NANOCMS
NANO MATERIALS & APPLICATIONS

NANOCMS CO., LTD.

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Website : http://www.nanocms.co.kr

Product Data Sheet

2018-10-11

Product : Invisible Fluorescent Materials : Red 1809

Lot. No. : -

Main use : Gravure, flexo, letterpress, offset, screen printing inks

Supply form : Powder or Inks

* Testing varnish type : Modified rosin phenol resin

Chemical & Physical properties

(determined on powder)

Product name	Appearance form	Appearance color	Solubility (Water, 20℃)	Grindometer test
Red 1809	Solid (Powder)	Off white	-	max. ≤ 1mil

Luminescent properties

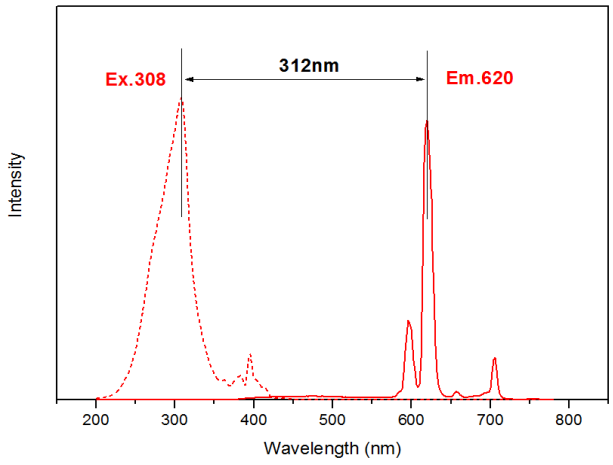
(determined on powder by PL Spectrometer)

Product name	Excitation Point (nm)	Color of fluorescence	CIE-chromaticity coordinates	DWL (nm)
Red 1809	254 (Abs_{max}308)	Red	x=0.6061 y=0.3275	618 ± 5

- Excitation & Emission

(determined by PL Spectrometer)

Red 1809



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Chemical resistance test

(determined on 20% film by Visual Check or Color Difference Meter, PL Spectrometer)

- Test for Appearance Color Fastness – *Gray Scale (Color Staining)*

Product name	Red 1809
Gray Scale (1-5)	≥ 4.5

* Gray Scale (Color Staining) = 5: dE*0.00, 4.5: dE*3.36, 4: dE*5.40, 3.5: dE*7.14, 3: dE*13.65, 2.5: dE*18.25, 2: dE*23.56, 1.5: dE*29.33, 1: dE* 34.28

- Test for Fluorescence Fastness – *Function Class (Residual Fluorescent Intensity)*

No.	Items	Function Class (1-5)	
		Red 1809	
		daylight	under uv light
0	Initial		5
1	Ethyl alcohol (30min.)		5
2	Ethyl acetate (30min.)		5
3	Perchloro Ethylene (30min)		5
4	Xylene (30min.)		5
5	Gasoline (30min.)		5
6	Acetone (30min.)		5
7	Toluene (30min.)		5
8	Acetic acid (20% Sol,, 30min.)		3
9	H_2SO_4 (2% Sol., 30min.)		2
10	HCl (5% Sol., 30min.)		2
11	NaOH (2% Sol., 30min.)		2
12	Soap solution (5% Sol.,80℃,30min.)		2
13	NaOCl (5% Sol., 30min.)		2
14	Hot water (100℃, 30min.)		5
15	Artificial sweat (30min.)		3

* Function Class = 5: 100-81%, 4: 80-61%, 3: 60-41%, 2: 40-21%, 1: 20-1%

Above picture may be different from the original.

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Light fastness test

(determined on 20% film by Visual Check or Color Difference Meter, PL Spectrometer)

- Test for Appearance Color Fastness at 100hr – *Blue Wool Scale & 20% Change from unexposed strip*

Product name	Red 1809
Blue Wool Scale (1-8)	5-6
Gray Scale (Color Staining) (1-5)	3-3.5

* Gray Scale (Color Staining) = 5: dE*0.00, 4.5: dE*3.36, 4: dE*5.40, 3.5: dE*7.14, 3: dE*13.65, 2.5: dE*18.25, 2: dE*23.56, 1.5: dE*29.33, 1: dE* 34.28

- Test for Fluorescence Fading at 100hr - *Function Class (Residual Fluorescent Intensity)*

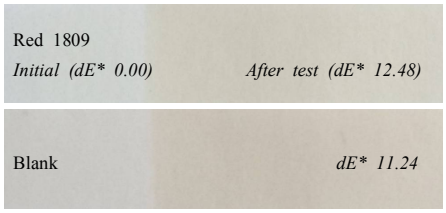
Product name	Red 1809
Function Class (1-5) at each bws	4

* Function Class = 5: 100-81%, 4: 80-61%, 3: 60-41%, 2: 40-21%, 1: 20-1%

Blue Wool



Test for Color Fastness



Test for Fluorescence Fading
(Residual Fluorescent Intensity)



* 0.89W/m2 at 340nm(NB) uv lamp, Chamber temp. 60℃, Humidity: not controlled
Modified ASTM G154 Cycle 1 by QUV Accelerated Weathering Tester (model: Q-Lab QUV/spray)

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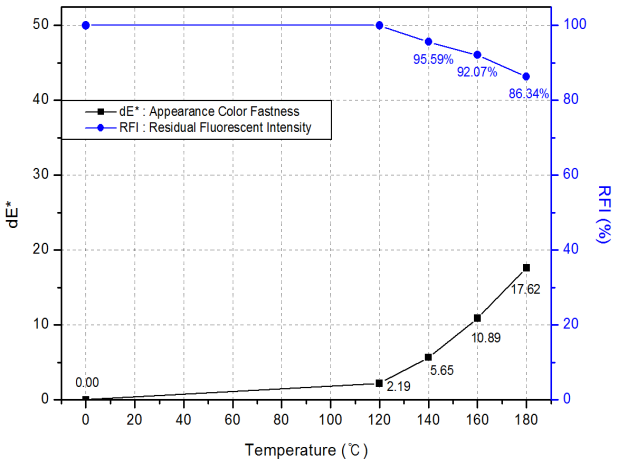
2018-10-11

Thermal stability test

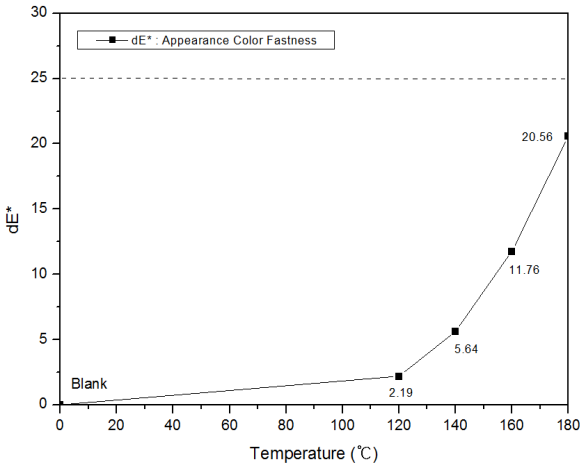
(determined on 20% film by Visual Check or Color Difference Meter, PL Spectrometer)

- Test for Appearance Color Fastness & Residual Fluorescent Intensity

Red 1809



Blank



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Humidity test

(determined on 20% film by Visual Check or Color Difference Meter, PL Spectrometer)

- Test for Appearance Color Fastness at 100hr – *Gray Scale (Color Staining)*

Product name	Red 1809
Gray Scale (Color Staining) (1-5) at 100hr	2.5-3

* Gray Scale (Color Staining) = 5: dE*0.00, 4.5: dE*3.36, 4: dE*5.40, 3.5: dE*7.14, 3: dE*13.65, 2.5: dE*18.25, 2: dE*23.56, 1.5: dE*29.33, 1: dE* 34.28

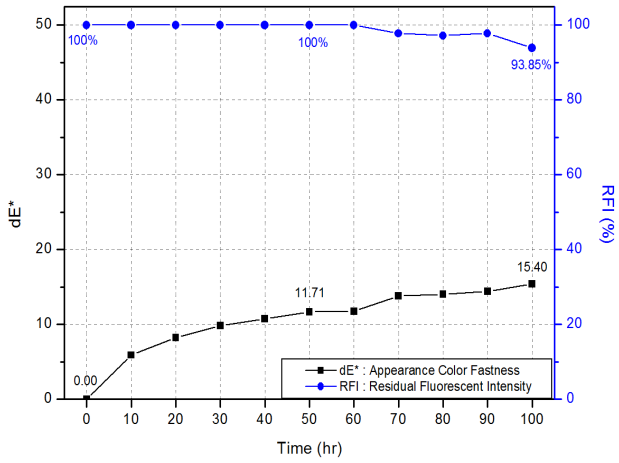
- Test for Fluorescence Fading at 100hr - *Function Class (Residual Fluorescent Intensity)*

Product name	Red 1809
Function Class (1-5) at 100hr	5

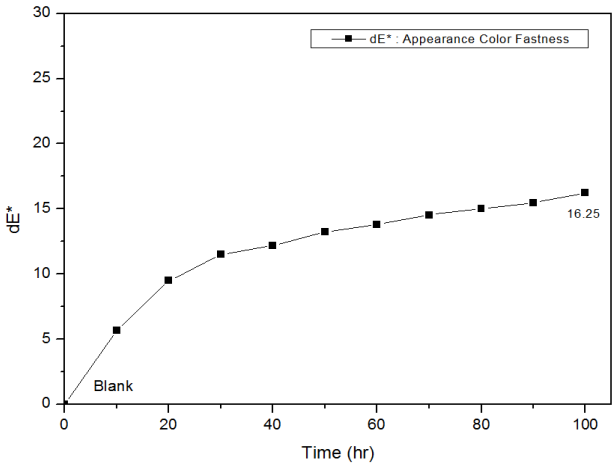
* Function Class = 5: 100-81%, 4: 80-61%, 3: 60-41%, 2: 40-21%, 1: 20-1%

- Test for Appearance Color Fastness & Residual Fluorescent Intensity

Red 1809



Blank



* Temperature 80℃, Relative humidity 80% (model: Jeio Tech, TH-G-180)

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