

# MEGUM™/THIXON™ Rubber-to-Substrate Bonding Agents

## Product Selector Guide

Bonding elastomeric materials to metal, engineering plastics or other elastomers requires tough adhesives. MEGUM™ and THIXON™ bonding agents can be specially formulated for the specific bonding requirements of various substrates and conditions.

We offer a full line of low-VOC and HAP-compliant systems to help reduce emissions. Our adhesives perform in extremely severe environments and are suited for many automotive applications, including hoses, mounts, belts, bushings, seals, and instrument panels.

Long an industry leader in glass and plastic bonding technology, DuPont offers rubber-to-substrate bonding solutions that help make vehicles more energy efficient, safer, stronger, quieter, cleaner, more comfortable, and better looking. Our experience and diverse technologies enable us to solve your most challenging problems.



High-performance adhesive formulations bond similar and dissimilar substrates in mounts, bushings, belts, brake pads, window profiles, and other applications.

### Customizable Solutions

As a global science and technology leader and full-service supplier, we work closely with our customers to provide solutions based on the optimal combination of material, process, and system costs. Our Technology Centers provide rapid development of new products and solutions, in-the-field technical service, and quick response to your immediate needs.

Our facilities in all major regions include manufacturing plants, research-and-development laboratories, warehouses, shipping areas, and administrative offices. This allows us to perform troubleshooting, problem solving, performance testing, accelerated environmental testing, along with analytical expertise and services globally.

DuPont offers a complete, compatible family of rubber-to-substrate bonding agents designed to meet specific needs for a range of transportation and industrial applications, including belting, hoses, mounts, bushings, and seals.

## Guide for Solvent-based Bonding Agents

| Rubber Class                                  | Conditions of Cure or Specific Properties | Primer  | Cover  | One-coat                          |
|---|---|---|--|-----------------------------------|
| Natural rubber (NR)                           | IM  | MEGUM™ 3276   | MEGUM™ 122 J   | MEGUM™ 508                        |
|   |   | MEGUM™ 3351   | MEGUM™ 128   | MEGUM™ 5382                       |
|   | CM<br>Corrosion resistance                | MEGUM™ 3270-BG  | MEGUM™ 538   | THIXON™ OSN-2-EF-V                |
|   |   | THIXON™ P-6-EF  | MEGUM™ 1261  |                                   |
|   |   | THIXON™ P-11  | MEGUM™ 5382  |                                   |
|   |   | THIXON™ P-11-F  | MEGUM™ 5386  |                                   |
|   |   | THIXON™ P-21  | THIXON™ 520-PEF  |                                   |
|   |   | THIXON™ P-22  | THIXON™ 526  |                                   |
| Polyisoprene rubber (IR)                      | Hot glycol                                | MEGUM™ 3276<br>THIXON™ P-6-EF<br>MEGUM™ 3270-BG                                 | MEGUM™ 538<br>MEGUM™ 5386<br>THIXON™ OSN-2-EF-V          |                                   |
| Polybutadiene rubber (BR)                     | Coil coating                              | THIXON™ P-7-6   | THIXON™ 547-EF   |                                   |
| Polychloroprene rubber (CR)                   |   | MEGUM™ 3276   | MEGUM™ 122 J   | THIXON™ OSN-2-EF-V                |
|   |   | MEGUM™ 3270-BG  | MEGUM™ 128   |                                   |
|   |   | THIXON™ P-6-EF  | MEGUM™ 538   |                                   |
|   |   | THIXON™ P-11  | MEGUM™ 1261  |                                   |
|   |   | THIXON™ P-21  | MEGUM™ 5386  |                                   |
|   |   | THIXON™ P-22  | THIXON™ 520-PEF<br>THIXON™ 526                           |                                   |
| Nitrile rubber (NBR)                          | Standard                                  | MEGUM™ 3270-BG  | MEGUM™ 538   | MEGUM™ 3276                       |
|   |   | THIXON™ P-11  | MEGUM™ 5386  | MEGUM™ 10576                      |
|   |   | THIXON™ P-21  | THIXON™ 520-PEF<br>THIXON™ 526                           | THIXON™ P-11<br>THIXON™ P-21      |
|   |   |   | MEGUM™ 1261  |                                   |
| Hydrogenated nitrile-butadiene rubber (H-NBR) | Sulfur cured                              | MEGUM™ 3276   | MEGUM™ 538   | MEGUM™ 3340-1                     |
|   |   | THIXON™ P-6-EF  | MEGUM™ 5386  | MEGUM™ 15637                      |
|   | Peroxide cured                            |   |  | THIXON™ 715-EF/B                  |
|   |   |   |  | MEGUM™ 3340-1<br>MEGUM™ 15637     |
| Blend of NBR with polyvinylchloride (NBR/PVC) |   | MEGUM™ 3276<br>MEGUM™ 3270-BG<br>THIXON™ P-6-EF<br>THIXON™ P-11<br>THIXON™ P-21 | MEGUM™ 122-J<br>MEGUM™ 538<br>MEGUM™ 5382<br>MEGUM™ 5386 | MEGUM™ 3340-1<br>THIXON™ 715-EF/B |
| Nitrile carboxylic rubber (XNBR)              |   | MEGUM™ 3276<br>THIXON™ P-6-EF<br>THIXON™ P-11<br>THIXON™ P-21                   | MEGUM™ 538<br>MEGUM™ 5382<br>MEGUM™ 5386                 |                                   |

## Guide for Solvent-based Bonding Agents, Continued

| Rubber Class   | Conditions of Cure or Specific Properties | Primer  | Cover   | One-coat  |
|--|---|---|---|---|
| Ethylene-propylene rubber (copolymers, terpolymers and EPM/EPDM) | Sulfur cured                              | MEGUM™ 3276<br>MEGUM™ 3270-BG<br>THIXON™ P-6-EF<br>THIXON™ P-11<br>THIXON™ P-21 | MEGUM™ 508<br>MEGUM™ 538<br>MEGUM™ 5382<br>MEGUM™ 5386<br>THIXON™ 560 | MEGUM™ 508  |
|  | Peroxide cured                            |   | MEGUM™ 508<br>MEGUM™ 538<br>MEGUM™ 5382<br>MEGUM™ 5386<br>THIXON™ 560 |   |
|  | Coil coating                              | THIXON™ P-7-6   | THIXON™ 547-EF  |   |
| Butyl-rubber (IIR)   |   | MEGUM™ 3276<br>MEGUM™ 3270-BG<br>THIXON™ P-6-EF<br>THIXON™ P-11<br>THIXON™ P-21 | MEGUM™ 538<br>MEGUM™ 5382<br>MEGUM™ 5386                              |   |
| Chlorosulfonized rubber, e.g., Hypalon (CSM)                     |   | MEGUM™ 3276<br>MEGUM™ 3270-BG<br>THIXON™ P-6-EF<br>THIXON™ P-11<br>THIXON™ P-21 | MEGUM™ 508<br>MEGUM™ 538<br>MEGUM™ 5382<br>MEGUM™ 5386                | MEGUM™ 508<br>THIXON™ OSN-2-EF-V  |
| Polyacrylate rubber (ACM)  |   |   |   | MEGUM™ 3340-1<br>MEGUM™ 15637<br>THIXON™ 715-EF/B<br>THIXON™ 725        |
| Vamac® (AEM)   |   | MEGUM™ 3290-1<br>THIXON™ P-6-EF   | MEGUM™ 538<br>MEGUM™ 5382<br>MEGUM™ 5386<br>THIXON™ OSN-2-EF-V        | MEGUM™ 15637<br>THIXON™ 715-EF/B<br>MEGUM™ 3340-1<br>MEGUM™ 10576       |
| Fluoro rubber (FKM)  | Amine, bisphenolic cured                  |   |   | MEGUM™ 3290-1<br>THIXON™ 300 / 301                                      |
|  | Peroxide cured                            |   |   | MEGUM™ 3299   |
| Silicone rubber (VMQ)  |   |   |   | THIXON™ 305<br>MEGUM™ 2488  |
| Epichlorohydrin rubber (ECO, CO)                                 |   |   |   | MEGUM™ 3340-1<br>MEGUM™ 15637<br>THIXON™ 715-EF/B<br>THIXON™ OSN-2-EF-V |
| Millable polyurethanes (PU)                                      |   |   |   | MEGUM™ 508<br>MEGUM™ 3276<br>MEGUM™ 15637<br>THIXON™ 715-EF/B           |
| Castable polyurethanes (PU)                                      | Curing at room temp                       |   |   | THIXON™ 422   |
|  | Curing at 100° C without pre-bake         |   |   | THIXON™ 406<br>THIXON™ 422<br>THIXON™ 423                               |
|  | Pre-bake at >100° C                       |   |   | THIXON™ 406<br>THIXON™ 423  |

## Guide for Solvent-based Bonding Agents, Continued

| Rubber Class                      | Conditions of Cure or Specific Properties | Primer | Cover | One-coat       |
|-----------------------------------|---|--------|-------|----------------|
| Thermoplastic Polyurethanes (TPU) |   |        |       | THIXON™ 422    |
| Thermoplastic (TPV)               | Coil coating                              |        |       | THIXON™ 6110-F |
| PVC                               | Coil coating                              |        |       | THIXON™ 6106   |

## Guide for Water-based Bonding Agents

| Rubber Class   | Primer                         | Cover                          | One-coat                        |
|--|--------------------------------|--------------------------------|---------------------------------|
| Natural rubber (NR) Styrene-butadiene rubber (SBR)   | MEGUM™ W 9300<br>MEGUM™ W 9301 | MEGUM™ W 9100<br>MEGUM™ W 9500 | MEGUM™ W 9400                   |
| Nitrile rubber (NBR) Hydrogenated nitrile-butadiene rubber (H-NBR)<br>Polyacrylate rubber (ACM), (AEM/Vamac) | MEGUM™ W 9300<br>MEGUM™ W 9301 | MEGUM™ W 9500                  | MEGUM™ W 9400<br>MEGUM™ W 25700 |
| Fluoro rubber (FKM) – peroxide cure  |                                |                                | MEGUM™ W 2525<br>MEGUM™ W 3295  |
| Fluoro rubber (FKM) – bisphenol cure   |                                |                                | MEGUM™ W 3295                   |
| Silicone rubber (VMQ)  |                                |                                | MEGUM™ W 2525                   |
| Ethylene-copolymers (EPDM)   | MEGUM™ W 9300<br>MEGUM™ W 9301 | MEGUM™ W 9200<br>MEGUM™ W 9500 | MEGUM™ W 9400                   |

## Conditions of Use – Solvent-based Products

| Reference        | Type <sup>1</sup> | Cover Compatibility  | Elastomers to be Bonded <sup>2</sup> | Dry Film Thickness, µm | Pre-bake <sup>3</sup>            | Bonding Temperature Range, °C <sup>4</sup> |
|------------------|-------------------|--|--------------------------------------|------------------------|----------------------------------|--|
| MEGUM™ 122 J     | C                 |  | GP                                   | 10-20                  | NRP (max. 120° C)                | 130-190                                    |
| MEGUM™ 128       | C                 |  | GP                                   | 10-20                  | NRP (max. 120° C)                | 130-190                                    |
| MEGUM™ 508       | C                 |  | EPDM                                 | 15-30                  | NRP (max. 120° C)                | 130-190                                    |
| MEGUM™ 538       | C                 |  | GP, EDPM                             | 15-25                  | NRP (max. 120° C)                | 130-190                                    |
| MEGUM™ 1261      | C                 |  | GP                                   | 10-20                  | NRP (max. 120° C)                | 130-190                                    |
| MEGUM™ 2840      | M                 |  | VMQ                                  | <2                     | NRP                              | 100-260 +P                                 |
| MEGUM™ 3276      | M                 |  | NBR, H-NBR, ACM                      | 5-10                   | NRP                              | 120-205                                    |
| MEGUM™ 3276      | P                 | MEGUM™ 122 J<br>MEGUM™ 128<br>MEGUM™ 508<br>MEGUM™ 538<br>MEGUM™ 1261<br>MEGUM™ 5382<br>MEGUM™ 5386<br>THIXON™ 511-T<br>THIXON™ 520-PEF<br>THIXON™ 526 | GP                                   | 5-10                   | NRP                              |  |
| MEGUM™ 3290      | M                 |  | FKM                                  | <2                     | NRP                              | 150-210 +P                                 |
| MEGUM™ 3290-1-LD | M                 |  | FKM                                  | <2                     | NRP                              | 150-210 +P                                 |
| MEGUM™ 3299      | M                 |  | FKM (peroxide cured)                 | <2                     | NRP                              | 150-210 +P                                 |
| MEGUM™ 3340-1    | M                 |  | NBR, H-NBR, ACM                      | 5-25                   | NRP                              | 120-205                                    |
| MEGUM™ 3351      | M                 |  | NBR, H-NBR, ACM                      | 5-15                   | NRP                              | 120-205                                    |
| MEGUM™ 3351      | P                 | THIXON™ 526<br>MEGUM™ 1261<br>MEGUM™ 122 J<br>MEGUM™ 128<br>MEGUM™ 508<br>MEGUM™ 538<br>MEGUM™ 5382<br>MEGUM™ 5386<br>THIXON™ 511-T<br>THIXON™ 520-PEF | GP                                   | 5-15                   | NRP                              |  |
| MEGUM™ 5382      | C                 |  | GP, EDPM                             | 15-25                  | NRP (max. 120° C)                | 130-190                                    |
| MEGUM™ 5386      |                   |  | GP, EDPM                             | 5-25                   | NRP (max. 120° C)                | 130-190                                    |
| MEGUM™ 10576     | M                 |  | NBR, CR                              | 5-15                   |                                  | 120-205                                    |
| MEGUM™ 15637     | M                 |  | NBR, H-NBR, ACM, ECO                 | 5-15                   | R (15 min. at 115-135° C)<br>NRP | 120-205                                    |
| THIXON™ 300/301  | M                 |  | FKM                                  | <2                     | NRP                              | 160-195 +P                                 |
| THIXON™ 305      | M                 |  | VMQ                                  | <2                     | NRP                              | 100-260 +P                                 |
| THIXON™ 406      | M                 |  | PU                                   | 10-25                  | R (>100° C)                      | 80-120 +P                                  |
| THIXON™ 422      | M                 |  | PU                                   | 10-25                  | NRP (>100° C )                   | 80-120 +P                                  |

<sup>1</sup>P=Primer, C=Cover, M=One-coat

<sup>2</sup>GP=General purpose (NR, SBR, CR, IIR, BR)

<sup>3</sup>R=Recommended, NRP=Not recommended but possible

<sup>4</sup>P=Post-cure as required by rubber formulation

## Conditions of Use – Solvent-based Products, Continued

| Reference                      | Type <sup>1</sup> | Cover Compatibility   | Elastomers to be Bonded <sup>2</sup> | Dry Film Thickness, µm | Pre-bake <sup>3</sup> | Bonding Temperature Range, °C <sup>4</sup> |
|--------------------------------|-------------------|---|--------------------------------------|------------------------|-----------------------|--|
| THIXON™ 520-PEF<br>THIXON™ 526 | C                 |   | GP                                   | 10-20                  | NRP (max. 120° C)     | 130-190                                    |
| THIXON™ 547-EF                 | C                 |   | GP, EPDM                             | 5-8                    | R (min. 105° C)       | 130-190                                    |
| THIXON™ 715-EF/B               | M                 |   | NBR, ACM, PU, ECO                    | 5-10                   | R (10 min. at 130° C) | 125-205                                    |
| THIXON™ 725 A/B                | M                 |   | NBR, ACM, ECO, CO                    | 5-10                   | R (10 min. at 130° C) | 125-205                                    |
| THIXON™ OSN-2-EF-V             | C                 |   | NR, SBR, AEM, CR, CSM, ECO           | 15-40                  | NRP (max. 120° C)     | 120-230                                    |
| THIXON™ P-6-EF                 | P                 | MEGUM™ 122 J<br>MEGUM™ 128<br>MEGUM™ 508<br>MEGUM™ 538<br>MEGUM™ 1261<br>MEGUM™ 5382<br>MEGUM™ 5386<br>THIXON™ 511-T<br>THIXON™ 520-PEF THIXON™ 526<br>THIXON™ OSN 2-EF-V | GP                                   | 5-10                   | NRP                   |  |
| THIXON™ P-7-6-EF               | P                 | THIXON™ 547-EF  | GP                                   | 2,5-5                  | R (210-235° C)        |  |
| THIXON™ P-11<br>THIXON™ P-21   | M                 |   | NBR, H-NBR, ACM                      | 5-10                   | NRP                   | 100-205                                    |
| THIXON™ P-11<br>THIXON™ P-21   | P                 | MEGUM™ 122 J<br>MEGUM™ 128<br>MEGUM™ 508<br>MEGUM™ 538<br>MEGUM™ 5382<br>MEGUM™ 5386<br>THIXON™ 511-T<br>THIXON™ 520-PEF THIXON™ 526<br>MEGUM™ 1261                       | GP                                   | 5-10                   | NRP                   |  |

<sup>1</sup>P=Primer, C=Cover, M=One-coat

<sup>2</sup>GP=General purpose (NR, SBR, CR, IIR, BR)

<sup>3</sup>R=Recommended, NRP=Not recommended but possible

<sup>4</sup>P=Post-cure as required by rubber formulation

## Conditions of Use – Water-based Products

| Reference      | Type <sup>1</sup> | Cover Compatibility                             | Elastomers to be Bonded <sup>2</sup> | Dry Film Thickness, µm | Pre-bake <sup>3</sup>     | Bonding Temperature Range, °C <sup>4</sup> |
|----------------|-------------------|---|--------------------------------------|------------------------|---------------------------|--|
| MEGUM™ W 2525  | M                 |   | VMQ, EPDM, H-NBR (peroxide cured)    | <2                     | R (15 min. at 110-150° C) | 150-210                                    |
| MEGUM™ W 3295  | M                 |   | FKM, ACM                             | <2                     | R (15 min. at 120-150° C) | 150-210                                    |
| MEGUM™ W 9100  | C                 | MEGUM™ W 9300                                   | GP, NBR                              | 15-30                  | NR <sup>P</sup>           | 120-190                                    |
| MEGUM™ W 9200  | C                 |   | GP                                   | 15-30                  | NR <sup>P</sup>           | 120-190                                    |
| MEGUM™ W 9300  | P                 | MEGUM™ W 9500<br>MEGUM™ W 9200<br>MEGUM™ W 9500 | GP, NBR, H-NBR, X-NBR, EPDM          | 5-15                   | NR <sup>P</sup>           | 120-190                                    |
| MEGUM™ W 9400  | M                 |   | GP, NBR, ECO, CR, ACM                | 20-35                  | R (5-15 min @ 80° C)      | 120-190                                    |
| MEGUM™ W 9500  | C                 |   | GP, NBR, H-NBR, X-NBR, EPDM          | 15-30                  | NR <sup>P</sup>           | 120-190                                    |
| MEGUM™ W 25700 | M                 |   | AEM, ACM                             | <2                     | R (15 min @ 110-150° C)   | 150-210                                    |

<sup>1</sup>P=Primer, C=Cover, M=One-coat

<sup>2</sup>GP=General purpose (NR, SBR, CR, IIR, BR)

<sup>3</sup>R=Recommended, NRP=Not recommended but possible

<sup>4</sup>P=Post-cure as required by rubber formulation

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