

# Guide to Oligomers for Radiation Curing

28/08/2019

| ELITE OLIGOMERS                          |                       |   |                         |                   |                        |          |               |                      |  |                   |                  | Regulatory                 |                  |         |                | Graphics Applications |                 |               |      |       |     | Coatings Applications |     |    |   |   |   |              |
|--|-----------------------|---|-------------------------|-------------------|------------------------|----------|---------------|----------------------|--|-------------------|------------------|----------------------------|------------------|---------|----------------|-----------------------|-----------------|---------------|------|-------|-----|-----------------------|-----|----|---|---|---|--------------|
| Polymeric Epoxy + Hybrid ester Acrylates |                       |   |                         |                   |                        |          |               |                      |  |                   |                  | Regulatory                 |                  |         |                | Graphics Applications |                 |               |      |       |     | Coatings Applications |     |    |   |   |   |              |
| Description                              |                       |   |                         |                   |                        |          |               |                      |  |                   |                  | Regulatory                 |                  |         |                | Graphics Applications |                 |               |      |       |     | Coatings Applications |     |    |   |   |   |              |
| Functionality                            | Viscosity (cps @ 25C) | Appearance  | colour (Gardner) (APHA) | AV (Mg KOH/g)     | Tensile Elongation (%) | Tg ( C ) | RI (Nd @ 25C) | Surface Energy (N/m) | REACH (Registered substance or "Polymer exempt") | "Non-BPA derived" | Nestlé Compliant | Swiss Ordinance (Annex 10) | Digital / Inkjet | Flexo   | Litho / Offset | Overprint Varnishes   | Screen Printing | Shrink Sleeve | Wood | Metal | ABS | PC                    | PVC | 3D |   |   |   |              |
| Elite                                    | UVE2500-TP20          | Epoxy Novolac / BPF glycidyl ether acrylate in 20% TPGDA (BPA-free) | 3                       | 35,000-55,000     | Clear pale green       | 4 max    | 1 max         | -                    | 115  | -                 | 30.1             | ✓                          | ✓                | ✓(test) | ✓(B)           | 1                     | 5               | 0             | 2    | 3     | 4   | 4                     | 1   | 1  | 2 | 3 | 1 | UVE2500-TP20 |
| Elite                                    | UVE2531-TM25          | Epoxy Novolac / BPF glycidyl ether acrylate in 25% TMPTA (BPA-free) | 3                       | 40,000-60,000     | Clear pale green       | 4 max    | 1 max         | -                    | 118  | -                 | 31.1             | ✓                          | ✓                | MIN     | ✓(A-SML)       | 1                     | 4               | 3             | 3    | 2     | 3   | 4                     | 1   | 1  | 2 | 3 | 1 | UVE2531-TM25 |
| Elite                                    | UVE2587-GP30          | Epoxy Novolac / BPF glycidyl ether acrylate in 30% GPTA (BPA-free)  | 3                       | 40,000-60,000     | Clear pale green       | 4 max    | 1 max         | -                    | 117  | -                 | 31               | ✓                          | ✓                | ✓(test) | ✓(A-SML)       | 1                     | 3               | 5             | 3    | 2     | 3   | 3                     | 1   | 1  | 1 | 2 | 1 | UVE2587-GP30 |
| Elite                                    | UVP5187               | Flexible Epoxy Novolac acrylate in 20% GPTA (BPA-free)              | 3                       | 40,000-50,000     | Clear pale green       | 3 max    | 1 max         | -                    | 88   | -                 | 32               | ✓                          | ✓                | ✓(test) | ✓(A-SML)       | 1                     | 3+              | 5             | 4    | 3     | 4   | 4                     | 1   | 1  | 1 | 2 | 1 | UVP5187      |
| Elite                                    | UVP6000               | Flexible Hybrid ester acrylate                                      | 2                       | 5,00-6,000 (65C)  | Clear pale green       | 3 max    | 5 max         | -                    | 51   | -                 | 33.5             | ✓                          | X                | X       | ✓(res-A)       | 0                     | 3               | 4             | 5    | 5     | 4   | 4                     | 4   | 2  | 3 | 4 | 2 | UVP6000      |
| Elite                                    | UVP6000-TP20          | Flexible Hybrid ester acrylate in 20% TPGDA                         | 2                       | 35,000-45,000     | Clear pale green       | 3 max    | 5 max         | -                    | 51   | -                 | 33.8             | ✓                          | X                | X       | ✓(B)           | 1                     | 3               | 0             | 5    | 5     | 4   | 4                     | 2   | 1  | 1 | 3 | 2 | UVP6000-TP20 |
| Elite                                    | UVP6001               | Flexible Hybrid ester acrylate                                      | 2                       | 5,00-6,000 (65C)  | Clear pale green       | 3 max    | 5 max         | -                    | 51   | -                 | 33.5             | ✓                          | X                | X       | ✓(res-A)       | 0                     | 2               | 4             | 5    | 5     | 4   | 4                     | 4   | 2  | 3 | 4 | 2 | UVP6001      |
| Elite                                    | UVP6010-PE30          | Flexible Hybrid ester acrylate in 30% PEA                           | 2                       | 5,000-10,000      | Clear pale green       | 3 max    | 5 max         | -                    | 38   | -                 | 35.8             | ✓                          | X                | X       | ✓(B)           | 2                     | 1               | 0             | 3    | 5     | 3   | 3                     | 4   | 2  | 3 | 5 | 3 | UVP6010-PE30 |
| Elite                                    | UVP6021-HD15          | Flexible Hybrid ester acrylate in 15% HDDA                          | 2                       | 33,000-43,000     | Clear pale green       | 3 max    | 5 max         | -                    | 50   | -                 | 32.6             | ✓                          | X                | X       | ✓(B)           | 1                     | 3               | 0             | 4    | 5     | 3   | 4                     | 4   | 2  | 2 | 4 | 2 | UVP6021-HD15 |
| Elite                                    | UVP6070-IB20          | Flexible Hybrid ester acrylate in 20% IBOA                          | 2                       | 30,000-40,000     | Clear pale green       | 3 max    | 5 max         | -                    | 58   | -                 | 31               | ✓                          | X                | X       | ✓(B)           | 2                     | 1               | 0             | 4    | 5     | 3   | 3                     | 5   | 3  | 3 | 3 | 3 | UVP6070-IB20 |
| Elite                                    | UVP6150               | Flexible Hybrid ester acrylate (BPA-free)                           | 2                       | 2,500-3,500 (65C) | Clear pale green       | 3 max    | 6 max         | -                    | 53   | -                 | 32.6             | ✓                          | ✓                | ✓(test) | ✓(res-A)       | 1                     | 3               | 4             | 3+   | 4     | 4   | 4                     | 4   | 2  | 2 | 3 | 1 | UVP6150      |
| Elite                                    | UVP6175-GP30          | Flexible Hybrid ester acrylate (BPA-free) in 30% GPTA               | 2                       | 40,000-60,000     | Clear & Clean          | 3 max    | 4 max         | -                    | 54   | -                 | 32.5             | ✓                          | ✓                | ✓(test) | ✓(A-SML)       | 1                     | 3               | 5             | 3+   | 4     | 4   | 3                     | 2   | 2  | 2 | 2 | 1 | UVP6175-GP30 |
| Elite                                    | UVP6194-PT30          | Flexible Hybrid ester acrylate (BPA-free) in 30% PTTA               | 2                       | 55,000-65,000     | Clear & Clean          | 3 max    | 4 max         | -                    | 58   | -                 | -                | ✓                          | ✓                | ✓(test) | ✓(B)           | 1                     | 3               | 4             | 3+   | 5     | 4   | 3                     | 2   | 2  | 3 | 2 | 2 | UVP6194-PT30 |
| Elite                                    | UVP6300-DP20          | Flexible Hybrid ester acrylate (BPA-free) in 20% DPGDA              | 3                       | 43,000-53,000     | Clear pale green       | 3 max    | 5 max         | -                    | 48   | -                 | 31.6             | ✓                          | ✓                | MIN     | ✓(B)           | 1                     | 4               | 0             | 2    | 5     | 5   | 4                     | 4   | 2  | 3 | 4 | 2 | UVP6300-DP20 |
| Elite                                    | UVP6331-TM25          | Flexible Hybrid ester acrylate (BPA-free) in 25% TMPTA              | 3                       | 25,000-35,000     | Clear pale green       | 3 max    | 5 max         | -                    | 51   | -                 | 31.8             | ✓                          | ✓                | MIN     | ✓(A-SML)       | 1                     | 3               | 3             | 3    | 3     | 3   | 4                     | 4   | 2  | 2 | 3 | 2 | UVP6331-TM25 |
| Elite                                    | UVP6338               | Flexible Hybrid ester acrylate (BPA-free) in 30% TMP(EO)TA          | 3                       | 25,000-35,000     | Clear pale green       | 3 max    | 5 max         | -                    | 48   | -                 | 32.2             | ✓                          | ✓                | ✓(test) | ✓(A-SML)       | 1                     | 3               | 4             | 3    | 3     | 3   | 4                     | 3   | 2  | 2 | 4 | 2 | UVP6338      |

| Polyester Acrylates |                       |   |                         |                    |                        |          |               |                      |  |                   |                  | Regulatory                 |                  |         |                | Graphics Applications |                 |               |      |       |     | Coatings Applications |     |    |   |   |   |         |
|---------------------|-----------------------|---|-------------------------|--------------------|------------------------|----------|---------------|----------------------|--|-------------------|------------------|----------------------------|------------------|---------|----------------|-----------------------|-----------------|---------------|------|-------|-----|-----------------------|-----|----|---|---|---|---------|
| Description         |                       |   |                         |                    |                        |          |               |                      |  |                   |                  | Regulatory                 |                  |         |                | Graphics Applications |                 |               |      |       |     | Coatings Applications |     |    |   |   |   |         |
| Functionality       | Viscosity (cps @ 25C) | Appearance  | colour (Gardner) (APHA) | AV (BV) (Mg KOH/g) | Tensile Elongation (%) | Tg ( C ) | RI (Nd @ 25C) | Surface Energy (N/m) | REACH (Registered substance or "Polymer exempt") | "Non-BPA derived" | Nestlé Compliant | Swiss Ordinance (Annex 10) | Digital / Inkjet | Flexo   | Litho / Offset | Overprint Varnishes   | Screen Printing | Shrink Sleeve | Wood | Metal | ABS | PC                    | PVC | 3D |   |   |   |         |
| Elite               | UVP6505               | Tetra-functional Low viscosity polyester acrylate | 4                       | 400-600            | Clear & Clean          | 3 max    | 10 max        | -                    | 31   | -                 | 36.6             | ✓                          | ✓                | ✓(test) | ✓(res-A)       | 4                     | 5               | 4             | 4    | 4     | 2   | 4                     | 4   | 3  | 3 | 4 | 3 | UVP6505 |
| Elite               | UVP6535               | Di-functional Low viscosity polyester acrylate    | 2.6                     | 900-1,300          | Clear & Clean          | 1 max    | 3 max         | -                    | 35   | -                 | 38.9             | ✓                          | ✓                | ✓(test) | ✓(res-A)       | 4                     | 3               | 1             | 2    | 4     | 3   | 4                     | 4   | 4  | 4 | 3 | 3 | UVP6535 |
| Elite               | UVP6565               | Multi-functional Polyester acrylate               | 5                       | 1,200-1,700        | Clear & Clean          | 1 max    | 1 max         | -                    | 61   | -                 | 38.3             | ✓                          | ✓                | ✓(test) | ✓(B)           | 3                     | 4               | 5             | 3    | 3     | 2   | 2                     | 4   | 3  | 3 | 2 | 1 | UVP6565 |
| Elite               | UVP6600               | Modified multi-functional polyester acrylate      | 6                       | 1,500-1,800        | Clear & Clean          | 2 max    | 26-32 (BV)    | -                    | 41   | -                 | 33.9             | ✓                          | ✓                | ✓(test) | ✓(res-A)       | 4                     | 5               | 2             | 2    | 3     | 2   | 4                     | 2   | 1  | 1 | 1 | 2 | UVP6600 |
| Elite               | UVP6666               | Modified multi-functional polyester acrylate      | 6                       | 2,200-2,600        | Clear & Clean          | 1 max    | 20-25 (BV)    | -                    | 47   | -                 | 34               | ✓                          | ✓                | ✓(test) | ✓(B)           | 3                     | 5               | 2             | 2    | 3     | 2   | 3                     | 3   | 1  | 1 | 1 | 2 | UVP6666 |

| Urethane Acrylates |                       |  |                         |                 |                        |          |               |                      |  |                   |                  | Regulatory                 |                  |         |                | Graphics Applications |                 |               |      |       |     | Coatings Applications |     |    |   |   |   |              |
|--------------------|-----------------------|--|-------------------------|-----------------|------------------------|----------|---------------|----------------------|--|-------------------|------------------|----------------------------|------------------|---------|----------------|-----------------------|-----------------|---------------|------|-------|-----|-----------------------|-----|----|---|---|---|--------------|
| Description        |                       |  |                         |                 |                        |          |               |                      |  |                   |                  | Regulatory                 |                  |         |                | Graphics Applications |                 |               |      |       |     | Coatings Applications |     |    |   |   |   |              |
| Functionality      | Viscosity (cps @ 25C) | Appearance                               | colour (Gardner) (APHA) | AV (Mg KOH/g)   | Tensile Elongation (%) | Tg ( C ) | RI (Nd @ 25C) | Surface Energy (N/m) | REACH (Registered substance or "Polymer exempt") | "Non-BPA derived" | Nestlé Compliant | Swiss Ordinance (Annex 10) | Digital / Inkjet | Flexo   | Litho / Offset | Overprint Varnishes   | Screen Printing | Shrink Sleeve | Wood | Metal | ABS | PC                    | PVC | 3D |   |   |   |              |
| Elite              | UVU9037-GP20          | Aromatic Urethane acrylate               | 2                       | 100,000-150,000 | Clear pale green       | 3 max    | 5 max         | -                    | 53   | -                 | 32               | ✓                          | X                | X       | ✓(A-SML)       | 2                     | 4               | 4             | 3    | 3     | 2   | 3                     | 4   | 2  | 4 | 1 | 1 | UVU9037-GP20 |
| Elite              | UVU9200-TP30          | Aliphatic Urethane acrylate in 30% TPGDA | 2                       | 75,000-100,000  | Clear & Clean          | 1 max    | -             | -                    | 7  | -                 | 30.7             | ✓                          | ✓                | ✓(test) | ✓(B)           | 1                     | 1               | 3             | 2    | 5     | 3   | 4                     | 2   | 3  | 3 | 4 | 1 | UVU9200-TP30 |

| Amine Modified Polyether acrylates and amine acrylates |                       |   |                         |               |                        |          |               |                      |  |                   |                  | Regulatory                 |                  |         |                | Graphics Applications |                 |               |      |       |     | Coatings Applications |     |    |   |   |   |           |
|--|-----------------------|---|-------------------------|---------------|------------------------|----------|---------------|----------------------|--|-------------------|------------------|----------------------------|------------------|---------|----------------|-----------------------|-----------------|---------------|------|-------|-----|-----------------------|-----|----|---|---|---|-----------|
| Description  |                       |   |                         |               |                        |          |               |                      |  |                   |                  | Regulatory                 |                  |         |                | Graphics Applications |                 |               |      |       |     | Coatings Applications |     |    |   |   |   |           |
| Functionality  | Viscosity (cps @ 25C) | Appearance                                  | colour (Gardner) (APHA) | BV (Mg KOH/g) | Tensile Elongation (%) | Tg ( C ) | RI (Nd @ 25C) | Surface Energy (N/m) | REACH (Registered substance or "Polymer exempt") | "Non-BPA derived" | Nestlé Compliant | Swiss Ordinance (Annex 10) | Digital / Inkjet | Flexo   | Litho / Offset | Overprint Varnishes   | Screen Printing | Shrink Sleeve | Wood | Metal | ABS | PC                    | PVC | 3D |   |   |   |           |
| Elite  | UVA1700-P             | Polymeric amine modified polyether acrylate | 1                       | 80-100        | Clear & Clean          | 1        | 180-200       | -                    | -  | -                 | -                | ✓                          | ✓                | ✓(test) | ✓(B)           | 3                     | 3               | 0             | 5    | 2     | 1   | 4                     | 1   | 1  | 1 | 2 | 3 | UVA1700-P |
| Elite  | UVA1800               | Polymeric amine modified polyether acrylate | 4                       | 1800-2200     | Clear & Clean          | 1        | 60-70         | -                    | 25   | -                 | 32               | ✓                          | ✓                | ✓(test) | ✓(B)           | 2                     | 5               | 1             | 4    | 3     | 3   | 4                     | 2   | 3  | 3 | 3 | 2 | UVA1800   |

| Technical Hybrid acrylates |                       |   |                         |               |               |          |               |                      |  |                   |                  | Regulatory                 |                  |         |                | Graphics Applications |                 |               |      |       |     | Coatings Applications |     |    |   |   |   |         |
|----------------------------|-----------------------|---|-------------------------|---------------|---------------|----------|---------------|----------------------|--|-------------------|------------------|----------------------------|------------------|---------|----------------|-----------------------|-----------------|---------------|------|-------|-----|-----------------------|-----|----|---|---|---|---------|
| Description                |                       |   |                         |               |               |          |               |                      |  |                   |                  | Regulatory                 |                  |         |                | Graphics Applications |                 |               |      |       |     | Coatings Applications |     |    |   |   |   |         |
| Functionality              | Viscosity (cps @ 25C) | Appearance                                  | colour (Gardner) (APHA) | AV (Mg KOH/g) | Inhibitor     | Tg ( C ) | RI (Nd @ 25C) | Surface Energy (N/m) | REACH (Registered substance or "Polymer exempt") | "Non-BPA derived" | Nestlé Compliant | Swiss Ordinance (Annex 10) | Digital / Inkjet | Flexo   | Litho / Offset | Overprint Varnishes   | Screen Printing | Shrink Sleeve | Wood | Metal | ABS | PC                    | PVC | 3D |   |   |   |         |
| Elite                      | UVP6755               | Technical hybrid resin / polyester acrylate | 3                       | 9,000-15,000  | Clear & Clean | 150      | 1 max         | -                    | 55   | -                 | 32.5             | ✓                          | ✓                | ✓(test) | ✓(B)           | 2                     | 4               | 4             | 3    | 3     | 2   | 4                     | 3   | 2  | 2 | 3 | 1 | UVP6755 |
| Elite                      | UVS7500               | Technical hybrid resin / polyether acrylate | 1.5                     | 40,000-50,000 | Clear & Clean | 150      | 1 max         | -                    | 98   | -                 | 34.1             | ✓                          | ✓                | ✓(test) | ✓(B)           | 2                     | 4               | 4             | 3    | 2     | 3   | 4                     | 2   | 2  | 2 | 3 | 1 | UVS7500 |
| Elite                      | UVS7521               | Technical hybrid resin in HDDA              | 1                       | 2,500-3,500   | Clear & Clean | 150      | 1 max         | -                    | 76   | -                 | 30.6             | ✓                          | ✓                | MIN     | ✓(B)           | 3                     | 4               | 0             | 3    | 4     | 1   | 4                     | 3   | 2  | 2 | 2 | 2 | UVS7521 |

All values quoted are "typical values" and not intended to constitute a specification. The data given reflects our current knowledge and experience. Many factors may affect processing and application of our product. Processors should carry out their own investigations and tests. This data does not imply any guarantee of certain properties, nor the suitability of the product for a specific purpose.

\*All are <10ppm BPA

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