

## SpeedMask<sup>®</sup> Masking Resins

### PRODUCT SELECTOR GUIDE

aerospace & defense

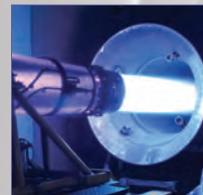
power generation

orthopaedic implants

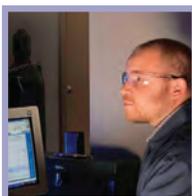
metal finishing

pcb assemblies

surgical instruments



# Our Technology. **YOUR ADVANTAGE.**<sup>®</sup>



**solutions**

**Products. Technology. Service.**  
**Dymax provides the innovative solutions you need to meet your application challenges.**

**expertise**



At Dymax, we combine our product offering with our expert knowledge of light-cure technology. Where others only supply products, we are committed to developing a true collaborative partnership, bringing our total process knowledge to our customer's specific application challenges. Because we understand the process as a whole, and not just individual aspects of it, we can offer our customers a solution where chemistry and equipment work seamlessly together with maximum efficiency. Our solutions help our customers lower costs, increase process efficiency, and become more profitable, giving them a competitive advantage they can't get anywhere else.

# About **DYMAX**

Dymax Corporation is an ISO 9001 registered leading manufacturer of light-curable adhesives, coatings, oligomers, light-curing equipment, and fluid dispense systems that work together to optimize assembly processes. Dymax products provide design, research, and manufacturing engineers value-added tools to dramatically improve manufacturing efficiency and lower costs

The company's first products, a patented line of structural adhesives that combined high bond strength with fast fixture speed, offered significant productivity improvement to manufacturers of electric motors and were widely used in OEM and manufacturing environments.

Dymax continued to create formulations that offered faster processing speeds for a large segment of the industrial market. This eventually led to the development of light-cure adhesive technology and the compatible fluid dispensing and light-curing systems needed to dispense and cure the products.

Today, Dymax light-curable materials cure in seconds upon exposure to UV/Visible light, form high-strength, environmentally resistant bonds to glass, metal, and plastic substrates, and are ideal for bonding dissimilar materials. Dymax also manufactures light-curable form-in-place gaskets, SpeedMask® removable masking resins, and coatings. Formulations with activators and secondary heat or moisture cure are also available. Dymax supplies these products to the automotive, aerospace, appliance, alternative energy, electronic, industrial, medical device, and optical industries worldwide.

Since pioneering light-cure technology over 30 years ago, Dymax has continued to develop innovative ways to co-optimize the assembly process with customer-centric solutions that meet today's application challenges. Dymax owns over 30 patents and has a worldwide network of technical experts who understand manufacturers' demands and assist them with adhesive selection, dispensing options, curing recommendations, component design, and process validation. The result of this collaboration is faster, more reliable processing, less energy consumption, and lower production costs.

The company's headquarters are located in Torrington, CT USA, with additional facilities in the USA, Germany, Ireland, China, Hong Kong, Korea, and Singapore.



**technology**



**technical  
consulting**

# SpeedMask® Process & Products

Click on the product numbers for more information.

Product Name	Chemistry	Characteristics	Viscosity, cP (20 rpm) Nominal	Uncured Appearance	Durometer Hardness	Elongation @ Break, %	Modulus of Elasticity, MPa [psi]	Cure Time* (Seconds)	Removal Options
706	UV	High adhesion; excellent surface and cavity protection; hard/durable; chemical resistance	43,000	Colorless Gel	D75	6.2	830 [120,000]	40	Incineration
707	UV	Prevents beam impingement; secondary heat cure for shadowed areas; reduces spatter; hard/durable	500	Colorless Gel	D70	71	270 [39,000]	1	Incineration
718	UV/Visible	High adhesion; resists flame spray processes; excellent surface and cavity protection during APS and HVOF	50,000	White Paste	D80	3.4	1,056 [153,278]	30	Incineration
724	UV/Visible	Good surface protection; fast curing; easy peel off	70,000	Colorless Gel	D40	200	2.7 [390]	15	Incineration
726-SC	UV/Visible	Transitions from blue to pink upon sufficient exposure to light energy; excellent surface protection; easy peel off after heat exposure; spray or dip	45,000	Blue Gel	D40	160	3.9 [560]	8	Peelable
728-G	UV/Visible	High adhesion; excellent surface protection to aggressive chemical processes; easy removal after hot-water soak; sprayable	25,000	Green/Blue Gel	D55	230	83 [12,000]	10	Peelable or Incineration
728-G-LV	UV/Visible	High adhesion; excellent surface protection to aggressive chemical processes; spray or dip	2,500	Green/Blue Gel	D50	260	293 [42,500]	17	Peelable or Incineration
730-BT	UV/Visible	Excellent chemical resistance; spray or dip; trimmable after cure; easy peel off; ISO 10933-5	22,000	Blue Gel	D35	300	3.4 [500]	4	Peelable or Incineration
731-REV-A	UV/Visible	Excellent surface protection; sprayable; easy peel after hot-water soak; high adhesion	18,000	Bright Yellow Gel	D50	500	86 [12,600]	40	Peelable or Incineration
733-G-REV-A	UV/Visible	Excellent surface protection; sprayable; fast curing; easy peel off	25,000	Green Gel	D42	294	193 [27,960]	10	Peelable or Incineration
734-BT	UV/Visible	Excellent surface protection and chemical resistance; moderate adhesion; spray or dip; trimmable after cure	24,000	Blue Gel	D25	220	5.5 [800]	5	Peelable or Incineration
740-BT	UV/Visible	Low-medium adhesion; compatible with MEK-based and heat-cure paint	45,000	Blue Gel	A65	203	2.42 [350]	35	Peelable or Incineration
750	UV/Visible	High adhesion; cures tack free; hard and durable; resilient to blast media	30,000	Translucent Pink Gel	A50	140	2.5 [370]	45	Peelable or Incineration
750-SC	UV/Visible	Turns purple to pink after sufficient exposure to UV/Visible light; sprayable; high adhesion	30,000	Translucent Purple Gel	A85	140	4.4 [640]	10	Peelable or Incineration
7501-T-UR-SC	UV/Visible	Turns blue to colorless after sufficient exposure to UV/Visible light; fast rate of cure; optimized to cure with 385 or 405 nm LED; red fluorescing	6,500	Translucent Blue Gel	D70	125	296 [43,000]	10	N/A
7701	UV/Visible	For metal finishing; flexible after heat exposure; low-medium adhesion; spray or dip	45,000	Colorless	D30	225	7.6 [1,100]	1	Peelable
9-20479-B-REV-A	UV/Visible	Exceptionally thixotropic for manual or automated dispense; compatible with gold and copper pins	115,000	Translucent Blue Gel	A75	140	4.13 [600]	60	Peelable
9-318-F	UV/Visible	Medium adhesion; blue fluorescing; highly thixotropic for manual or automated dispense	50,000	Translucent Yellow	A55	130	2 [310]	1	Peelable
9-7001	UV/Visible	Compatible with gold and copper pins; lower shrinkage; non-slumping; resistant to solvent-based conformal coatings and primers	40,000	Translucent Pink Gel	A70	180	1.9 [275]	3	Peelable

\*\*Cure time based upon Dymax 5000-EC Light-Curing Flood Lamp (200 mW/cm<sup>2</sup>)

# SELECTOR GUIDE

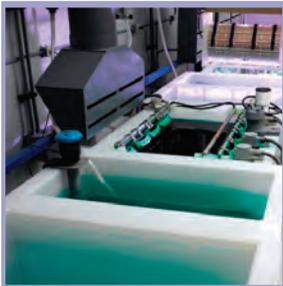
Chemical Processes				Coatings			Media Finishing			Manufacturing Aids				PCB Processes	
Anodizing	Plating	Acid Stripping	Chemical Etching	Air Plasma Spray	HVOF	Painting & Powder Coatings	Grit Blasting	Shot Peening	Vibratory Finishing	Machining	Buffing/Polishing	Airflow Testing	Laser Drilling	Conformal Coating	Wave Solder/Reflow
		X		X						X					
													X		
				X	X (limited)										
						X	X	X				X			
	X		X (decorative etching)	X		X	X	X							
	X	X					X	X	X	X	X				
	X	X					X	X	X	X	X				
X	X		X				X	X							
									X						
				X	X (limited)		X								
X	X	X	X	X	X (limited)		X	X	X		X				
						X									
				X	X (limited)		X		X	X					
X	X			X	X (limited)		X								
X	X					X	X	X							
														X (light-cure)	X
														X (light-cure)	X
														X (solvent based)	X

# SpeedMask®

# PROCESS GUIDE

SpeedMask® Maskants offer the following advantages over traditional masking methods:

- Apply and cure in seconds
- Residue-free surfaces after proper curing
- Reliable protection for complex and intricate configuration
- No additional investment for design changes or new components
- Superior protection with a single coat
- Masked components are immediately ready for production



## Anodizing

Anodizing masks feature chemical resistance for better surface protection of components from the strong acids used in the anodizing process. Cured SpeedMask maskants protect the substrate surface while the oxide layer of coating (which changes the microscopic texture of the component surface) is applied. These materials can tolerate most Type I (Chromic Acid), Type II (Sulfuric Acid), or Type III (Hard coat) anodizing processes.

## Plating

Plating masks feature chemical and heat resistance and provide superior surface protection of components during plating processes where particles are deposited onto conductive surfaces. SpeedMask maskants are able to withstand the most common plating processes such as Electroless Nickel (Ni), Platinum (Pt), Chrome (Cr), Gold (Au), Silver (Ag), and Copper (Cu). Plating masks are available in low, moderate, and high levels of adhesion to accommodate the various operating temperatures of plating baths.

## Acid Stripping

Acid stripping masks withstand soaking in hot acid without permeation or seepage under the mask. When cured, SpeedMask maskants provide superior surface protection from chemical processing of nickel super alloys, steel, and titanium. They hold up to the surface preparation of grit blasting, which may be required prior to, or in combination with, the hot-acid soak. These masking resins can tolerate most acid soaks such as Hydrochloric (HCl), Nitric (HNO<sub>3</sub>), Acetic (CH<sub>3</sub>COOH), Phosphoric (H<sub>3</sub>PO<sub>4</sub>), Hydrofluoric (HF) or various combinations of the acids.

## Chemical Milling/Etching

Chemical milling masks have enhanced chemical resistance and superior surface protection from the strong acids and alkalis used in dissolving metal substrates during the chemical milling process. Cured SpeedMask maskants can be trimmed to provide defined edge boundaries and accommodate the most complex and intricate components, while still providing excellent protection with no leakage. These resins withstand the typical 200°F+ Nitric Acid (HNO<sub>3</sub>) and Hydrofluoric Acid (HF) solution used for the chemical milling of titanium components and typical Sodium Hydroxide (NaOH) and Potassium Hydroxide (KOH) solutions used for the chemical milling of aluminum components.

SpeedMask® light-curable temporary maskants provide reliable protection of component surfaces and cavities, PCB connectors, and keep out areas during surface finishing and preparation operations for metal, glass, and some plastics, as well as conformal coating of PCBs. They cure in seconds upon exposure to UV/Visible light and replace traditional masking materials, such as tapes, lacquers, waxes, boots, and caps.

Light-curable maskants are used successfully in many industries, including aerospace and defense, power generation, metal finishing, and the manufacturing of orthopaedic implants, medical devices, and consumer electronics. SpeedMask resins are easily applied by syringe or through dipping, spraying, or screen-printing, and are available in peelable or burn-off grades that leave component surfaces residue-free.

### **Air Plasma Spray and HVOF**

Air plasma spray masks provide superior surface protection during thermal barrier coating processes. SpeedMask maskants are resistant to the aggressive force and heat of flame-spray processes. The cured masks absorb the energy from the force of plasma spray materials, such as zirconium, Molybdenum (used for thermal protection), Tungsten Carbide, or ceramics used for wear-resistant coatings. As the melted particles from the flame spray are deposited onto the substrate, the cured masking resin protects the surface underneath the protected area.

### **Painting, e-Coating, and Powder Coatings**

SpeedMask maskants offer superior surface protection of components during painting, e-coating, and powder coating, and are resistant to the heat and chemical exposure during these processes.

### **Grit Blasting**

Grit-blasting masks are resilient to both smooth and sharp particles and the pressure used during grit-blasting surface treatment. Cured SpeedMask maskants provide reliable protection from media such as aluminum oxide, garnet, plastics, and organic media. The cured resin absorbs the energy from the air stream blast, while the media bounces off the masked surface, protecting the area underneath.

### **Shot Peening**

Shot-peening masks have superior surface protection during the shot-peening, plastic-deformation surface-treatment process. Cured SpeedMask maskants are resistant to various peening media (such as cut wire, round metal, ceramic particles, and glass beads) and the pressures used in peening applications. The cured resin absorbs the energy from the ball-peen hammer effect of the media blast, while the media bounces off the masked surface, protecting the area underneath.

### **Vibratory Finishing**

SpeedMask maskants provide reliable surface protection of intricate and complex configurations during vibratory finishing operations such as slurry, tumbling, or deburring. These masks withstand the compound solution (soap, water, or alternative cleaning/polishing agents) and abrasion from ceramic, plastic, or steel media while vibrating during the finishing process.

### **Machining**

Machining, buffing/polishing, and laser drilling masks provide excellent protection during the milling, grinding, drilling, polishing, and turning of turbine and metal components, orthopaedic implants, surgical instruments, medical devices, as well as glass and plastic substrates. The durability of the cured SpeedMask maskants allow the maskants to be machined through, without any lifting of the remaining masks, while continuing to provide reliable protection of the masked surfaces. These maskants can withstand various water-soluble and oil-based coolants used in machining, as well as absorbing the energy from laser drilling during the installation of cooling holes.

### **Airflow Testing**

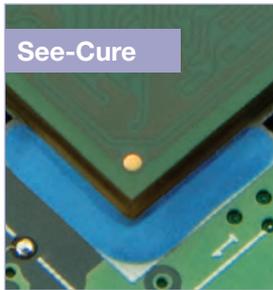
When cured, SpeedMask airflow-testing masks allow for complete sealing of cooling holes and core cavities of turbines and other components, for either row-by-row or mass airflow testing. They also provide complete sealing, preventing air leaks during pressurized flow, leak, and duration testing.

### **Conformal Coating**

SpeedMask PCB maskants provide circuit board protection during conformal coating, wave solder, and reflow processes. SpeedMask is compatible with gold and copper connector pins. The masks are peelable for easy removal and resistant to UV and solvated conformal coatings.



# Innovative Technologies



See-Cure

## Patented See-Cure Technology

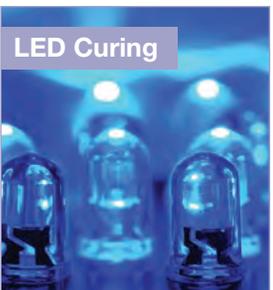
Dymax adhesives formulated with patented See-Cure technology answer the two most asked questions in an adhesive bonding application: Have I dispensed a sufficient amount of adhesive onto my substrate? Has the adhesive cured completely? Uncured See-Cure adhesives are bright blue in color. This makes them easy to see after dispensing onto the substrate. During the light-curing process, the blue color transitions to colorless, indicating that sufficient energy was received by the adhesive to complete the curing process. This visual cure indicator may initially be used to qualify a process and then to ensure that the process remains within the qualified parameters.



Ultra-Red®

## Ultra-Red® Fluorescing Technology

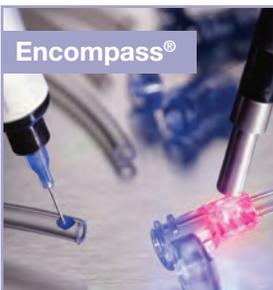
Patented Ultra-Red® fluorescing technology enhances adhesive bond-line inspection processes and product authentication. Adhesives formulated with Ultra-Red technology remain clear until exposed to low-intensity UV light, at which point they fluoresce bright red. This feature is particularly helpful when bonding plastics that naturally fluoresce blue, such as PVC and PET. Since Ultra-Red technology produces a unique spectral signature, manufacturers can also use it for product authentication.



LED Curing

## LED Light-Curing Technology

Dymax manufactures a variety of LED light-curable adhesives and compatible LED UV and visible curing lamps. LED-curable adhesives range from fast to ultra-fast cure speeds to accommodate specific industrial, medical device, and electronic assembly needs. Dymax BlueWave® LED curing systems offer significant advantages over conventional lamp-curing systems including cooler curing temperatures, lower intensity degradation over time, more consistent cure results, lower energy consumption, and reduced costs.



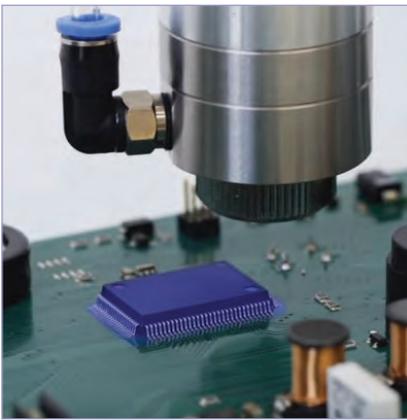
Encompass®

## Encompass® Technology

Materials formulated with Encompass® technology incorporate Dymax exclusive See-Cure color change and Ultra-Red® fluorescing technologies into one light-curable product. As a result, manufacturers gain efficiencies from rapid on-demand curing with easy cure confirmation and post-cure bond-line inspection.

# Dispensing EQUIPMENT

Dymax has developed high-quality, field-proven dispense systems to fit many types of adhesive and fluid dispensing applications. These systems include various automated and manual dispensing valves, spray valves and guns, controllers, material reservoirs, and related components for seamless integration into assembly processes. The systems provide accurate, consistent dispense for a range of low- to high-viscosity fluids. Dispensing systems with adjustable suck-back control and dispensing valves that offer contaminate-free dispensing are available.



## **SD-100 Digital Syringe Dispenser**

This dispensing system is ideal for use as an operator work station and can also be integrated into an automated process if needed. It provides an accurate way to dispense low-to-high viscosity materials from a syringe. The system is easy to set up and operate.

## **eco-PEN450 Dosing System**

The eco-PEN 450 is ideally suited for dispensing very precise volumes of low- to medium-viscosity materials. It offers maximum volumetric precision for both dot and bead applications, making it an excellent choice for masking components on PCB boards or other small-area applications.



## **eco-SPRAY Precision Micro-spray System**

This microspray system is excellent for a wide range of applications and for use with a variety of low- to high-viscosity spray media. Users can achieve a variety of spray volumes, from dot to endless spraying.

## **SG-200 Super-Flow Spray Gun System**

Dymax SG-200 super-flow spray gun systems are designed for masking and coating applications where a significantly higher flow rate is required. The systems are ideal for dispensing fluids with viscosities up to 80,000 cP. If you are manually masking a large area, this is a great option.



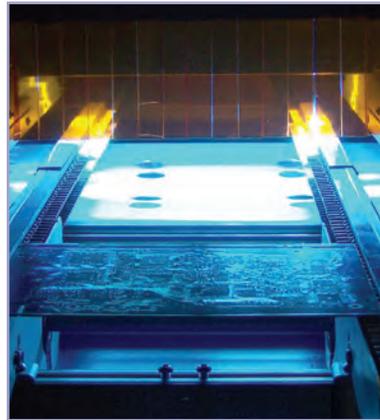
## **Model 400 Handheld Needle Valve System**

The Model 400 needle valve is designed for dispensing very precise dots or fine beads of low- to medium-viscosity materials. The valve is handheld but is compact and lightweight, making it easy and comfortable to handle.

# Light-Curing EQUIPMENT

## CONVEYOR SYSTEMS

Conveyor systems consist of a moving belt that passes through a curing tunnel with multi-spectrum lamps mounted above or on each side for rapid curing of parts. These conveyor systems are designed to offer consistent, fast, and safe curing. They can be outfitted with standard metal halide (longwave UV), mercury (shortwave UV), visible bulbs, or LED flood arrays. Consistent line speed, lamp height, and intensity provide a consistent light-curing process for high throughput.



### WIDECURE® Conveyor System

- 24" curing width for processing larger parts
- Line speeds from 4-30 feet per minute, adjustable in 0.1 fpm increments

### Edge-Carry Conveyor System

- Items move through the conveyor on a chain rail instead of a traditional mesh belt
- Ideal for curing low profile parts such as PCBs
- Chain rail is adjustable, accommodating part widths up to 12"

### UVCS Conveyor Systems

- Left, right, and top curing capability with 6"- or 12"-width cure area
- Available in a wide range of configurations with UV broad-spectrum or LED flood lamps

CONVEYORS | FLOODS | SPOTS | RADIOMETERS

Dymax designs and manufactures a wide range of curing equipment including spot lamps, flood lamps, and conveyor systems, as well as radiometers and other accessories. Dymax systems are optimized to work with light-curable adhesives to gain process efficiencies by targeting rapid surface curing, depth of cure, and speed of cure, all while delivering light in a rapid and economical way. CE marked equipment is available.

## SPOT LAMPS

Spot lamps provide a variety of methods to deliver light to a very precise location. They can be used manually by an operator or incorporated into a high-speed automated assembly line. Dymax offers multi-spectrum light-emitting lamps which use high-pressure mercury vapor bulbs, as well as light-emitting diode spot lamps, which use an array of surface-mounted LEDs instead of traditional metal halide or mercury bulbs.



### BlueWave® 200

- UV curing with adjustable intensity
- Ideal for fast processing of small curing areas
- Suited for manual or automated processes

### BlueWave® MX-150

- Emitter design for set up flexibility and consistent intensity
- LED curing emitters in 365, 385, and 405 nm
- PLC interface that can be easily incorporated into automated systems

### BlueWave® QX4®

- One controller controls up to four LED heads
- LED heads are available in 365, 385, and 405 nm wavelengths
- PLC interface that can be easily incorporated into automated systems

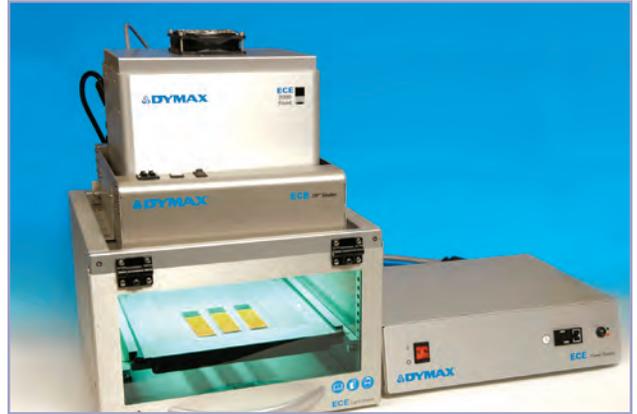
# FLOOD LAMPS

Static flood-lamp systems are suited for area curing or for curing multiple assemblies. Dymax offers UV models which use moderate- to high-intensity, multi-spectrum UV/Visible light and LED models that use light-emitting diodes for fast curing. Dymax flood lamps can be easily integrated into existing manufacturing processes by mounting the lamps above high-speed assembly lines to achieve rapid cures. Shutter assemblies, mounting stands, and shields are available to create a custom curing system.



## EC OR ECE 5000 FLOOD LAMP SYSTEMS

- Most popular and versatile
- Great for curing larger parts
- 5" x 5" curing area with 225 mW/cm<sup>2</sup> initial intensity



## EC or ECE 2000 Flood Lamp Systems

- Flood lamp with the largest cure area (8" x 8")
- Ideal for LED and masking applications
- 105 mW/cm<sup>2</sup> initial intensity

# RADIOMETERS

Measurement of the lamp intensity and dosage is critical to the successful implementation of light-curing technology. Dymax radiometers allow operators to monitor and document a light-curing process.



# Frequently Asked QUESTIONS

## Dispensing

### **Q: Can I flush out a jetting valve with Acetone?**

A: The best choice is to flush a jetting valve with I A. Acetone may leave a residue.

### **Q: Would you recommend a ram pump or pressure pot to dispense masking resins?**

A: We recommend a ram pump for dispensing maskant from 15-liter pails. The ram pump will prevent cavitation.

## Curing

### **Q: Are SpeedMask® resins LED compatible?**

A: Yes. Some SpeedMask resins such as 724, 726-SC, and 728-G are LED compatible. Please refer to the PDS for curing guidelines.

## Application and Product Specific

### **Q: What thickness is recommended for a mask?**

A: 0.015" (0.38 mm) is the recommended minimum thickness for a mask. We suggest that during the product evaluation a few thicknesses be tested to determine the appropriate thickness sufficient to hold up to each process.

### **Q: How do you dispose of cured maskant?**

A: Cured maskant should always be treated in accordance with the local and state regulatory agencies. SpeedMask resins are 100% organic materials and considered to be an industrial plastic after curing. If the maskant has been exposed to plating baths or other chemicals, the user needs to consult their regulatory agency for guidance on disposal.

### **Q: Are there fluorescing versions of SpeedMask®?**

A: Yes, we offer three fluorescing maskants: 731 which fluoresces yellow, 7501-T-UR-SC which fluoresces bright red, and 9-318-F which is blue fluorescing.

## Removal

### **Q: Are there any ways to ease the removal of a cured peelable mask?**

A: The maskant can be exposed to warm air or ultrasonic bath at 150°F (66°C) for 3 to 5 minutes to ease the removal of the peelable maskant.

### **Q: Can a mask be incinerated in a vacuum furnace process?**

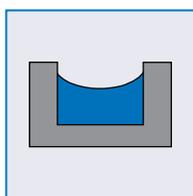
A: SpeedMask resins can be incinerated in either an air or vacuum furnace.

### **Q: Can a water jet be used to remove cured maskants?**

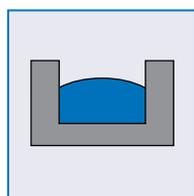
A: Yes, a water jet can remove some of the masking products. This removal process will need to be tested on a case-by-case basis.

# REFERENCE Tables

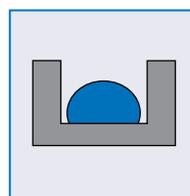
The following tables provide additional information about the Dymax adhesives in this guide.



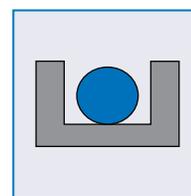
LV Low Viscosity  
Newtonian



T Viscosity  
Slightly Thixotropic



VT Viscosity  
Thixotropic



GEL Viscosity  
Highly Thixotropic

## VISCOSITY

When choosing a viscosity, consideration should be given to how the adhesive must flow (or not flow) on the part after the adhesive is applied. Part geometry, process design, and assembly speed and method should all be considered when selecting viscosity. Viscosity is a material's resistance to flow. Low-viscosity adhesives flow more readily than high-viscosity adhesives. Thixotropic gels flow very slowly and are recommended when adhesive flow on a part after dispensing must be minimal.

Dymax adhesives are available in a variety of viscosities. The identifiers appear as suffixes on product names as follows:

VLV = Very Low Viscosity  
LV = Low Viscosity  
T = Thick  
VT = Very Thick  
GEL = Gel

Standard viscosity products do not have a suffix.

Typical Centipose (cP/MPa)	Typical Reference Liquids at 20°C
1	Water
10	Kerosene
110	SAE 10 Oil
200	Maple Syrup
440	SAE 30 Oil
1,100	Castor Oil
3,000	Honey
10,000	Molasses
18,000	Chocolate Syrup
65,000	Vaseline
100,000	Sour Cream
200,000	Peanut Butter
1,500,000	Shortening

## PRODUCTION THROUGHPUT PLANNER

1 Piece Every...	Minute	Hour	*Day (8 hours)	*Week (40 hours)	*Month (21 days)	*Year (50 weeks)
0.5 second	120	7,200	57,600	288,000	1,209,600	14,400,000
1 second	60	3,600	28,800	144,000	604,800	7,200,000
5 seconds	12	720	5,760	28,800	120,960	1,440,000
10 seconds	6	360	2,880	14,400	60,480	720,000
30 seconds	2	120	960	4,800	20,160	240,000
1 minute	1	60	480	2,400	10,080	120,000
5 minutes	-	12	96	480	2,016	24,000
10 minutes	-	6	48	240	1,008	12,000
30 minutes	-	2	16	80	336	4,000
1 hour	-	1	8	40	168	2,000

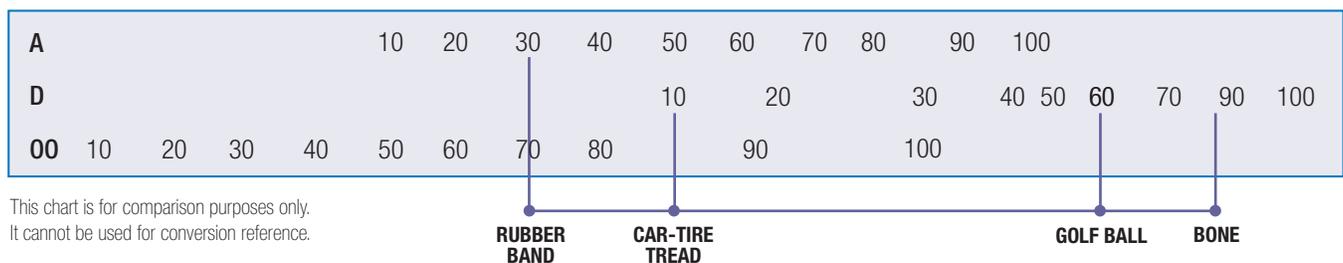
\*Based on 8-hour shifts.

## ESTIMATING USAGE

Bond-Line Gap or Coating Thickness	Theoretical Area Covered by 1 Liter of Adhesive or Coating
0.002" (51 µm)	30,500 in <sup>2</sup> (212 ft <sup>2</sup> ) (19.7 m <sup>2</sup> )
0.005" (127 µm)	12,200 in <sup>2</sup> (84.7 ft <sup>2</sup> ) (7.88 m <sup>2</sup> )
0.010" (254 µm)	6,100 in <sup>2</sup> (42.4 ft <sup>2</sup> ) (3.94 m <sup>2</sup> )
0.015" (381 µm)	4,070 in <sup>2</sup> (28.3 ft <sup>2</sup> ) (2.63 m <sup>2</sup> )

Bead Size	Theoretical Usage (Length per Liter)
1/32" (.79 mm)	66,300 in (1,684 m)
1/16" (1.6 mm)	16,600 in (422 m)
3/32" (2.4 mm)	7,400 in (188 m)
1/8" (3.2 mm)	4,100 in (104 m)
3/16" (4.8 mm)	1,900 in (48 m)
1/4" (6.4 mm)	1,000 in (25.4 m)

## HARDNESS



This chart is for comparison purposes only. It cannot be used for conversion reference.

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