UV/Visible/Heat/Activator Curable High Temperature Burnt-Off Mask

PRODUCT DESCRIPTION
Incure Litemask™ 4139 is an easy-to-use UV/Visible Light/LED/Heat Curing mask for temporary protection from chemical cleaning. Very thick in viscosity, it is resistant to many chemicals, it does not affect the masked surfaces before and after cure. Product contains a 100% solids urethane acrylate and does not contain VOCs. The use of 4139 temporary masks help increase productivity and reduce labour content in plating and coating processes in electronics and aerospace industries. Mask can easily be burnt-off at 1200°F.

UNCURED PROPERTIES

Chemical Type: Urethane Acrylate, 100% Solids, No Solvents
Appearance: Single Component, Clear
Density, g/ml: 1.06
Refractive Index: 1.51 @ 20°C
Flash Point, °C: >93
Toxicity: Low (Refer to MSDS)
Viscosity, cp (rpm): 20, 18,000 - 30,000
Spindle: 6

Other viscosities are available upon request. If the viscosity range requested is not our standard offering, this product may be produced with a small lab fee.

Email us at: support@uv-incure.com or your nearest local distributor for more information.

ASTM D2555

NOTE
Users should test specific assemblies after subjecting them to sterilisation. Consult Incure Support Team for assistance, if your devices are subjected to more than one sterilization cycles.

Thermal resistance of this product show excellent adhesion and bonding strength after one cycle of steam auto-clave test. Depending on bond design and structure of the application,

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SHELF-LIFE, STORAGE, USE AND HANDLING OF THIS PRODUCT
Shelf-Life of this unopened product is a minimum of SIX (6) months from date of manufacture. Avoid direct exposure of bottle to visible light at all times. Containers should remained covered when not in use. Product should be stored in a dark cool place of 2°C to 20°C. Transfer of product into other packages void all warranties. Users should ensure all bonding materials, unless otherwise specified.

Life of this unopened product is a minimum of SIX (6) months from date of manufacture. Avoid direct exposure of bottle to visible light at all times. Containers should remained covered when not in use. Product should be stored in a dark cool place of 2°C to 20°C. Transfer of product into other packages void all warranties. Users should ensure all bonding materials, unless otherwise specified.

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SECONDARY HEAT CURE SCHEDULE

Continuous Oven Bake
95°C (203°F)
120 mins
110°C (230°F)
60 mins
125°C (257°F)
30 mins

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RECOMMENDED UV CURE SCHEDULE (FULL CURE)

Full Cure Exposure Time | UVA | UVB | UVC | UVV
--- | --- | --- | --- | ---
 Fixture Time between glass slides (1.0mm) | 150 | 43 | 5 | 140
 Exposure time (s) | 1.0 | mJ/cm² | 150 | 43 | 5 | 140
 F200™ @ 2.5” Dist (1.0mm) | 10.0 | mJ/cm² | 150 | 43 | 5 | 140
 Belt Speed (ft/min) | 1.5 | miles/hr | 1,500 | 430 | 50 | 1,400
 F500™ @ 2.5” Dist (1.0mm) | 3.0 | mJ/cm² | 500 | 160 | 15 | 480
 Belt Speed (ft/min) | 1.5 | miles/hr | 1,500 | 480 | 45 | 1,440
 S20™ Spot (4-Pole LG) 0.4” Dist | 3.0 | mJ/cm² | 500 | 300 | 50 | 3,400
 Exposure time (s) | 5.0 | minutes | 15,000 | 2,650 | 250 | 17,000
 L9000™ LED Spotgard@ 0.67” Dist | 2.8 | mJ/cm² | 2,800 | 42 | 12 | 102
 Exposure time (s) | 8.0 | minutes | 22,400 | 336 | 96 | 816

Core times on dem in adhesive sample. Belt speeds using C9000-F200P™ (Focused) and C9000-F500x1A/C (Focused Beam) conveyors for area curing.

Please consult IncureLab™ for any other requirements.

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UV INTENSITY REFERENCE TABLE

UV Intensity Lamp Model | Curing Distance vs UV Intensity | UV Intensity (mW/cm²)
--- | --- | ---
 Spot Curing (s mm) | 0.6” (16) | 1” (25) | 1.5” (38) | 2” (56) | 2.5” (63.5) | 3” (76.2)
 S20™ ARC (mm/cm²) / (s mm) | 1,400 (3) | 1,500 (4) | 650 (6) | 360 (8) | 240 (10) | 175 (12)
 L9000™ LED (mm/cm²) / (s mm) | 7,500 (9) | 5,000 (10) | 2,300 (17) | 1,200 (20) | 700 (25) | 450 (30)

Fluorescent Beam - Area Curing: UV Intensity (mW/cm²)
F200™ ARC Flood (6” x 8”) | 325 | 280 | 245 | 215 | 190 | 165
F400™ ARC Flood (4” x 6”) | 860 | 570 | 440 | 345 | 270 | 215
F500™ ARC Focussed (3” x 5”) | 1,040 | 685 | 530 | 415 | 325 | 260
L1044-365™ LED Flood (4” x 4”) | 2,675 | 2,380 | 1,900 | 1,625 | 1,430 | 1,280
L1044-450™ LED Flood (4” x 4”) | 2,950 | 2,625 | 2,150 | 1,900 | 1,650 | 1,450

* Curing Distance is determined by the tip of photoguide or base of lamp housing to the bond area. All values are nominal with max 10% variation, with LED Flood Static Uniformity at ±78% and Dynamic Uniformity at ±90%. Recommended curing parameters in grey.

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Summary of Curing Parameters

| Waveband | Wavelength (nm) | UVA (320 -400nm) | UVB (290-320nm) | UVC (200-280nm) | VUV (400-700nm)
--- | --- | --- | --- | --- | ---
Minimum Intensity | 150 mW/cm² | 43 mW/cm² | 5 mW/cm² | 140 mW/cm² | 1,400 mW/cm²
Total Energy Required | 1,500 mJ/cm² | 430 mJ/cm² | 50 mJ/cm² | 1,400 mJ/cm²

TECHNICAL SPECIFICATION

| Parameter | Value |
--- | ---
| Shelf Life | 12 months |
| Storage | 2°C to 20°C |
| Application | Before repetitive use, using this data as a guide. |
| Product Type | UV/Visible/Heat/Activator Curable High Temperature Burnt-Off Mask |
| Use | For temporary protection from chemical cleaning |
| Characteristics | 100% solids, low viscosity, fast curing |
| Application | Before repetitive use, using this data as a guide. |
| Storage | 2°C to 20°C |
| Maximum Water Absorption | 0.5% |
| Chemical Resistance | To most organic solvents |
| Shelf Life | 12 months |
| Storage | 2°C to 20°C |
| Application | Before repetitive use, using this data as a guide. |
| Storage | 2°C to 20°C |

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E10 AND GAMMA STERILIZATION (Not Applicable for this Product)

All Incure medical products are formulated to subject to standard sterilization methods, such as E10 and Gamma Radiation of 25 to 50 kGy (cumulative). Enhanced moisture and thermal resistance of this product show excellent adhesion and bonding strength after one cycle of steam autoclave test. Depending on bond design and structure of the application, users should test specific assemblies after subjecting them to sterilisation. Consult Incure Support Team for assistance, if your devices are subjected to more than one sterilization cycles.

NOTE
The data contained in this document are furnished for information only. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user’s responsibility to determine suitability for the user’s purpose of any production methods mentioned herein. INCURE will not be liable for any indirect, special, incidental or consequential loss or damage arising from this INCURE product, regardless of the legal theory asserted. INCURE recommends that each user adequately test its proposed use and application before repetitive use, using this data as a guide.

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Product design by IncureLab™