IDENFOIL SAFETY

# TECHNICAL DOCUMENTATION 2014

for Photoluminscent Materials

IDENFOIL SAFETY

# TECHNICAL DATA SHEET

| | |
|---|---|
| Product Description: | Photoluminescent PVC rigid sheet |
| Application Scopes: | Photoluminescent PVC rigid sheet can be cut into different shapes, printed through silk-screen techniques or digital flatbed and made into fire safety markings of all kinds. |
| Model: | MH-B-G150 |
| Material: | PVC resin, photoluminescent pigment |

Typical physical properties:

| | |
|---|---|
| Appearance: | Light yellow |
| Glowing Color: | Yellow-Green |
| Weight: | 1.7kg/sqm |
| Size: | Thickness: 1.1mm; 1m*1.2m each sheet |
| Tensile Strength: | ≥35mpa |

Glow properties:

Measurement according to DIN 67510 part 1

| | | |
|---|---|---|
| Afterglow intensity after | 10min | >100 mcd/$m^2$ |
| | 60min | >10 mcd/$m^2$ |
| | Decay time: | 1200 min |

Storage:

Storage: stored in ventilated, dry, and cool warehouse at an ambient temperature of 10-40°C.

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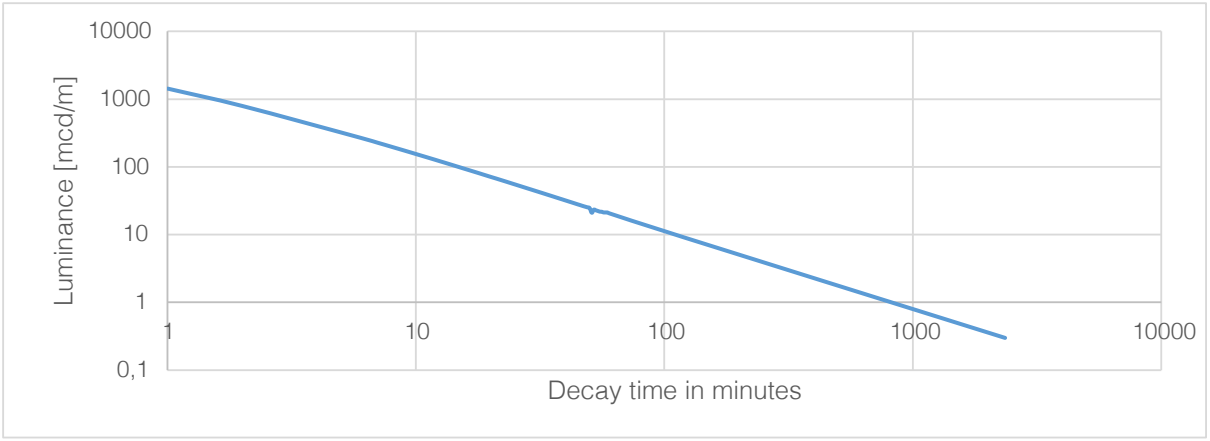
| | |
|---|---|
| Measuring Protocol no: | 1 |
| Product Designation: | PVC SHEET |
| Article/Sample.: | MH-B-G150 |
| Type of material: | |
| Type of lighting source: | |
| Illuminance on sample: | E = 999.7 lx |
| Filename: | BG150.100 |
| Measurement performance: | |
| Date: | |
| Temperature: | 20°C |
| Period of conditioning: | |
| Size of measuring field: | |
| Starttime: | 14:09 |

# Measurement according to DIN 67 510 Part 1

| | | | |
|---|---|---|---|
| Luminance after 2 | minutes: | 790 | mcd/m |
| Luminance after 10 | minutes: | 154,6 | mcd/m |
| Luminance after 30 | minutes: | 44,7 | mcd/m |
| Luminance after 60 | minutes: | 20,6 | mcd/m |
| Luminance after 120 | minutes: | 9,1 | mcd/m evaluated from readings >= 15 minutes |
| Luminance after 2353 | minutes: | 0,3 | mcd/mevaluated from readings >= 15 minutes(decay time) |

# Afterglowing characteristics: 790/ 154,6 / 20,6 – 2353

| min | mcd/ min | min | mcd/ min | min | mcd/ min | min | mcd/ min | min | mcd/ min | min | mcd/ min | min | mcd/ min |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1427 | 13 | 115,7 | 22 | 63,85 | 31 | 43 | 40 | 31,95 | 49 | 25,29 | 59 | 21,24 |
| 2 | 790 | 14 | 106,5 | 23 | 60,68 | 32 | 41,45 | 41 | 31,04 | 50 | 24,68 | 60 | 20,64 |
| 6 | 267,5 | 15 | 98,5 | 24 | 57,78 | 33 | 39,99 | 42 | 30,18 | 51 | 21,01 | 120 | 9,1 |
| 7 | 227,4 | 16 | 91,6 | 25 | 55,13 | 34 | 38,62 | 43 | 29,36 | 52 | 23,4 | 2353 | 0,3 |
| 8 | 197 | 17 | 85,6 | 26 | 52,69 | 35 | 37,35 | 44 | 28,58 | 53 | 22,85 | | |
| 9 | 173,5 | 18 | 80,2 | 27 | 50,45 | 36 | 36,14 | 45 | 27,84 | 54 | 22,34 | | |
| 10 | 154,6 | 19 | 75,4 | 28 | 48,36 | 37 | 35 | 46 | 27,13 | 55 | 21,85 | | |
| 11 | 139,3 | 20 | 71,1 | 29 | 46,44 | 38 | 33,92 | 47 | 26,45 | 56 | 21,74 | | |
| 12 | 126,5 | 21 | 67,34 | 30 | 44,66 | 39 | 32,91 | 48 | 25,85 | 57 | 21,25 | | |




Measuring device: Photometer 11B247 Manufacturer: LMT lichtmesstechnik GmbH Berlin Type: B 520

# VP 1587
Luminous Film

## Description

### Advantages
- Rechargeable ”glow in the dark” signs and markings.
- Two available versions VP 1587-30 and VP-1587-50 with different luminance levels.
- Dimensionally stable, durable, multilayer film.
- Excellent chemical and stain resistance.
- Easily cleaned with 3M Citrus Base Cleaner (3M ID 62-4615-4930-5).
- No heavy metals or radioactive materials used in the manufactue of this product.
- May be safely disposed o in a sanitary landfill or by incineration.

### Application and End Uses
Primarily intended for marking interior ”glow in the dark” signs and markings, including safety signage in buildings, ships, ferries, railroads.

### Limitations of End Users
3M™ Luminous Film VP 1587 is not intended or warranted for the following:
- Application surfaces subjected to gasoline spills and vapors
- Application to complex curved surfaces, corucated surfaces or riveted surfaces.

### Compatible Products
The following products can be used with VP 1587 luminous film:
- 3M™ ScotchliteTM Diamond GradeTM VIP Reflective Sheeting Series 3990
- 3M™ ScotchcalTM Film Series 100, 180, 3630, 3650, 3690
- 3M™ Application Prespacing Tape SCPS-2 and SCPS-100
- 3M™ ScotchcalTM Printing Inks: 1900 series

## Characteristics

| Property | Description |
|---|---|
| Visual Appearance | Glossy appearance, light yellow green color |
| Adhesive | Permanent pressure sensitive |
| Application surfaces | Flat, simple curved surfaces |
| Luminance (per DIN 67510 Part 4) | Exceeds luminance requirements specified in DIN 67510 Part 4 (valid for VP 1587-30 and VP 1587-50) |
| Application temperature range | 10°C to 38°C |
| Thickness (film and adhesive) | 0.2 - 0.22 mm |
| Service temperature range | -34° to 90°C |
| Applied shrinkage (FTM 14) | < 0.8 mm |

Note: ISO refers to standards of the International Standards Organization. FTM (Finat Test Methods) refers to test method listed by Finat, the Association of European Tape Manufactures.

## Effective Performance Life

The durability of 3M™ Luminous Film VP 1587 depends on the following:
- Selection and preparation of the substrate
- Application methods
- Cleaning methods

### Warranted Durability
10 years warranty for interior applications (without direct exposure to sunlight).

# Cutting

| CAUTION |
| --- |
| When using any equipment, always follow the manufacturers' instructions for safe operation. |

The accepted cutting methods for 3M™ Luminous Film VP 1587 are bandsaw, guillotine, hand cut, die cut, and flatbed eclectronic cutter.

# Application

Apply 3M™ Luminous Film VP 1587 like any other 3M pressure sensitive film. The application temperature range for both the air and substrate is 10°C to 38°C.

# Removal

3M™ Luminous Film VP 1587 has an aggresive, pressure sensitive adhesive. The use of a heat gun or steam cleaner will aid in removal. 3M™ Citrus base Cleaner is recommended for the removal of adhesive from substrates.

# Luminance Characteristics

The afterglow of luminous film degrades with time once the charging source is removed. This characteristics must be taken into account when designing and locating signs and markings. The amount of afterglow visibility (luminance level) depends upon the observation conditions sich as ambient light, observer, etc. Typical afterglow (luminance) values for luminance film are:

| DIN 67510 Part 4 | | |
| --- | --- | --- |
| VP 1587-30 | | |
| Elapsed Time (Minutes) | Luminance Specification (mcm/m$^2$) | Typical Luminance (mcm/m$^2$) |
| 10 | 20 | 30 |
| 60 | 2.8 | 8 |

| DIN 67510 Part 4 | | |
| --- | --- | --- |
| VP 1587-50 | | |
| Elapsed Time (Minutes) | Luminance Specification (mcm/m$^2$) | Typical Luminance (mcm/m$^2$) |
| 10 | 20 | 50 |
| 60 | 2.8 | 8 |

## Chemical Characteristics:

- Resists mild acids, mild alkalis, and salt spray.
- Excellent water resistance

## Shelf Life, Shipping and Storage

Follow these guidelines to store and ship this film and the processed graphics.

- The combined shelf life as processed and unprocessed film cannot exceed 2 years from the date you receive the film. However, the film must be used within one year of processing even if the combined shelt life is less then 2 years.
- Store the film in a clean, dry area out of the direct sunlight and at less then 35°C.
- Ship the finished graphic lying flat or roll it. To roll the graphic, wrap it film-side out onto a core that is 127 mm or larger in diameter. These methods prevent the liner from wrinkling or popping off.

# Important Notice

This bulletin provides technical information only.

All questions of warranty and liability relating th this product are governed by the terms and conditions of the sale, subject, where applicable, to the prevailing law.

Before using, the user must determine the suitability of the product for its required or intended use, and the user assumes all risk and liability whatsoever in connection therewith.

# 3M Related Literature

Listed Below is related 3M technical literature that may be of interest. Contact your local 3M sales or technical representative to order these bulletins.

| Subject | Bulletin |
| --- | --- |
| Instruction Bulletins | |
| Premasking and Prespacing | 4.3 |
| Application | 5.5 |

# For Further Assistance

For help on specific questions relating to 3MTM VP 1587 Luminous Film, or any other 3m Display and Graphics product, contact your local 3M Technical Service representative or

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