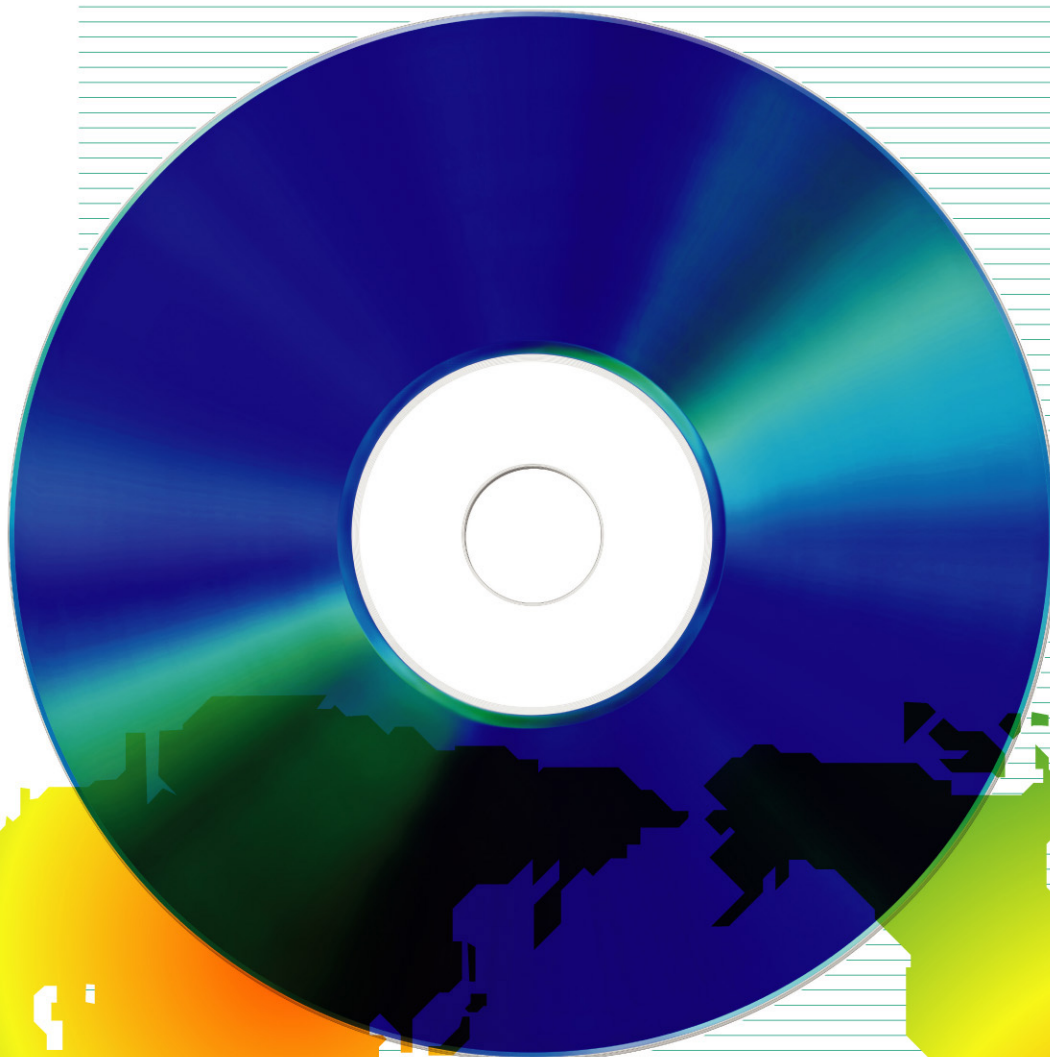


FUJIFILM

DVD Disc Series

DVD-R / DVD+R / DVD-RW / DVD+RW / DVD-RAM



OXOLIFE

as of November, 2006

Fujifilm's New High-Performance, Eco-Friendly Dye "Oxolife"

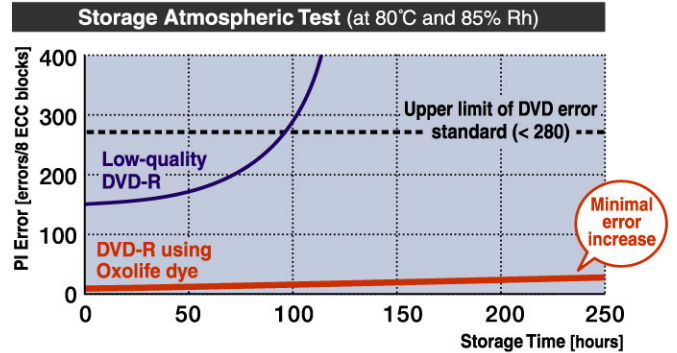


Fujifilm "Oxolife" dye — an oxonol dye optimized for DVD-R/DVD+R discs, taking advantage of Fujifilm's advanced molecular design technology and precise organic synthesis technology, cultivated over years of research in the photo-chemical field. Oxolife dye realizes accurate and stable recording over a broad range of speeds from 1x to 16x.

POINT 1

High Temperature and High Humidity Durability

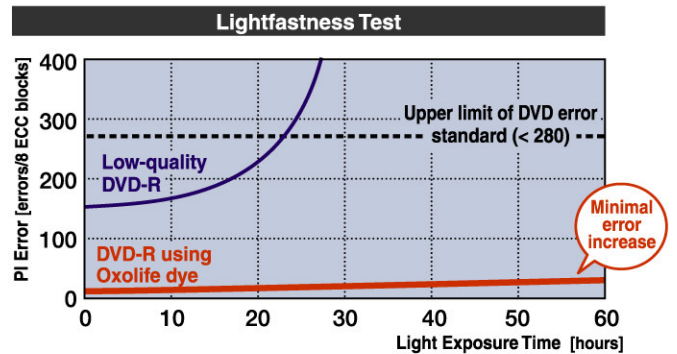
For long-term storage, a DVD disc's recording layer must be able to withstand the harmful effects of thermal energy and moisture in the air. Oxolife dye is highly resilient against moisture even in high temperature and high humidity conditions because of a hydrophobic substituent in its molecular structure that significantly suppresses the effect of moisture. Oxolife employed DVD-R discs have been tested by being exposed under extremely high temperature and humidity conditions (80°C, 85% Relative humidity) and has shown minimal increase in recording signal errors even after 250 hours of exposure, proving it's durability against extreme environmental conditions and reliability for long term storage.



POINT 2

Superior Lightfastness

For DVD-R recording-layer dyes, lightfastness is an essential specification determining its storage stability. Oxolife Dye has a molecular structure that efficiently disperses and reduces light energy, thereby significantly reducing photodegradation to realize superior lightfastness.



POINT 3

Eco-Friendly Dye

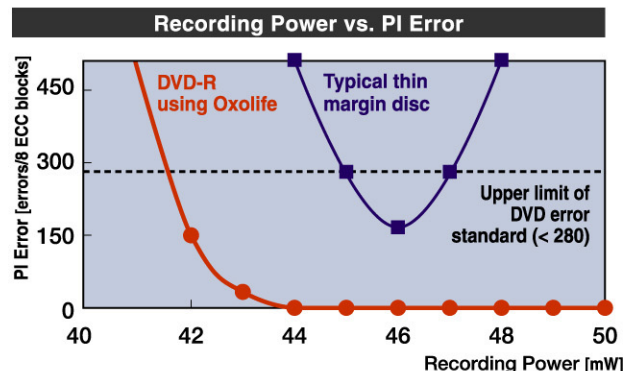
With the expectation of massive production volumes of DVD-R/DVD+R discs in the future, Fujifilm has designed Oxolife dye with an eco-friendly consideration. With less heavy metal molecules than conventional dyes and special treatment of waste fluids in the disc manufacturing process, Oxolife dye has very little impact on the environment.



POINT 4

Excellent High-Speed Recording Performance

For 16x recording, recording pits of only 400-nm must be accurately burned on the recording layer of the disc that is spinning at nearly 10,000rpm, which demands precise pit formation by an instantaneous laser light. To meet this requirement Oxolife's light-absorption wavelength against the recording laser has been optimized and sharpened to realize superior sensitivity. Oxolife dye also features minimal decomposition heat to reduce the occurrence of thermal interference between recording pits at an extreme level. Furthermore, the combination of Fujifilm's high-precision stamper whose groove dimensions are controlled down to the nanometer, and super-flat substrate formation technology that supports better laser pickup tracking, realizes precise and stable recording pit formation at 16x speed and also assures excellent compatibility with conventional low recording speed DVD devices.



Oxolife dye delivers reliable long term storage.

One major reason for video defects is deterioration of the recording dye. Thus, a high-quality dye is needed to preserve the original image and sound quality.

Original Recorded Image



as time goes by

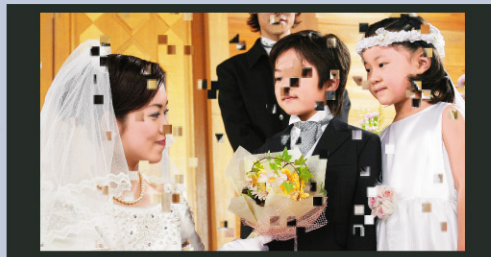
Comparison of Video Playback after Long-Term Storage

DVD with Oxolife Dye

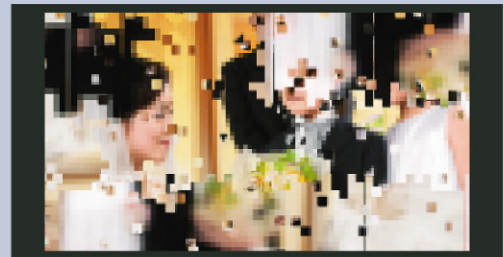


Will remain well preserved with a high quality dye.

DVD with a Low-Quality Dye



Becomes contaminated with block noise when played back.



If too many errors occur, the playback may skip or completely stop.

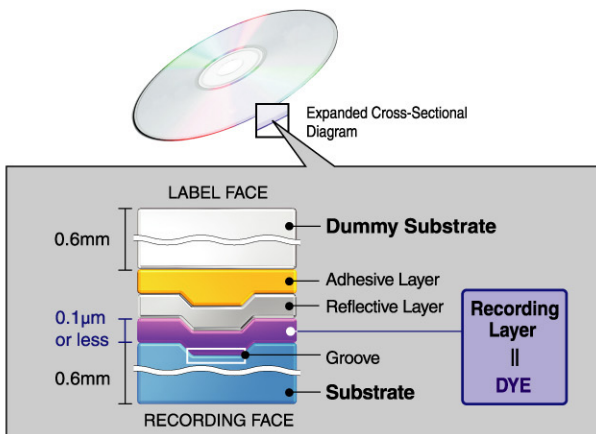
Note 1: The images depicted above are simulated images.

Note 2: Other causes of video defects aside from dye deterioration include scratches, fingerprints, and other contamination on the recorded surface.

Structure of a DVD-R Disc and Its Recording and Playback Mechanisms

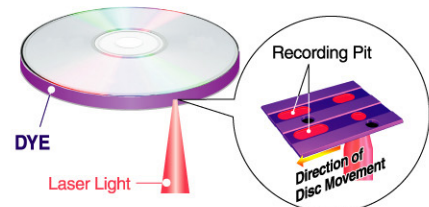
Structure of a DVD-R Disc

Data on a DVD-R disc is recorded by a dye. DVD-R discs are formed by bonding two 0.6-mm layers together, known as the substrate and dummy substrate. Between these two layers are the recording layer (the dye), the reflective layer, and the adhesive layer. The dye is coated on the substrate surface at a thickness of only 0.1- μm (100-nm). *See illustration below.



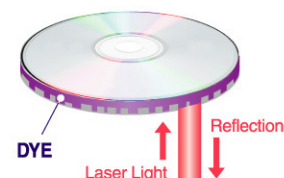
DVD-R Recording Mechanism

During recording, light from the recording laser strikes and decomposes the dye at high temperature forming recording pits, which are like burn marks. (The digital signal (0 or 1) is recorded by the presence or absence of a recording pit.)



DVD-R Playback Mechanism

During playback, light from the playback laser strikes the dye and reproduces the original data by sensing the difference in reflection strengths between positions with recording pits and those without.



Fujifilm DVD Disc Series for Reliable Recording of Video and Data

Recordable Discs

DVD -R

- Write-Once Read-Many Media, perfect for archiving because recorded data can not be tampered with or accidentally erased.
- Extremely high compatibility among various DVD devices.
- 16x-speed and 8x-speed discs feature Fujifilm Oxolife dye.

1-16x						
1-8x						
1-4x						

DVD +R

- Write-Once Read-Many Media, perfect for archiving because recorded data can not be tampered with or accidentally erased.
- Relatively high compatibility among various DVD devices, and playable on DVD video players without finalizing.
- 16x-speed discs feature Fujifilm Oxolife dye.

1-16x					
1-8x					

Rewritable Discs

DVD -RW

- Rewritable up to 1,000 times. After Recording, gives you the choice of editing or complete reuse.
- Playable on DVD video players after finalizing.

1-2x				
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DVD +RW

- Rewritable up to 1,000 times. After Recording, gives you the choice of editing or complete reuse.
- Playable on DVD video players without finalizing.

1-4x	
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DVD -RAM

- Rewritable up to 100,000 times. After Recording, gives you the choice of editing or complete reuse.
- Cartridge-type discs for assurance of disc protection.

2-3x		
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DVD Product List

Disc Type	Data Capacity	Video Recording Time	Recording Speed	Package	EAN Code	
DVD-R	4.7GB	120min. (SP mode)	1-16x	Jewel Case (5pcs in Carton)	Jewel Case 5pcs Carton	4902520 274458 4902520 277855
				25pcs Cake Box	25pcs Cake Box	4902520 281159
				50pcs Cake Box	50pcs Cake Box	4902520 278098
			1-8x	Jewel Case (5pcs in Carton)	Jewel Case	4902520 280718
				25pcs Cake Box	25pcs Cake Box	4902520 280725
				50pcs Cake Box	50pcs Cake Box	4902520 281135
DVD-R Printable	4.7GB	120min. (SP mode)	1-16x	25pcs Cake Box	25pcs Cake Box	4902520 283351
			1-8x	25pcs Cake Box	25pcs Cake Box	4902520 274427
DVD-R 8cm	2.8GB	60min. (SP mode)	1-4x	Jewel Case (3pcs Pack)	Jewel Case 3pcs Carton	4902520 283191 4902520 283207
	1.4GB	30min. (SP mode)	1-4x	Jewel Case (3pcs Pack)	Jewel Case 3pcs Carton	4902520 278142 4902520 278135
DVD+R	4.7GB	120min. (SP mode)	1-16x	Jewel Case (5pcs in Carton)	Jewel Case 5pcs Carton	4902520 264237 4902520 264244
				25pcs Cake Box	25pcs Cake Box	4902520 281166
				50pcs Cake Box	50pcs Cake Box	4902520 278128
			1-8x	Jewel Case (5pcs in Carton)	Jewel Case	4902520 280732
				25pcs Cake Box	25pcs Cake Box	4902520 280749
				50pcs Cake Box	50pcs Cake Box	4902520 281142
DVD+R Double Layer	8.5GB	240min. (SP mode)	2.4x	Jewel Case (3pcs in Carton)	Jewel Case 3pcs Carton	4902520 264442 4902520 264459
DVD-RW	4.7GB	120min. (SP mode)	1-2x	Jewel Case (5pcs in Carton)	Jewel Case 5pcs Carton	4902520 281760 4902520 281920
DVD-RW 8cm	2.8GB	60min. (SP mode)	1-2x	Jewel Case (3pcs Pack)	Jewel Case 3pcs Carton	4902520 283214 4902520 283221
	1.4GB	30min. (SP mode)	1-2x	Jewel Case (3pcs Pack)	Jewel Case 3pcs Carton	4902520 278173 4902520 278180
	DVD+RW	4.7GB	120min. (SP mode)	1-4x	Jewel Case (5pcs in Carton)	Jewel Case 5pcs Carton
DVD-RAM	4.7GB	120min. (SP mode)	2-3x	Jewel Case (5pcs in Carton)	Jewel Case 5pcs Carton	4902520 264329 4902520 264336
	9.4GB	240min. (SP mode)	2-3x	Cartridge Type (5pcs in Carton)	Single Cover 5pcs Carton	4902520 264343 4902520 264350

Specifications

		DVD-R			DVD+R		DVD-RW			DVD+RW	DVD-RAM	
		4.7GB (standard mode)	2.8GB (standard mode)	1.4GB (standard mode)	4.7GB (standard mode)	8.5GB (standard mode)	4.7GB (standard mode)	2.8GB (standard mode)	1.4GB (standard mode)	4.7GB (standard mode)	4.7GB without Cartridge	9.4GB with Cartridge
Basic Specifications	Capacity (unformatted)	4.7GB	2.8GB	1.4GB	4.7GB	8.5GB	4.7GB	2.8GB	1.4GB	4.7GB	4.7GB	9.4GB
	Video Record	120min (standard mode)	60min (standard mode)	30min (standard mode)	120min (standard mode)	240min (standard mode)	120min (standard mode)	60min (standard mode)	30min (standard mode)	120min (standard mode)	120min (standard mode)	120min (standard mode)
	Substrata Material	Polycarbonate			Polycarbonate		Polycarbonate			Polycarbonate	Polycarbonate	
	Recording Layer	Organic Dye			Organic Dye		Phase change			Phase change	Phase change	
	Recording Wavelength	650nm			655nm		650nm			655nm	650nm	
	Reflectivity	45-85%			45-85%	16-30%	18-30%			18-30%	15-25%	
	Track Pitch	0.74 μm			0.74 μm		0.74 μm			0.74 μm	0.615 μm	
	Minimum Pit Length	0.4 μm			0.4 μm		0.4 μm			0.4 μm	0.42 μm	
	Recording Speed	Up to 16x	Up to 4x		Up to 16x	Up to 2.4x	Up to 2x			Up to 4x	Up to 3x	
	Bytes/Sector	---			---		---			---	2,048Bytes	
Sectors/Track	---			---		---			---	25-59(ZCLV)		
Track Format	Wobbled groove			Wobbled groove		Wobbled groove			Wobbled groove	Wobbled land and groove		
Physical Characteristics	Outer Diameter	120.0mm	80.0mm		120.0mm	80.0mm		120.0mm	80.0mm	120.0mm	120.0mm	
	Inner Diameter	15.0mm			15.0mm		15.0mm			15.0mm	15.0mm	
	Thickness	1.2 (0.6x2) mm			1.2 (0.6x2) mm		1.2 (0.6x2) mm			1.2 (0.6x2) mm	1.2 (0.6x2) mm	
	Cartridge	---			---		---			---	Type4 (Removable)	
Operating Environments	Temperature	-5-55°C			5-55°C		-5-55°C			5-55°C	5-60°C	
	Humidity	3-95%RH (No dew condensation)			3-85%RH (No dew condensation)		3-95%RH (No dew condensation)			3-85%RH (No dew condensation)	3-85%RH (Web-bulk Temperature 23°C or lower. No dew condensation)	

DVD Disc Playback Compatibility

DVD drives for data recording (on PC)	Hardware	DVD-ROM Drive	DVD-R/-RW Drive	DVD-RAM/-R Drive	DVD+RW/+R Drive
	Disc				
	DVD-R	○	○	○	○
	DVD+R	○	×	×	○
	DVD-RW	△	○	△	△
	DVD+RW	△	×	×	○
	DVD-RAM	×	×	○	×

DVD video players and video recorders	Hardware	DVD Video Player	DVD-R/-RW Player on Video game	DVD-R/-RW Recorder	DVD-RAM/-R Recorder
	Disc				
	DVD-R	○	○	○	○
	DVD+R	○	△	×	×
	DVD-RW	△	×	○	△
	DVD+RW	△	×	×	×
	DVD-RAM	×	×	×	○

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<FUJIFILM Web site> <http://home.fujifilm.com/products/media/index.html>