	83.93%
DVD+R DL	147 476	130 807	88.70%
DVD-RW	106 738	94 789	88.81%
DVD-R DL	4 419	3 809	86.20%
DVD-RAM	4 216	3 160	74.95%

DVD format details [sorted by uses]

They are divided into 4 big categories, the R (writable one time only), the RW (writable several times), RAM media and the Double Layer (capacity of 9 GB, like commercial DVD movies) which is available for both + and - formats now.

R format (+/-) is used 91.3% of the time while RW amounts to 8.7% . The DL format , despite being heavily promoted by drive and media manufacturers, represents only 1.1% of the total burns.

RAM is not popular with VSO products as it only accounts for 0.05 %!

For those who wonder which is the best format between + and - , here is what our survey unveils: the – format is more popular, while + is a little bit more reliable with a 95,2 % success rate.

For the RW format, the + is also the best choice as far as reliability is concerned. The Double Layer formats are still not very popular and you can see the overall failure rate is higher than for single layer. This is due to a lot of compatibility issues, media quality and complex technology.

## Chapter 2 - Hardware manufacturers

Here is the list of the top used brands, sorted by uses :

	Manufacturer	Uses	Success	Success Ratio
1	LG	2 815 427	2 666 980	94.73%
2	NEC	2 131 734	2 046 530	96.00%
3	PIONEER	1 340 158	1 239 220	92.47%
4	LITE-ON	1 331 939	1 249 516	93.81%
5	SONY	1 305 556	1 217 034	93.22%
6	SAMSUNG	839 080	778 418	92.77%
7	HP	750 440	711 320	94.79%
8	PHILIPS	579 610	550 735	95.02%
9	PLEXTOR	453 452	433 846	95.68%
10	BTC	341 673	302 308	88.48%
11	BENQ	340 668	325 732	95.62%
12	MATSHITA	331 633	301 372	90.88%
13	ATAPI	197 062	184 957	93.86%
14	TOSHIBA	182 738	170 757	93.44%
15	MEMOREX	160 119	151 904	94.87%
16	TEAC	126 527	117 884	93.17%
17	AOPEN	121 856	112 765	92.54%
18	ASUS	117 075	108 015	92.26%
19	MAD-DOG	63 217	60 419	95.57%
20	TDK	62 085	58 134	93.64%
21	TSST	45 005	43 168	95.92%
22	GENERIC	41 535	38 618	92.98%
23	SLIMTYPE	40 033	35 344	88.29%
24	QSI	29 898	27 265	91.19%
25	RICOH	27 381	24 134	88.14%
26	OPTORITE	25 265	23 499	93.01%
27	FREECOM	21 768	19 758	90.77%
28	MAD DOG	17 042	16 744	98.25%
29	MCC	13 905	12 944	93.09%

As you can see the popularity decreases quickly after the top 5. We will focus our attention on BenQ later, despite its 11th place.

LG is leading, followed by NEC, then Pioneer and Lite-ON. If we combine HP/SONY/Lite-ON (because Lite-ON is producing for Sony and HP) we could re-sort the chart. Plextor, which is well known in the community, is only at the 9th place probably because they are not as active in OEM bundling as their competitors. We almost had the same top tendencies, in December 2005.

If any unmentioned manufacturer wants to collaborate to use this database or help VSO to provide better support, they may contact us (see contact section).

According to our report, the top 4 manufacturers account for more than 50% of the burns.

## Chapter 3 - Popular drives analysis

Using the database we will focus now on some important drives. We selected them either by their popularity or their quality.

Here is the chart of the top 20 drives sorted by usage, with the successful completion rate in the right column.

	Unit String	Manufacturer	Uses	Success Ratio
1	HL-DT-STDVDRAM GSA-4163B	LG	775 354	96.12%
2	HL-DT-STDVDRAM GSA-4167B	LG	503 454	95.37%
3	_NEC DVD_RW ND-3500AG	NEC	298 247	95.57%
4	PIONEER DVD-RW DVR-110D	PIONEER	261 006	95.64%
5	LITE-ON DVDRW SOHW-1633S	LITE-ON	257 046	93.09%
6	_NEC DVD_RW ND-3520A	NEC	250 157	96.62%
7	PIONEER DVD-RW DVR-109	PIONEER	241 481	90.16%
8	_NEC DVD_RW ND-3540A	NEC	240 235	97.05%
9	TSSTcorpCD/DVDW TS-H552B	SAMSUNG	222 123	91.04%
10	PIONEER DVD-RW DVR-108	PIONEER	204 721	92.55%

11	PLEXTOR DVDR PX-716A	PLEXTOR	199 390	96.12%
12	LITE-ON DVDRW SOHW-1693S	LITE-ON	194 520	94.69%
13	TSSTcorpCD/DVDW TS-H552U	SAMSUNG	180 572	91.59%
14	SONY DVD RW DRU-810A	SONY	178 098	97.78%
15	_NEC DVD_RW ND-3550A	NEC	175 742	97.82%
16	_NEC DVD_RW ND-2500A	NEC	166 756	95.65%
17	HL-DT-STDVDRAM GSA-4160B	LG	166 127	94.40%
18	HL-DT-STDVDRAM GSA-4120B	LG	161 958	92.39%
19	HP DVD Writer 640c	HP	159 259	95.93%
20	LITE-ON DVDRW SOHW-1673S	LITE-ON	144 990	93.85%

It's no surprise to see LG leading the chart with a very popular drive (even if it's not their most recent model). NEC and LG place several drives in the chart, while the most used (and not the best quality one) SONY drive is only at the 14th position.

The average success rate in the database is 95%, so this lets you figure out what is a good or a bad drive. When the drive is over this value, it means the overall performance (regardless of the media) is quite good. When the success rate is around 90% or below, you can seriously consider the drive to be very sensitive about media used or the drive itself is not very good.

On the quality point of view, LG and NEC (for the most recent drives such as 25xx, 35xx, and 45xx models) the results are very good. Plextor and its popular PX-716 are also in a good position. Samsung, Pioneer and Sony are not impressive.

If we don't take into account the popularity of a drive (some drives are too recent and can't be in the top positions with a database running for more than 6 months). Please consider also these drives:

Plextor PX-740 : 97,5%

Toshiba R5112 : 96,8%

BenQ 1640 : 97,4%

## Chapter 4 - Media manufacturers

Here is the list of the top used media brands, sorted by number of uses :

	Manufacturer	Uses	Success	Success Ratio
1	CMC	2 204 373	2 085 756	94.62%
2	MCC	1 895 518	1 806 413	95.30%
3	RITEK	1 744 355	1 654 619	94.86%
4	NU	1 679 897	1 502 123	89.42%
5	TAIYO YUDEN	1 444 853	1 366 443	94.57%
6	SONY	697 226	662 479	95.02%
7	PRINCO	638 395	602 900	94.44%
8	OPTODISC	626 137	586 340	93.64%
9	RICOH	516 805	489 617	94.74%
10	PRODISC	449 929	427 522	95.02%
11	MBI	260 375	248 979	95.62%
12	FUJI	226 422	209 987	92.74%
13	AML	218 631	207 328	94.83%
14	INFODISC	186 116	176 025	94.58%
15	PHILIPS	169 612	159 920	94.29%
16	INFOMEDIA	136 561	129 168	94.59%
17	TDK	135 989	126 492	93.02%
18	MAXELL	133 667	127 392	95.31%

The figures clearly show that 5 manufacturers (CMC, MCC, Ritek? NU and Tayio Yuden) are leading the market .

After the 5th place, the number of burns decreases by half, which means that other manufacturers really do represent a small share in the market. .

For each manufacturer, the success ratio has been obtained by working out the average ratio for all the types of media of this brand.

Here is a list of the top 3 manufacturers and their most successful medias :

CMC: CMC MAG-E01-00 (95.08% success rate); CMC MAG-M01-00 (95.51 %).

MCC: MCC-004-00 (96.35 %) or the MCC 03RG20 (95.54 %) model.

MBI (also known as Imation) :MBIPG101-R04-01 (96.17 %) or MBIPG101-R05-01 (96.06 %).

Here are some trends about drives and media compatibilities :

Manufacturer	Drive	Media	Success rate in %
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LG	GSA-4120B	TTGO2	88.12	
		CMC MAG. AM3	98.50	
		MCC 03RG20	98.12	
		CMC MAG. AE1	71.29	
	GSA-4167B	TTGO2	47.22	
		CMC MAG. AM3	97.13	
		MCC 03RG20	97.48	
		CMC MAG. AE1	95.71	
	NEC	GSA-4160B	TTGO2	92.08
			CMC MAG. AM3	97.27
			MCC 03RG20	98.04
			CMC MAG. AE1	94.40
ND-3520A		TTGO2	97.21	
		CMC MAG. AM3	97.80	
		MCC 03RG20	98.29	
		CMC MAG. AE1	97.61	
ND-3540A	TTGO2	97.52		
	CMC MAG. AM3	99.10		
	MCC 03RG20	98.29		
	CMC MAG. AE1	97.61		
PIONEER	DRV-110D	TTGO2	96.25	
		CMC MAG. AM3	95.39	
		MCC 03RG20	96.90	
		CMC MAG. AE1	91.65	

## Chapter 5 - Popular media analysis

	Media String	Manufacturer	Uses	Success Ratio
1	CMC MAG-E01-00	CMC	675 945	95.08%
2	CMC MAG. AE1	CMC	653 651	94.28%
3	RITEKG05	RITEK	652 072	95.37%
4	PRINCO -R	PRINCO	552 776	94.42%
5	TYG02	TAIYO YUDEN	545 432	94.92%
6	RITEK-R03-02	RITEK	529 666	96.57%
7	MCC 03RG20	MCC	465 940	95.54%
8	MCC-004-00	MCC	418 623	96.35%
9	CMC MAG-M01-00	CMC	392 808	95.51%
10	MCC-003-00	MCC	362 819	95.17%
11	MCC 02RG20	MCC	351 746	95.03%
12	CMC MAG. AM3	CMC	313 428	94.52%
13	YUDEN000-T02-00	TAIYO YUDEN	265 788	95.53%
14	TTG02	TAIYO YUDEN	256 339	92.43%
15	SONY08D1	SONY	241 830	95.11%
16	RITEKF1	RITEK	231 556	93.86%
17	TTH02	TAIYO YUDEN	227 802	94.37%

18	RICOHJPN-R03-04	RICOH	225 451	96.14%
19	FUJIFILM03	FUJI	225 005	92.74%
20	OPTODISCR008	OPTODISC	202 617	93.22%
21	MBIPG101-R04-01	MBI	182 202	96.17%
22	SONY-D11-00	SONY	166 598	95.43%
23	OPTODISC-OR8-00	OPTODISC	158 297	96.03%
24	PHILIPS-041-00	PHILIPS	155 559	94.40%
25	ProdiscF01	PRODISC	148 310	94.16%
26	SONY-D21-00	SONY	146 356	95.81%
27	RICOHJPN-W11-01	RICOH	124 248	93.01%
28	INFODISC-A10-01	INFODISC	112 099	94.76%
29	UME01	(unknown)	103 322	95.49%
30	SONY16D1	SONY	102 520	94.28%

CMC, RITEK and PRINCO are leading the chart. The most reliable media are the RITEK-R03-02 and the MCC-004-00, which are respectably at the 6th and the 8th place. MCC is better known as VERBATIM and Mitsubishi brand name.

Like in the "Popular drives analysis" (Chapter 4), the success ratio reaches 95 % , which enables you to figure out which is a "good" or "bad" media. You can also notice that the TTG02 and the FUJIFILM03 are not very impressive, maybe because TTG02 is a well-known pirated media ID.

How to know if you have good or bad drive and media?

They implemented a feature in VSO Inspector, the free diagnostic and reporting tool, with which you can request the average success rate for the inserted media, and the success rate in the drive you are using.

- 1) Download VSO-Inspector from their [download section](#)
- 2) Select the drive to diagnose from the top combo (NEC 4550 in our example)
- 3) Select the Media tab

- 4) Insert a blank media (a Ritek05 DVD-R in our example) and wait for the media to be recognized
- 5) Press the Query Database button (be patient our server is overloaded, so it can take some time).

You will see

#1 the success rate (94.1%) and the number of reports for the media inserted

#2 the success rate (99%) and the number of reports (509 samples here) for the media burnt with a NEC 4550.

## Chapter 6 - Conclusion and Awards

VSO Drive AWARD : NEC

Congratulations to the drive manufacturer NEC. We have seen in the analysis that the brand was in the 2nd place in the hardware manufacturer trends, we appreciate the reliability the flexibility to add unofficial firmware and the overall efforts in the production of the latest models.

VSO Media AWARD : MCC/Verbatim

Congratulations to the media manufacturer VERBATIM ( aka Mitsubitshi aka MCC ) because of the popularity of the media ( 2nd place ) combined to the success rate and innovation ( Verbatim is the first manufacturer to have release double layer media )

### **BurnWorld Recommends The Following Software Apps:**

**For CD/DVD Backup:** [Blindwrite](#)

**For Video Converting:** [ConvertXtoDVD](#)

**For DVD Burning:** [CopyToDVD](#)

**For Digial Photo Slideshow:** [PhotoDVD](#)

Try all of them for a complete burning suite.