PHOTOLUMINESCENT PIGMENT COMPONENT PROPERTIES

Product Name: NLP/YG/.../B/...,

Free from radioactive additives

Test classification: radioactive free

Free from heavy metals

HEAVY METALS	MAX. CONTENT IN PIGMENT	European Union limit for food packaging	USA & EU limit for toys	EU Limit for finger paint
Antimony (Sb)	< 2 ppm	500 ppm	60 ppm	10 ppm
Arsenic (As)	< 2 ppm	100 ppm	25 ppm	10 ppm
Barium (Ba)	25 ppm	100 ppm	1000 ppm	350 ppm
Cadmium (Cd)	< 2 ppm	100 ppm	75 ppm	15 ppm
Chromium (Cr)	< 2 ppm	1000 ppm	60 ppm	25 ppm
Lead (Pb)	2.8 ppm	100 ppm	90 ppm	25 ppm
Mercury (Hg)	< 2 ppm	50 ppm	60 ppm	10 ppm
Selenium (Se)	< 2 ppm	100 ppm	500 ppm	50 ppm

TEST ITEM	PIGMENT SAMPLE	USA Limit for Toys
Total Lead	0.003%	0.060%

Acute toxicity - oral (rat)
Test result: non=toxic. LD50 > 10 g/kg

Acute toxicity - dermal (rabbit)
Test result: non=toxic. LD50 > 20 g/kg

No eye irritation (rabbit)
Test result: No other toxicity effects identified

Issued:
06-20-2006

All statements, information and data given herein are believed to be accurate and reliable but are presented without guaranty, warranty or responsibility of any kind, expressed or implied. The user should not assume that all safety measures are indicated or that other measures may not be required.

The information herein specifically pertains to all Lucedentro products offered by Core Glow. The data pertaining to photoluminescent pigments is applicable to all products made with photoluminescent Alkaline Earth Aluminates, and the testing data is acquired from Lucedentro. Core Glow will provide this information as educational material for those requiring technical data on photoluminescent pigments. For more information refer to liability information below.

YELLOW GREEN PIGMENT GENERAL DATA SHEET

DESCRIPTION

NLP - YG	non-radioactive, non-toxic, long afterglow luminescent inorganic pigment
Composition	Alkaline Earth Aluminates

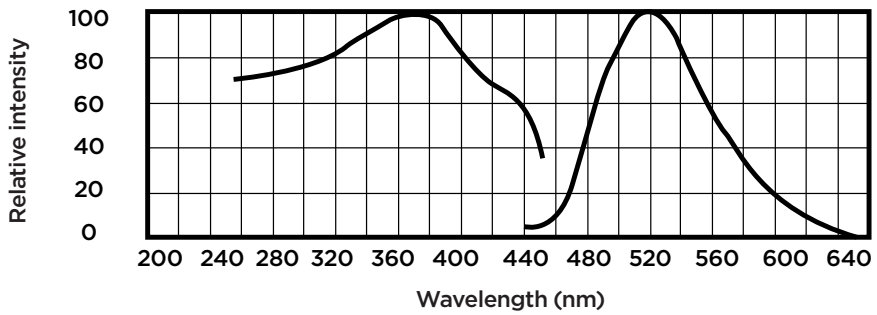
PRINCIPAL CHARACTERISTICS

Charge time	approx. 40 seconds (direct sunlight) or 1-30 minutes under daylight, UV and white light more than 20 hrs (not recommended)
Afterglow time	40 - 60 minutes supercharge, 8-12 hours ambient glow
Compatibility	compatible with various transparent or semi-transparent media
Stability	excellent physical and chemical stability
Form	solid powder
Color	yellow-green

BASIC DATA at 20˚C

Mass Density	approx. 3.6-3.8g/cm3
Particle Size	5 µm, 15-20 µm, 20-30 µm, 30-45µm, 40-65 µm, 70-80 µm, 240-320 µm
Insoluble in	alkaline, organic solvents
Decomposition by	water, acids (recommended to use pre-made products to prevent decomposition.)

EXCITATION (LEFT) AND PHOSPHORESCENCE SPECTRA (RIGHT)



Color of Phosphorescence	yellow green
Excitation Spectra	λmax/nm = 370 nm
Phosphorescence spectra	λmax/nm = 370 nm
Product Data Sheet	Issued 06/24/2004 Revised 03-20-2006

BRIGHTNESS REPORT

According to DIN67510 standard,

Test results of luminous intensity are the following:

(mcd/m2)

Product No.	Color	Particle size (Qm)	1 min	10 min	30 min	60 min	Afterglow time (mins)
NLP/YG/05/B/0/1	Yellow Green	4-5	1223	178	59	34	
NLP/YG/20/B/0/1	Yellow Green	15-20	2546	382	140	57	8150
NLP/YG/30/B/0/1	Yellow Green	20-30	2750	405	161	63	8655
NLP/YG/45/B/0/1	Yellow Green	30-45	3160	495	197	79	9910
NLP/YG/65/B/0/1	Yellow Green	40-65	3692	582	222	91	11910
NLP/YG/80/B/0/1	Yellow Green	70-80	3812	602	245	95	11989
NLP/LB/45/B/0/1	Light Blue	30-45	920	180	75	27	2678
NLP/LB/65/B/0/1	Light Blue	40-65	1820	346	116	45	2801
NLP/LB/80/B/0/1	Light Blue	70-80	2004	380	121	57	2980
NLP/YG/20/B/0/2	Yellow Green	15-20	1880	301	102	47	6875
NLP/YG/30/B/0/2	Yellow Green	20-30	2010	325	106	51	7425
NLP/YG/45/B/0/2	Yellow Green	30-45	2466	381	113.7	58	8098
NLP/YG/65/B/0/2	Yellow Green	40-65	2682	528	183	71	9810
NLP/YG/80/B/0/2	Yellow Green	70-80	2910	558	205	76	9970

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