OPTICAL ADHESIVE SOLUTIONS
Strong bonds to glass, metal, ceramics and plastics

- Adhesives for Optical Path Link-up
- Adhesives for Array Assemblies
- High Precision Adhesives
- High/Low Refractive Index Adhesives
- Sealant for Optical Parts
- Optical Waveguide Formation Resin
- Dispensing Solutions
Optical, Power and Thermal Management Technologies represent the biggest technological challenges facing any engineer.

**OUR SOLUTION APPROACH**

AMS Technologies' solution approach has helped hundreds of customer projects to move from concept to production. Helping you to understand our capabilities, we invite you to browse a list of the many projects that we have successfully completed over a timeframe closely approaching 30 years.

Our three key competencies Optical, Power and Thermal Management have no logical bits and bytes, nor industry qualification standards. Hence the design of a system and the choice of the right technology, supplier and products can only be based on knowledge and experience in those fields.

There are manifold fields of applications in our key markets
- Medical
- Industrial
- Renewable Energies
- Research & Scientific
- Defence & Aerospace

AMS Technologies has built a comprehensive knowledge base in those three key competencies, enabling us to provide customers with complete solutions. Over and above the mere product support for standard products, our solutions can include:
- The development together with the customer of specification sheets for customized components, subsystems, modules and systems, all based on customer needs
- Effective project management of any customized product development
- Higher level design services for system-level prototypes
- Interdisciplinary system-level integrated design comprising all three key competencies: Optical, Power and Thermal Management Technologies
- Appropriate subcontractor selection and production support for system-level integration
- Proper vetting of technologies and suppliers
- Simulations and modeling of system-level designs

OEM customers with
- Consulting
- Designing
- Prototyping
- Validating/Testing
- Turnkeying

Endusers B2B with
- Demonstrating
- Installing
- Training
- Servicing
- Repairing

Where we serve
- Optical Technologies
- Power Technologies
- Thermal Management
AMS Technologies is Europe’s leading solution provider and distributor for Optical, Power and Thermal Management Technologies

WHERE TECHNOLOGIES MEET SOLUTIONS

For more than 30 years, we at AMS Technologies have been supporting the European market with leading, innovative technologies and products that have allowed our customers to take prime position in their chosen markets.

AMS Technologies is a leading solution provider and distributor of high-tech, leading-edge components, systems and equipment, with more than 30 years of experience to date and currently serving more than 2000 European customers.

We are the specialists in both componentry and complete solutions for Optical technology, Thermal Management and Power Technology fields, with access to and long standing relationships with the most advanced manufacturers in each of those fields. Drawing extensively on our experience in each of these differing technologies, and coupling this with our broad system-level competence, we are able to offer seamless and comprehensive solutions incorporating complementary aspects from all three key technology fields.

With an appropriate technical education, an element of entrepreneurial spirit and many years of design and consultancy expertise, our sales engineers can rapidly comprehend system requirements and provide you the customer with a solution that goes way beyond a simple understanding of our product datasheets. We take active involvement in the design cycle, defining and re-defining your specifications, and leading in many cases to highly specific, customized products and solutions. Helping you to effectively outsource your production line, we can even provide you with the necessary leading turnkey contract manufacturing services in our key competency fields.

AMS Technologies has been delivering solutions into a variety of high-tech markets, including renewable energies, medical, defence & aerospace, research & scientific and various other industrial segments. Our customer base consists of Europe’s largest leading technology corporations, a network of universities and research institutes as well as the most promising start-ups.

We thrive by working in a ‘customer first’ environment. Our pan-European customers are serviced from a network of local offices in Germany, the UK, France, Italy, Spain, Poland and Sweden, with a focused operations and logistics centre located in Munich, Germany.

Our commitment: Identifying the best solution for your project enabling
Optical Adhesives

- Adhesives for Optical Path Link-up
- Adhesives for Array Assemblies
- High Precision Adhesives
- High/Low Refractive Index Adhesives
- Sealant for Optical Parts
- Optical Waveguide Formation Resin

Dispensing Solutions

- Hand-Held Valve Systems
- Manual Syringe
- Powered Syringe
- Dispensing Systems
- Material Reservoirs & Tanks

Optical Adhesives for glass, metal, ceramics and plastics
Optical Adhesives for glass, metal, ceramics and plastics

Gluing is an essential technological process in many industrial technologies. The state-of-the-art adhesives are especially designed to meet the wide range of applications, while highly specialized. They are simplifying bonding processes, guaranteeing high processing speed combined with high reliability.

They are used for bonding of optical components where the adhesive is index matched to the components which has to be glued together. Special glues are developed to fix fiber in v-grooves. The refractive index is precisely controlled and can vary from low to high realizing a perfect optical match of materials.

Another group of adhesives is designed for sealing of optical components. To improve long-term reliability in mechanical protection and moisture prevention, optical devices are housed in protective cases of metal, plastic, etc. The reliability, especially in moisture resistance, of optical parts is greatly influenced by the characteristics of the sealant used for the openings and case junctions of the protective cases in the devices. Curing conditions can be different, using either heat or UV light to reach the maximum on bonding power.

All adhesives shown in this brochure provide
- fast cure
- strong bonds to glass, metal, ceramics and plastics
- low shrinkage
- low stress

AMS Technologies is distributing the products of two optical adhesives suppliers NORLAND and NTT-AT, covering with their portfolio most of the applications.

Usage Examples:

Cross-section view of V-type groove

Adhesive used for Array Assembly

Optical Adhesives for glass, metal, ceramics and plastics

Optical transmittance

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Tg</th>
<th>Optical transmittance [1.3um]</th>
<th>Bond Strength (kgf/cm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>88%</td>
<td>86%</td>
<td>92%</td>
<td>89%</td>
</tr>
</tbody>
</table>

Special Features
- Highly heat resistant.
- Can grind mechanically.
- Low viscosity.
- Can grind mechanically.
- High Tg.
- High durability.
- Non-liquidity.

*1 : Na-D line after hardening.
*2 : Content product is “Non-medical use, deleterious substance” (Please refer to MSDS for handling.)
Adhesives for Optical Path Link-up

- The refractive index can be accurately controlled within a range of 1.46-1.57±0.005 (Na-D).
- Using ultraviolet ray curing makes alignment easy.
- Very little adhesion loss due to heat or moisture, providing high durability.

Adhesives for Array Assemblies

- Excellent durability
- Just the right viscosity for easy application
- For fiber fixation (AT9575M, AT8105) : non-liquid viscosity
- For fiber fixation into V-type groove (AT9968) : low viscosity fluid
- Heat proof temperature of over 200°C (AT3925M)

High Precision Adhesives

- Minimal position changes due to curing time and temperature change allowing for even submicron adhesion.
- AT9290F is transparent upon curing
High/Low Refractive Index Adhesives

- Precision refraction index of 1.42-1.46±0.005 (Na-D) as the low RI and 1.57-1.70±±0.005 (Na-D) as the high RI provides controllability.
- Ultraviolet curing makes alignment easy.

Sealant for Optical Parts

- Minimal internal stress develops during hardening and the heat cycle.
- Low moisture absorption even at high temperatures

Optical Waveguide Formation Resin

- Superior optical transparency
- Main Ingredient: Epoxy Type
- Range of Refractive: Core: nD = 1.52±0.005
- Index Adjustment: Cladding: nD = 1.50±0.005
- Viscosity = 2,200cP Tg = 222°C
- □n = 1.3%(@830nm)
- Viscosity = 2,900cP Tg = 198°C

Optical Adhesives for glass, metal, ceramics and plastics
# Index Matching Liquids

<table>
<thead>
<tr>
<th>Adhesive type</th>
<th>Article</th>
<th>Description</th>
<th>Cure</th>
<th>Viscosity at 25°C</th>
<th>Refractive Index</th>
<th>Modulus (PSI)</th>
<th>Tensile (PSI)</th>
<th>Elongation at Failure</th>
<th>Shore D Hardness</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UV Adhesives</strong></td>
<td>NOA 60</td>
<td>General purpose adhesive for bonding doubles, prisms or mounting</td>
<td>UV</td>
<td>300 CPS</td>
<td>1.56</td>
<td>135</td>
<td>2.8</td>
<td>35%</td>
<td>81</td>
</tr>
<tr>
<td></td>
<td>NOA 61</td>
<td>Preferred adhesive for military optics. Meets MIL-A-3920. Used for optics</td>
<td>UV</td>
<td>300 CPS</td>
<td>1.56</td>
<td>150</td>
<td>3</td>
<td>38%</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>NOA 63</td>
<td>Cures well in thick sections. Use as filament to hold lenses in place or for</td>
<td>UV</td>
<td>2,500 CPS</td>
<td>1.56</td>
<td>240</td>
<td>5</td>
<td>6%</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>NOA 65</td>
<td>Flexible adhesive suitable for low strain applications or for cold blocking of lenses.</td>
<td>UV</td>
<td>1,000 CPS</td>
<td>1.52</td>
<td>20</td>
<td>1.5</td>
<td>80%</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>NOA 68</td>
<td>Flexible adhesive for cold or plastics such as polycarbonate, CAB or</td>
<td>UV</td>
<td>5,000 CPS</td>
<td>1.54</td>
<td>20</td>
<td>2.5</td>
<td>80%</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>NOA 68T</td>
<td>Screen printable flexible adhesive for glass and plastic such as</td>
<td>UV</td>
<td>22,000 CPS</td>
<td>1.54</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>NOA 71</td>
<td>Provides a strong bond to glass surfaces and has excellent clarity for light</td>
<td>UV</td>
<td>200 CPS</td>
<td>1.56</td>
<td>55</td>
<td>1.3</td>
<td>43%</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>NOA 72</td>
<td>Low viscosity adhesive for bonding glass or plastics such as polycarbonate.</td>
<td>UV/VIS</td>
<td>155 CPS</td>
<td>1.56</td>
<td>2.4</td>
<td>500</td>
<td>34%</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>NOA 73</td>
<td>Flexible adhesive with low viscosity for bonding delicate parts.</td>
<td>UV</td>
<td>140 CPS</td>
<td>1.56</td>
<td>1.6</td>
<td>200</td>
<td>16%</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>NOA 74</td>
<td>Low viscosity adhesive for bonding CAB, other plastics and</td>
<td>UV</td>
<td>80-95 cps</td>
<td>1.52</td>
<td>2900</td>
<td>217</td>
<td>10%</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>NOA 75</td>
<td>Low viscosity adhesive used for bonding polarized and polyester film, nylon.</td>
<td>UV/VIS</td>
<td>80-95 cps</td>
<td>1.52</td>
<td>2610</td>
<td>164</td>
<td>7%</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>NOA 76</td>
<td>High viscosity adhesive for bonding glass to plastic. Cures with UV or visible</td>
<td>UV/VIS</td>
<td>4,500 CPS</td>
<td>1.51</td>
<td>970</td>
<td>450</td>
<td>47%</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>NOA 78</td>
<td>High viscosity adhesive for bonding plastic to plastic. Cures with UV or visible</td>
<td>UV/VIS</td>
<td>9,000 CPS</td>
<td>1.50</td>
<td>1140</td>
<td>649</td>
<td>57%</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>NOA 81</td>
<td>Fast curing adhesive for tacking or bonding. Excellent adhesion to glass</td>
<td>UV</td>
<td>300 CPS</td>
<td>1.56</td>
<td>200</td>
<td>3</td>
<td>25%</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>NOA 83H</td>
<td>Fast curing adhesive that will cure with UV or heat for tacking or bonding UV</td>
<td>UV/HEAT</td>
<td>250 CPS</td>
<td>1.56</td>
<td>160</td>
<td>3.5</td>
<td>30%</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>NOA 84</td>
<td>Low refractive index, very low viscosity adhesive for bonding or coating glass</td>
<td>UV/VIS</td>
<td>55 CPS</td>
<td>1.46</td>
<td>1.14</td>
<td>649</td>
<td>57%</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>NOA 85</td>
<td>Low refractive index, higher viscosity adhesive for bonding glass and plastic.</td>
<td>UV</td>
<td>200 CPS</td>
<td>1.46</td>
<td>9.34</td>
<td>1.5</td>
<td>111%</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>NOA 86</td>
<td>Low viscosity adhesive that meets Bicore specification of 85C/55RH for bonding</td>
<td>UV/VIS</td>
<td>200-300 CPS</td>
<td>1.55</td>
<td>360,4</td>
<td>7,834</td>
<td>2.8%</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>NOA 86H</td>
<td>Low viscosity adhesive that meets Bicore specification of 85C/55RH for bonding</td>
<td>UV/VIS and or heat</td>
<td>200-300 CPS</td>
<td>1.55</td>
<td>360,4</td>
<td>7,834</td>
<td>2.8%</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>NOA 87</td>
<td>High viscosity adhesive that meets Bicore specification of 85C/55RH for bonding</td>
<td>UV/VIS</td>
<td>900-1500 CPS</td>
<td>1.52</td>
<td>209,7</td>
<td>4,88</td>
<td>13%</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>NOA 88</td>
<td>Low outgassing adhesive for aerospace or electronic applications. Excellent</td>
<td>UV</td>
<td>250 CPS</td>
<td>1.56</td>
<td>112</td>
<td>1.9</td>
<td>43%</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>NOA 89</td>
<td>Low viscosity adhesive for spin coating and bonding delicate parts</td>
<td>UV</td>
<td>20 CPS</td>
<td>1.51</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>NOA 13685</td>
<td>Low viscosity adhesive with a refractive index of 1.3685 for bonding glass or plastic.</td>
<td>UV</td>
<td>15-25 CPS</td>
<td>1.3685</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>NOA 1376</td>
<td>Low viscosity adhesive with a refractive index of 1.37 for bonding glass or plastic.</td>
<td>UV</td>
<td>45-60 CPS</td>
<td>1.37</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>NOA 138</td>
<td>Low viscosity adhesive with a refractive index of 1.38 for bonding glass or plastic.</td>
<td>UV</td>
<td>45-60 CPS</td>
<td>1.38</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>NOA 142</td>
<td>Low viscosity adhesive with a refractive index of 1.42 for bonding glass.</td>
<td>UV</td>
<td>20-40 CPS</td>
<td>1.42</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>NOA 144</td>
<td>Adhesive with a refractive index of 1.44 for bonding glass.</td>
<td>UV</td>
<td>45-60 CPS</td>
<td>1.44</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>NOA 148</td>
<td>Adhesive with a refractive index of 1.48 for bonding glass.</td>
<td>UV</td>
<td>1500-2000 CPS</td>
<td>1.48</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>NOA 1625</td>
<td>Low viscosity adhesive with a refractive index of 1.625 for bonding glass.</td>
<td>UV</td>
<td>60-80 CPS</td>
<td>1.625</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Adhesive type</td>
<td>Article</td>
<td>Description</td>
<td>Cure</td>
<td>Viscosity at 25°C</td>
<td>Refractive Index</td>
<td>Modulus at 25°C</td>
<td>Tensile at 25°C</td>
<td>Elongation at failure</td>
<td>Shore D Hardness</td>
</tr>
<tr>
<td>---------------------------</td>
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<td>----------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>UV Adhesives</td>
<td>NOA 164</td>
<td>Low viscosity adhesive with a refractive index of 1.64 for bonding glass.</td>
<td>UV</td>
<td>60-80 CPS</td>
<td>1.64</td>
<td>N/A</td>
<td>N/A</td>
<td>58%</td>
<td>55</td>
</tr>
<tr>
<td>UV Adhesives</td>
<td>NBA 107</td>
<td>UV curing adhesive for cold blocking and temporary bonding of lenses. Can be</td>
<td>UV</td>
<td>350 cps</td>
<td>1.51</td>
<td>800</td>
<td>78</td>
<td>5%</td>
<td>15</td>
</tr>
<tr>
<td>UV Adhesives</td>
<td>NBA 108</td>
<td>UV curing adhesive for cold blocking and temporary bonding of lenses. Can be</td>
<td>UV</td>
<td>550 CPS</td>
<td>1.51</td>
<td>710</td>
<td>101</td>
<td>18%</td>
<td>25</td>
</tr>
<tr>
<td>UV Adhesives</td>
<td>UVS 91</td>
<td>Screenable paste for bonding and sealing perimeters of liquid Paste</td>
<td>UV</td>
<td>Thixotropic</td>
<td>N/A</td>
<td>45</td>
<td>2.9</td>
<td>58%</td>
<td>55</td>
</tr>
<tr>
<td>Adhesives for Optical Path Link-up</td>
<td></td>
<td>Refractive Index Adjusting Material (High Tg) [Epoxy] Modulate the refractive index to specific values for the best level of transparency.</td>
<td>30mW/cm² 10min</td>
<td>200~560 cP</td>
<td>1.46~1.57</td>
<td>120~180 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Adhesives for Optical Path Link-up</td>
<td></td>
<td>Refractive Index Adjusting Material (Low Tg) [Epoxy] Modulate the refractive index to specific values for the best level of transparency.</td>
<td>10mW/cm² 10min</td>
<td>200~560 cP</td>
<td>1.45~1.57</td>
<td>&gt;180 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Adhesives for Optical Path Link-up</td>
<td></td>
<td>GA700H (High Tg) [Epoxy] AT1.55μm, adjusted to match silica glass</td>
<td>30mW/cm² 10min</td>
<td>252 cP</td>
<td>1.46</td>
<td>94 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Adhesives for Optical Path Link-up</td>
<td></td>
<td>GA7145L (Low Tg) [Epoxy] AT1.55μm, adjusted to match silica glass</td>
<td>10mW/cm² 5min</td>
<td>250 cP</td>
<td>1.46</td>
<td>&gt;200 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Adhesives for Optical Path Link-up</td>
<td></td>
<td>AT6001 [Acrylate] Telecridia standard (strong under high temperature and humidity, flexible)</td>
<td>10mW/cm² 10min</td>
<td>440 cP</td>
<td>1.51</td>
<td>&gt;160 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Adhesives for Optical Path Link-up</td>
<td></td>
<td>AT8224 [Acrylate] Telecridia standard (strong under high temperature and humidity, High Tg)</td>
<td>10mW/cm² 5min</td>
<td>180 cP</td>
<td>1.51</td>
<td>&gt;122 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Adhesives for Optical Path Link-up</td>
<td></td>
<td>AT6390 [Acrylate] High endurance material, Tg &gt; 100°C, High viscosity</td>
<td>10mW/cm² 5min</td>
<td>840 cP</td>
<td>1.51</td>
<td>156 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Array Assembly Adhesive</td>
<td>AT3925M [Epoxy] Highly heat resistant. Can grind mechanically</td>
<td>100mW/cm² 10min</td>
<td>284 CPS</td>
<td>1.52</td>
<td>&gt;181 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Array Assembly Adhesive</td>
<td>AT9390 [Epoxy] Can grind mechanically.</td>
<td>30mW/cm² 10min</td>
<td>600 CPS</td>
<td>1.49</td>
<td>&gt;181 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Array Assembly Adhesive</td>
<td>AT9968 [Epoxy] Low viscosity. Can grind mechanically.</td>
<td>100mW/cm² 10min</td>
<td>70 CPS</td>
<td>1.51</td>
<td>&gt;202 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Array Assembly Adhesive</td>
<td>AT7190M [Epoxy] Can grind mechanically. High Tg.</td>
<td>100mW/cm² 10min</td>
<td>770 CPS</td>
<td>1.57</td>
<td>&gt;129 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td>Array Assembly Adhesive</td>
<td>AT9675M [Epoxy] High durability. Non-liquidity.</td>
<td>100mW/cm² 10min</td>
<td>&gt;20,000 (Paste)</td>
<td>–</td>
<td>&gt;140 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td>Array Assembly Adhesive</td>
<td>AT8105 [Acrylate] High durability. Non-liquidity, High Tg.</td>
<td>10mW/cm² 5min</td>
<td>&gt;20,000 (Paste)</td>
<td>–</td>
<td>&gt;200 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>High Precision Adhesives</td>
<td>AT2918 [Acrylate] Small curing shrinkage rate, Small thermal expansion coefficient rate.</td>
<td>50mW/cm² 10min</td>
<td>&gt;20,000</td>
<td>–</td>
<td>&gt;116 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
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<td></td>
</tr>
<tr>
<td>High Precision Adhesives</td>
<td>AT8290F [Epoxy] Small curing shrinkage rate, Small thermal expansion coefficient rate, Large curing depth</td>
<td>50mW/cm² 10min</td>
<td>&gt;20,000</td>
<td>–</td>
<td>&gt;200 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
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<tr>
<td>Sealant for Optical Parts</td>
<td>S3903 A: Amine, B: Denatured Epoxy Flexible</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>50 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>36</td>
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</tr>
<tr>
<td>Sealant for Optical Parts</td>
<td>S3903-5 A: Amine, B: Denatured Epoxy Flexible High Viscosity</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>121 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>39</td>
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</tr>
<tr>
<td>Sealant for Optical Parts</td>
<td>OS-39 A: Amine, B: Denatured Epoxy Flexible High Viscosity</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>58 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Sealant for Optical Parts</td>
<td>14Si A: Epoxy Resin, B: Amine High moisture proof, High bonding strength</td>
<td>A: White Paste, B: Yellow Transparent fluid</td>
<td>–</td>
<td>–</td>
<td>200 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Sealant for Optical Parts</td>
<td>14Si-3 A: Epoxy Resin, B: Amine High moisture proof, High bonding strength, High viscosity</td>
<td>A: White Paste, B: Yellow Transparent fluid</td>
<td>–</td>
<td>–</td>
<td>200 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>82</td>
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<tr>
<td>Sealant for Optical Parts</td>
<td>OS14 A: Epoxy Resin, B: Amine High moisture proof, High bonding strength, High viscosity</td>
<td>A: White Paste, B: Yellow Transparent fluid</td>
<td>–</td>
<td>–</td>
<td>200 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>61</td>
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<tr>
<td>Sealant for Optical Parts</td>
<td>OS-48 Polybutylene system resin Long PotLife A: White Paste, B: Yellow Transparent fluid</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>11 (kgf/cm²)</td>
<td>–</td>
<td>–</td>
<td>66</td>
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<tr>
<td>High refractive index resin</td>
<td>Radical system #18165 –</td>
<td>10mW/cm² 5min</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td>High refractive index resin</td>
<td>Radical system #18166 –</td>
<td>10mW/cm² 5min</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
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<tr>
<td>High refractive index resin</td>
<td>Radical system #6205 –</td>
<td>10mW/cm² 5min</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
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<tr>
<td>High refractive index resin</td>
<td>Caticonic systems #83754 –</td>
<td>100mW/cm² 2min</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
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<tr>
<td>High refractive index resin</td>
<td>Caticonic systems #7200 –</td>
<td>100mW/cm² 2min</td>
<td>–</td>
<td>–</td>
<td>–</td>
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</tbody>
</table>
Dispensing Units and Accessories for Fiber optics Patchcord production

The dispensing systems from MUSASHI are used in numerous industrial processes, such as automotive, cable assembly, optical module manufacturing, electronics, solar cell manufacturing and medical technology. A large choice of consumables, like syringes, nozzles and adapter hoses cover all customer needs.

When handling liquid materials process parameters like stability, flow volume and the curing profile of the used materials are of paramount importance. Permanent monitoring and control of these parameters is essential to ensure stable dispensing during the process, even with self-curing materials.

High precision systems optimize the production flow, lower the costs and maximize throughput for electrical and electromechanical manufacturing sequences. When used in medical applications Musashi’s solutions ensure absolute even dispensing of UV curing adhesives, silicone, cyanoacrylate adhesives and other liquid materials.

- Manual dispenser for Syringes
- Syringes & Syringe Holder
- Adapter Tube for Pneumatic dispenser
- Plunger & Needle for threaded syringe
- Pneumatic syringe dispenser

Fluid material viscosity table
Adhesive Injection Systems for Ferrules

The Shotmaster is an automated solution for dispensing adhesives into ferrules of fiber optic connectors. The robot arm allows for precise positioning of the syringe needle in relation to the ferrule hence avoiding later failure of connectors due to glue misplacement. The integrated dispense system corrects for the glue changing its viscosity over time hence making sure always same volume is injected in the ferrule. The Shotmaser is the ideal solution for today's high volume high quality fiber optic connector assembly lines.

This robot is equipped with a high precision pneumatic dispenser that accurately corrects for fluctuations in the dose volume caused by changes in viscosity, such as occur with twopart resin material.

- Streamline the injection operation
- Compatible with large variety of ferrule
- Improve workability
- Stabilizing adhesive spread
- Temperature control by peltiert device
- Stabilizing of quality

**Injection step**

![Injection step diagram]

**Centrifugal bubble eliminator for syringes**

This is a bubble eliminator for removing bubbles that are generated when filling material into syringes by using centrifugal force. Simple operation: Put a lquid-filled syringes in the machine and press the switch. Two models are available according to the syringe size. Clean and simple bubble removal for various fluids such as epoxy resin and grease.

**ML-808FX: High precision dispenser flexible with viscosity change**

Stable dispensing of two-liquid type cure adhesive With the <auto increment function>, dispensing set conditions automatically switches step-by-step. With the <auto slope function>, the channel is set automatically just by inputting the start and end dispensing conditions. Variable line width at a constant drawing speed. Ideal for automation lines and centralized control from host computer because the RS-232C communication function is provided.
WHAT CAN WE DO FOR YOU?

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