

## 3M Scotch-Weld™ DP8010NS Structural Adhesive

Category : Polymer , Adhesive

### Material Notes:

3M™ Scotch-Weld™ Structural Plastic Adhesive DP-8010NS is a two-part acrylic-based adhesive (10:1 ratio by volume) that can bond many low surface energy plastics, including many grades of Polypropylene, Polyethylene, and TPO's with out special surface preparation. It can replace screws, rivet, plastic welding, and two-step processes which include chemical etchants, priming or surface treatments in many applications. DP-8010NS is a non-sag product designed to be used in applications where a high viscosity product is needed such as a vertical surface. Information provided by 3M

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_3M-Scotch-Weld-DP8010NS-Structural-Adhesive.php](http://www.lookpolymers.com/polymer_3M-Scotch-Weld-DP8010NS-Structural-Adhesive.php)

| Physical Properties  | Metric   | English  | Comments                            |
|----------------------|----------|----------|-------------------------------------|
| Brookfield Viscosity | 27000 cP | 27000 cP | Accecelerator, DV-II, #7 sp, 20 rpm |
|                      | 70000 cP | 70000 cP | Base, DV-II, #7 sp, 20 rpm          |

| Mechanical Properties | Metric    | English                                    | Comments  |
|-----------------------|-----------|--|---|
| Shear Strength        | 0.345 MPa | 50.0 psi                                   | Overlap, Toluene for 14 days, Cohesive Failure                  |
|                       | 0.862 MPa | 125 psi                                    | Overlap, Al/HDPE (non-abraded aluminum), Adhesive Failure to Al |
|                       | 1.03 MPa  | 150 psi                                    | Overlap, Acetal, Adhesive Failure                               |
|                       | 1.90 MPa  | 275 psi                                    | Overlap, Acetone for 14 days, Cohesive Failure                  |
|                       | 2.76 MPa  | 400 psi                                    | Overlap, LDPE, Substrate Failure                                |
|                       | 3.28 MPa  | 475 psi                                    | Overlap, PTFE, Adhesive Failure                                 |
|                       | 3.96 MPa  | 575 psi                                    | Overlap, HIPS, Substrate Failure                                |
|                       | 3.96 MPa  | 575 psi                                    | Overlap, Gasoline for 14 days, Cohesive Failure                 |
|                       | 4.14 MPa  | 600 psi                                    | Overlap, Glass (3/16" thick), Substrate Failure                 |
|                       | 4.14 MPa  | 600 psi                                    | Overlap, RK8010A Top Coat CRS/HDPE, Adhesive Failure            |
|                       | 5.17 MPa  | 750 psi                                    | Overlap, Polystyrene, Substrate Failure                         |
|                       | 5.34 MPa  | 775 psi                                    | Overlap, UHMWPE, Substrate Failure                              |
| 5.86 MPa              | 850 psi   | Overlap, CRS/HDPE, Adhesive Failure to CRS |   |

| Mechanical Properties | Metric    | English  | Comments  |
|-----------------------|-----------|----------|---|
|                       | 6.03 MPa  | 875 psi  | Overlap, HCl for 14 days, Substrate Failure                         |
|                       | 6.21 MPa  | 900 psi  | Overlap, 71°C/100% RH for 14 days, AF/CF                            |
|                       | 6.38 MPa  | 925 psi  | Overlap, Diesel Fuel for 14 days, Substrate Failure                 |
|                       | 6.55 MPa  | 950 psi  | Overlap, PE, Substrate Failure                                      |
|                       | 6.55 MPa  | 950 psi  | Overlap, DCT 5002X Top Coat CRS/HDPE (non-abraded CRS), AF/Top Coat |
|                       | 6.55 MPa  | 950 psi  | Overlap, NaOH for 14 days, Substrate Failure                        |
|                       | 6.72 MPa  | 975 psi  | Overlap, Antifreeze Coolant for 14 days, Substrate Failure          |
|                       | 7.067 MPa | 1025 psi | Overlap, ED-5000 E-Coated CRS/HDPE, Adhesive Failure                |
|                       | 7.24 MPa  | 1050 psi | Overlap, Lexan, AF/CF   |
|                       | 7.58 MPa  | 1100 psi | Overlap, HDPE, Substrate Failure                                    |
|                       | 7.58 MPa  | 1100 psi | Overlap, Control, Substrate Failure                                 |
|                       | 7.93 MPa  | 1150 psi | Overlap, PP, Substrate Failure                                      |
|                       | 7.93 MPa  | 1150 psi | Overlap, Plexiglass (PMMA), Substrate Failure                       |
|                       | 8.101 MPa | 1175 psi | Overlap, 71°C water soak for 14 days, Cohesive Failure              |
|                       | 8.27 MPa  | 1200 psi | Overlap, 304 Stainless Steel (1/32" thick), Adhesive Failure        |
|                       | 9.480 MPa | 1375 psi | Overlap, EC 3924 Primed CRS (non-abraded CRS), AF/CF                |
|                       | 10.0 MPa  | 1450 psi | Overlap, Gel Coat (3/16" thick), Substrate Failure                  |
|                       | 10.17 MPa | 1475 psi | Overlap, ABS, Substrate Failure                                     |
|                       | 10.3 MPa  | 1500 psi | Overlap, EC 3924 Primed Al/HDPE (non-abraded Al), Cohesive Failure  |
|                       | 12.93 MPa | 1875 psi | Overlap, Copper (1/16" thick), AF/CF                                |
|                       | 13.4 MPa  | 1950 psi | Overlap, Aluminum (1/16" thick), Adhesive Failure                   |
|                       | 14.1 MPa  | 2050 psi | Overlap, PVC, Substrate Failure                                     |

| Mechanical Properties | Metric                           | English                          | Comments                        |
|-----------------------|----------------------------------|----------------------------------|---------------------------------|
|                       | 17.41 MPa                        | 2525 psi                         | Overlap, Green FRP, AF/CF       |
|                       | 2.76 MPa<br>@Temperature 82.0 °C | 400 psi<br>@Temperature 180 °F   | Overlap                         |
|                       | 16.5 MPa<br>@Temperature 24.0 °C | 2400 psi<br>@Temperature 75.2 °F | Overlap                         |
| Peel Strength         | 5.26 kN/m                        | 30.0 pli                         | T-Peel                          |
|                       | 5.26 kN/m                        | 30.0 pli                         | T-Peel, HDPE, Substrate Failure |

| Thermal Properties        | Metric      | English        | Comments |
|---------------------------|-------------|----------------|----------|
| CTE, linear               | 132 µm/m-°C | 73.3 µin/in-°F | Below Tg |
|                           | 207 µm/m-°C | 115 µin/in-°F  | Above Tg |
| Glass Transition Temp, Tg | 34.0 °C     | 93.2 °F        | onset    |

| Processing Properties | Metric         | English          | Comments                  |
|-----------------------|----------------|------------------|---------------------------|
| Cure Time             | 90.0 - 120 min | 1.50 - 2.00 hour | Time to Handling Strength |
|                       | 480 - 1440 min | 8.00 - 24.0 hour | Full Cure                 |

| Descriptive Properties | Value      | Comments    |
|------------------------|------------|-------------|
| Appearance             | Pink/Amber | Base        |
|                        | White      | Accelerator |
|                        | Yellow     |             |

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