

Polymer Technologies Ltd

Novel Products for Radiation Curing



June 2009

For Oligomers With

- **Low film Shrinkage**
- **Outstanding Adhesion**
- **Excellent Weatherability**

Polymer Technologies Ltd.

Established in 2001 Polymer Technologies Ltd is a company producing a unique range of radiation curable oligomers. Our goals are to develop products that allow the chemist to formulate environmentally friendly inks, coatings and adhesives; not just for conventional UV/ EB markets but also for new applications where solvent based systems are currently used.

Our success is predominantly due to the close working relationships we have built with our customers, listening to their needs and requirements. Working closely with the formulator we have developed, and continue to develop, a range of oligomers that impart unique physical characteristics to both the cured and uncured film which has enabled UV/EB technology to be used in areas that would never have been considered a few years ago. At Polymer Technologies we therefore strive to engineer the following properties into many of our products:



- Low film shrinkage combined with excellent substrate wetting to enhance adhesion
- Outstanding wetting with a wide range of pigments
- Low Viscosity to reduce the need for reactive diluents.
- Exterior Durability.

Our product range continues to grow and now covers a wide range of chemistries which include:



- Epoxy derived acrylates
- Polyester acrylates
- Urethane acrylates
- Amine modified oligomers
- UV curable acrylic oligomers

In addition to developing innovative products we also pride ourselves in our commitment to service and quality. All products are manufactured to ISO9000 standards and are routinely monitored for molecular weight distribution and chemical composition.

In the UK Polymer Technologies Ltd. is also the sole distributor for Eternal Chemical Co., Ltd.'s range of radiation curable products. Eternal are the largest Asian producer of reactive diluents and oligomers and their products are made to the highest of standards, with residual solvent and acrylic acid levels being among the lowest in the industry. The extensive range of diluents and oligomers are an excellent compliment to our range of specialties and allows Polymer Technologies to offer a complete package of products.

PRODUCT CHARACTERISTICS

Product	Viscosity mPa.S at 25°C	Functionality	Glass Transition Temp. (Tg)	Surface Energy (dynes cm ⁻¹)	Colour Fastness (non- yellowing)	Flexibility	Hardness & Abrasion Resistance	Pigment & Substrate Wetting	Reactivity	Solvent & Chemical Resistance
Amine Modified										
UVA1500	90	3	-15	32.3	••	•••	••	••••	•••	••
UVA1700	80	1	-15	35.1	•	•••	•••	••••	••••	•••
Epoxy Acrylates										
UVE2000-TP20	38,000	2	96	35.6	•	•	•••••	•	•••••	•••••
UVE2200	75,000	2	113	33.5	•	••	••••	•••	••••	••••
UVE2300	10,000	3.6	8	31.8	•	•••••	•	•••••	••	••
UVE2350	25,000	3.6	11	32.2	•	•••••	••	•••••	••	••
UVE2420	25,000	2	56	33.9	•	••	••••	••••	••••	••••
UVE2500-TP20	45,000	3	120	30.1	•	•••	•••••	•••••	•••••	•••••
UVE2501-HD20	12,000	3	119	31.2	•	•••	•••••	•••••	•••••	•••••
UVE2531-TM25	50,000	3	128	31.1	•	••	•••••	•••••	•••••	•••••
Polyether Acrylates										
UVP5170	450	3	98	36.3	••	••	•••	•••	•••	••••
Polyester Acrylates										
UVP6000	5,500 @65°C	2	51	33.5	••••	•••••	••••	•••	••••	••••
UVP6000-TP20	40,000	2	51	33.8	••••	••••	••••	•••	••••	••••
UVP6010-PE30	7,000	2	38	35.8	•••	•••••	•••	•••	•••	••••
UVP6021-HD15	38,000	2	50	34	••••	••••	••••	•••	••••	••••
UVP6150	3,000 @65°C	2	53	32.6	•••	•••••	•••••	••••	••••	••••
UVP6300-DP20	48,000	3	62	31.6	••	••••	•••••	••••	•••••	••••

Product	Viscosity mPa.S at 25	Functionality	Glass Transition Temp. (Tg)	Surface Energy (dynes cm ⁻¹)	Colour Fastness (non- yellowing)	Flexibility	Hardness & Abrasion Resistance	Pigment & Substrate Wetting	Reactivity	Solvent & Chemical Resistance
Polyester Acrylates										
UVP6505	500	4	31	36.6	••	••••	••••	•••••	••••	••••
UVP6535	1,100	2.6	41	38.9	••••	•••••	•••••	•••••	••	••••
UVP6540	2,000	4	-17	31.8	••	•••••	•	••••••	•	••
UVP6565	1,500	5	61	38.3	••••	••	••••••	•••••	•••••••	•••••••
UVP6600	1,500	6	41	33.9	••	••••	••••	••••••	••••	••••
UVP6722	30,000	2	48	36.6	•••••	•••••	•••••	••••	••••	••••
UVP6733	18,000	3	41	34.8	••••	••••	••••	•••••	••••	••••
UVP6777	70,000	3	46	34.2	•••••	•••••	•••••	•••••	•••••	•••••
Specialty Acrylates										
UVS7500	45,000	1.5	98	34.1	••	•••••	••••	•••••	••	••
UVS7521	3,000	1	76	30.6	••	••••••	••••	•••••	•	•
UVS7600	40,000	2	87	32.8	•	••••••	••••	••••••	••	••
Urethane Acrylates										
UVU9075	8,000@65°C	2	51	33.2	••••	•••••	••••	••••	•••••	•••••
UVU9165	50,000	2	55	38.6	••	••••	•••••	•••••	•••••	•••••
UVU9200-TP30	85,000	2	7	30.7	••••	•••••	••••	••••	••	••••
UVU9221-HD30	30,000	2	7	31.0	•••••	•••••	••••	••••	••••	••••
UVU9321-HD12	1,800 @65°C	2	22	31.5	••••••	•••••	•••••	••	••••	••••

• Poor ••••• Excellent

Polymer Technologies Ltd.

UVA1500

Description

Highly Reactive Amine Modified Polyether Acrylate.

Supply Form

100% diluent free

Product Benefits

- Low viscosity amine modified polyether acrylate. High functionality imparts outstanding cure response. Combined with good flexibility
- Very light in colour.
- Low odour.
- Good pigment and substrate wetting

Suggested Applications

- Due to its light colour and low odour UVA1500 can be incorporated into high quality varnishes and coatings where low taint and odour and excellent clarity is required. Can also be used in coatings applied over inks containing sensitive pigments such as Rhodamine Red and Reflex Blue without causing bleaching.
- Due to its excellent reactivity and good pigment wetting UVA1500 is ideally suited for flexographics.
- Can also be used for primers and topcoats for furniture.

Typical characteristics

Viscosity @ 25°C	70—110 m Pa.s
Specific gravity @25°C	1.10
Appearance	Colourless liquid
Colour (Gardner scale)	2 max

UVA1500 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVA1700

Description

Highly Reactive Amine Synergist with Acrylate Functionality.

Supply Form

100% diluent free

Product Benefits

- Highly reactive. Therefore only relatively low levels are required (optimum level 10-12% for overprint varnish for paper and board).
- Extremely light in colour with good colour retention.
- Very low odour.
- Imparts good flexibility and integrity of film.
- As UVA1700 has acrylate functionality it has a very low tendency for pigment bleeding and bleaching.

Suggested Applications

- Due to its light colour and low odour UVA1700 can be incorporated into high quality varnishes and coatings where low taint and odour and excellent clarity is required. Can also be used in coatings applied over inks containing sensitive pigments such as Rhodamine Red and Reflex Blue without causing bleaching.
- Due to its excellent reactivity, UVA1700 is very economical compared to other acrylated amine synergists.
- Can also be used in primers and topcoats for wood coatings.

Typical characteristics

Viscosity @ 25°C	60-100 mPa.s
Appearance	Colourless/ pale straw coloured liquid
Colour (Gardner scale)	2 max

UVA1700 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVE2000-TP20

Description

High Quality Epoxy Acrylate.

Supply Form

80% in TPGDA

Product Benefits

- Epoxy acrylate which imparts outstanding cure response.
- Specially formulated to exhibit non-yellowing characteristics.
- Coatings based upon UVE2200-TP20 exhibit outstanding gloss combined with very good chemical and solvent resistance.

Suggested Applications

- Particularly well suited for overprint varnishes for paper and card, where water white films are required (i.e. food cartons and packaging).
- Also suitable for wood coatings, particularly topcoats for furniture where a high level of solvent and chemical resistance is required, and coatings for doors and architraves.

Typical characteristics

Viscosity @ 25°C	30-40Pa.s
Specific gravity @25°C	1.17 +/- 0.005
Appearance	clear, pale green liquid
Acid value	1 mg KOH/g max.
Colour (Gardner scale)	2 max

Properties of Cured Film

Tg (glass transition temp.):	96°C
Tensile elongation:	<5%
Surface energy:	36 dynes

Inventory Status

UVE2000-TP20 is included on EINECS, TSCA and CEPA inventories.

UVE2000-TP20 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVE2200

Description

Low Viscosity Epoxy Acrylate.

Supply Form

100% diluent free

Product Benefits

- Low viscosity epoxy acrylate with outstanding cure response, equivalent to that of a standard bisphenol A epoxy acrylate.
- Supplied without reactive diluents to allow freedom of formulation and can be used in combination with polyether acrylates to produce monomer free coatings with low levels of irritancy.
- Improved flexibility and wetting characteristics compared to conventional bisphenol A epoxy acrylates. Ideally suited for coatings on wood substrates that contain knots (e.g. fresh pine)

Suggested Applications

- Due to its high level of purity UVE2200 exhibits excellent stability with metallic pigments. Is therefore particularly suitable for metallic pigment pastes.
- In addition UVE2200 is also ideally suited for use in overprint varnishes, furniture primers and topcoats, topcoats for parquet flooring and flexographic and gravure inks.

Typical characteristics

Viscosity @ 25°C	70-100Pa.s
Specific gravity @25°C	1.16 +/- 0.005
Colour (Gardner scale)	2 max
Appearance	clear, pale green liquid
Acid value	1 mg KOH/g max.

Properties of Cured Film

Tg (glass transition temp.):	113°C
Tensile elongation:	<5%
Surface energy:	33.5 Dynes

Inventory Status

UVE2200 is included on EINECS, and TSCA inventories.

UVE2200 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVE2300

Description

Low Viscosity Acrylated Epoxidised Soya Bean Oil.

Supply Form

100% diluent free

Product Benefits

- Low viscosity acrylated epoxidised soya bean oil with excellent pigment wetting.
- Extremely good adhesion onto oily and oil based substrates. Also imparts good adhesion onto polyolefins
- Very good flexibility.
- Excellent flow.

Suggested Applications

- Due to its excellent pigment wetting characteristics UVE2300 is recommended as an additive (10%) into most ink systems (particularly flexographic and digital) to improve colour strength, gloss and stability. Works extremely well in blacks
- Can be incorporated into overprint varnishes to assist adhesion over alkyd based inks, wood coatings to aid adhesion onto fresh knotty pine or teak.
- Reactive flexibiliser for coatings.
-

Typical characteristics

Viscosity @ 25°C	10 Pa.s
Specific gravity @25°C	1.03 +/- 0.005
Acid value	10 mg KOH/g max.
Colour (Gardner scale)	8 max
Appearance	clear, straw coloured liquid

Properties of Cured Film

Tg (glass transition temp.):	8°C
Tensile elongation:	15%
Surface energy:	31.8 Dynes

Inventory Status

UVE2300 is included on EINECS, TSCA DSL (Canada), AICS (Australia), ENCS (Japan), CECS (China) and PICCS (Philippines) inventories.

UVE2300 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVE2350

Description

Higher Viscosity Acrylated Epoxidised Soya Bean Oil.

Supply Form

100% diluent free

Product Benefits

- Acrylated epoxidised soya bean oil with excellent pigment wetting.
- Extremely good adhesion onto oily and oil based substrates. Also imparts good adhesion onto polyolefins
- Very good flexibility.
- Excellent flow.

Suggested Applications

- Due to its excellent pigment wetting characteristics UVE2350 is recommended as an additive (%-10%) into most ink systems, particularly lithographic, to improve colour strength, gloss and stability. Works very well in blacks
- Can be incorporated into overprint varnishes to assist adhesion over alkyd based inks, wood coatings to aid adhesion onto fresh knotty pine or teak.
- Reactive flexibiliser for coatings.
-

Typical characteristics

Viscosity @ 25°C	25 Pa.s
Specific gravity @25°C	1.03 +/- 0.005
Acid value	10 mg KOH/g max.
Colour (Gardner scale)	8 max
Appearance	clear, straw coloured liquid
Inventory Status	

Properties of Cured Film

Tg (glass transition temp.):	11°C
Tensile elongation:	15%
Surface energy:	32.2 Dynes

UVE2350 is included on EINECS, TSCA DSL (Canada), AICS (Australia), ENCS (Japan), CECS (China) and PICCS (Philippines) inventories.

UVE2350 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVE2420

Description

Low Viscosity Fatty acid modified Epoxy Acrylate with low taint and odour

Supply Form

100% diluent free

Product Benefits

- UVE2420 is a low viscosity oligomer with excellent reactivity. Also imparts good flexibility.
- Low irritancy (Xi free).
- Very good pigment wetting.
- Imparts excellent flow.

Suggested Applications

- Recommended for lithographic inks due to its good pigment wetting and good water balance. Also has a very good combination of viscosity and tack and good misting properties.
- Due to its low excellent flow, gloss and reactivity UVE2420 is also ideally suited for use in flexographic inks. Can also be incorporated into screen inks, for point o sale applications and overprint varnishes.
- Can also be incorporated into coatings for knotty and oily woods.

Typical characteristics

Viscosity @ 25°C	20-30Pa.s
Specific gravity @25°C	1.16 +/- 0.005
Colour (Gardner scale)	2 max
Appearance	clear, light straw liquid
Acid value	1 mg KOH/g max.

Properties of Cured Film

Tg (glass transition temp.):	56°C
Tensile elongation:	<5%
Surface energy:	33.9 Dynes

Inventory Status

UVE2420 is included on EINECS, TSCA, DSL, AICS and ECL Chemical inventories.

UVE2420 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylate

Polymer Technologies Ltd.

UVE2500-TP20

Description

Low Viscosity Acrylated Epoxy Novalac.

Supply Form

80% in TPGDA

Product Benefits

- High functionality gives a high crosslink density which imparts outstanding solvent and chemical resistance.
- The chemical structure of UVE2500-TP20 is such that coatings based upon this material exhibit a high degree of flexibility combined with outstanding hardness.
- UVE2500-TP20 also exhibits excellent heat, water and humidity resistance.
- Low surface energy imparts good flow and excellent adhesion characteristics.

Suggested Applications

- The unique combination of properties of UVE2500-TP20 makes it suitable for a wide range of substrates including, aluminium (including aluminised films), polycarbonate, ABS, copper and glass.
- UVE2500-TP20 is typically used in coatings and ink for glass, particularly cosmetic bottles, spin coats for CD's and printed circuit boards.

Typical characteristics

Viscosity @ 25°C	40-50Pa.s
Specific gravity @25°C	1.17 +/- 0.005
Appearance	clear, pale green liquid
Acid value	1 mg KOH/g max.
Colour (Gardner scale)	4 max

Properties of Cured Film

Tg (glass transition temp.):	115°C
Tensile elongation:	<5%
Surface energy:	30 Dynes

Inventory Status

UVE2500-TP20 is included on EINECS (polymeric material) and TSCA inventories.

UVE2500-TP20 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVE2501-HD20

Description

Low Viscosity Acrylated Epoxy Novalac.

Supply Form

80% in HDDA

Product Benefits

- High functionality gives a high crosslink density which imparts outstanding solvent and chemical resistance.
- The chemical structure of UVE2501-HD20 is such that coatings based upon this material exhibit a high degree of flexibility combined with outstanding hardness.
- UVE2501-HD20 also exhibits excellent heat, water and humidity resistance.
- Low surface energy and HDDA imparts good flow and excellent adhesion characteristics particularly onto plastics.

Suggested Applications

- The unique combination of properties of UVE2501-HD20 makes it suitable for a wide range of substrates including, aluminium (including aluminised films), polycarbonate, ABS, copper and glass.
- UVE2501-HD20 is typically used in coatings and inks for glass particularly cosmetic bottles, spin coats for CD's, flexographic and screen inks.

Typical characteristics

Viscosity @ 25°C	8-16Pa.s
Specific gravity @25°C	1.17 +/- 0.005
Appearance	clear, pale green liquid
Acid value	1 mg KOH/g max.
Colour (Gardner scale)	4 max

Properties of Cured Film

Tg (glass transition temp.):	115°C
Tensile elongation:	<5%
Surface energy:	30 Dynes

Inventory Status

UVE2501-HD20 is included on EINECS (polymeric material) TSCA, Australian (AICS), Canadian (NSDL) and Chinese chemical inventories.

UVE2501-HD20 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVE2531-TM25

Description

Low Viscosity Acrylated Epoxy Novalac.

Supply Form

75% in TMPTA

Product Benefits

- High functionality gives a high crosslink density which imparts outstanding solvent and chemical resistance.
- The chemical structure of UVE2531-TM25 is such that coatings based upon this material exhibit a high degree of flexibility combined with outstanding hardness.
- UVE2531-TM25 also exhibits excellent heat, water and humidity resistance.
- Low surface energy and good flexibility impart excellent adhesion characteristics, particularly onto plastics.

Suggested Applications

- The unique combination of properties of UVE2531-TM25 makes it suitable for a wide range of substrates including, aluminium (including aluminised films), polycarbonate, ABS, copper and glass.
- UVE2531-TM25 is typically used in coatings and inks for glass, printed circuit boards, offset, lithographic, screen and Flexographic inks.

Typical characteristics

Viscosity @ 25°C	40-60 Pa.s
Specific gravity @25°C	1.17 +/- 0.005
Appearance	clear, pale green liquid
Acid value	1 mg KOH/g max.
Colour (Gardner scale)	4 max

Properties of Cured Film

Tg (glass transition temp.):	115°C
Tensile elongation:	<5%
Surface energy:	30 Dynes

Inventory Status

UVE2531-TM25 is included on EINECS (polymeric material) TSCA , Australian (AICS), Canadian (NSDL) and Chinese chemical inventories.

UVE2531-TM25 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVP5170

Description

Modified polyether acrylate.

Supply Form

100% diluent free

Product Benefits

- High functionality imparts excellent reactivity.
- Very low viscosity.
- Specially formulated to impart excellent wetting for pigments and oily substrates.
- Coatings based on UVP5170 exhibit outstanding flow and gloss.
- Very low odour and irritancy

Suggested Applications

- UVP5170's low viscosity and good pigment wetting characteristics makes it ideally suitable for flexographic, digital and lithographic inks.
- Can be used for wood coatings, in particular furniture finishes, both clear and pigmented.
- Can be incorporated into OPV's to impart excellent adhesion to conventional inks without the need for a barrier coat.

Typical characteristics

Appearance:	clear, straw coloured liquid
Functionality:	3
Viscosity @ 25°C:	400 mPa.s
Acid value:	2mg KOH/g max.
Colour (Gardner scale):	3 max

Inventory Status

UVP5170 is included on EINECS, TSCA, AICS (Australia), DSL (Canada), CECS (China), ENCS (Japan), NZoC (New Zealand) chemical inventories.

UVP5170 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVP6000

Description

Flexible polyester acrylate with very low film shrinkage.

Supply Form

100% diluent free

Product Benefits

- Highly flexible oligomer with very low shrinkage therefore has outstanding adhesion to a wide range of substrates.
- Low surface energy also helps impart excellent adhesion by enhancing substrate wetting and flow.
- Unique combination of exceptional flexibility, hardness and abrasion resistance.
- Formulated to give water white films with outstanding gloss retention and non-yellowing properties for both internal and exterior applications.

Suggested Applications

- Due to its unique combination of properties UVP6000 can be used to replace or partially replace aliphatic urethane acrylates, even for exterior applications.
- UVP6000 is used for a wide range of applications which include coatings for parquet flooring, plastics (especially PVC, polycarbonate, ABS, PMMA and polyolefins), cork and aluminium; printing inks and laminating adhesives.

Typical characteristics

Viscosity @ 25°C:	>1000 Pa.s.
Viscosity @ 75°C (C&P):	5.5 Pa.s
Specific gravity @25°C:	1.18 +/- 0.005
Appearance:	clear, pale green liquid
Acid value:	5mg KOH/g max.
Colour (Gardner scale):	2 max

Properties of Cured Film

Tg (glass transition temp.):	51°C
Surface Tension:	33 Dynes

Inventory Status

UVP6000 is included on EINECS (polymeric material) and TSCA inventories.

UVP6000 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVP6000-TP20

Description

Flexible polyester acrylate with very low film shrinkage.

Supply Form

80% in TPGDA

Product Benefits

- Highly flexible oligomer with very low shrinkage therefore has outstanding adhesion to a wide range of substrates.
- Low surface energy also helps impart excellent adhesion by enhancing substrate wetting and flow.
- Unique combination of exceptional flexibility, hardness and abrasion resistance.
- Formulated to give water white films with outstanding gloss retention and non-yellowing properties for both internal and exterior applications.

Suggested Applications

- Due to its unique combination of properties UVP6000-TP20 can be used to replace or partially replace aliphatic urethane acrylates, even for exterior applications.
- UVP6000-TP20 is used for a wide range of applications which include coatings for parquet flooring, plastics (especially PVC, polycarbonate, ABS, PMMA and polyolefins), cork and aluminium; printing inks and laminating adhesives.

Typical characteristics

Viscosity @ 25°C	30-45Pa.s
Specific gravity @25°C	1.18 +/- 0.005
Appearance	clear, pale green liquid
Acid value	5mg KOH/g max.
Colour (Gardner scale)	2 max

Properties of Cured Film

Tg (glass transition temp.):	51°C
Tensile Strength:	46N _m ⁻²
Surface energy:	33 Dynes

Inventory Status

UVP6000-TP20 is included on EINECS, TSCA and MITI inventories.

UVP6000-TP20 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVP6010-PE30

Description

Flexible polyester acrylate with very low film shrinkage.

Supply Form

70% in Phenoxyethyl acrylate

Product Benefits

- Highly flexible oligomer with very low shrinkage (Ca. 2%) therefore has outstanding adhesion to a wide range of substrates.
- Low surface energy also helps impart excellent adhesion by enhancing substrate wetting and flow.
- Unique combination of exceptional flexibility, hardness and abrasion resistance.
- Formulated to give water white films with outstanding gloss retention and non-yellowing properties for both internal and exterior applications.

Suggested Applications

- Due to its unique combination of properties UVP6010-PE30 can be used to replace or partially replace aliphatic urethane acrylates, even for exterior applications.
- UVP6010-PE30 is used for a wide range of applications which include coatings for plastics (especially PVC, polycarbonate, ABS, PMMA and polyolefins), steel and aluminium; screen inks and laminating adhesives.

Typical characteristics

Viscosity @ 25°C: 5-9 Pa.s. (Provisional)
Specific gravity @25°C: 1.16 +/- 0.005
Appearance: clear, pale green liquid
Acid value: 4mg KOH/g max.
Colour (Gardner scale): 2 max

Properties of Cured Film

Tg (glass transition temp.): 38°C
Surface Tension: 35.8 Dynes

Inventory Status

UVP6010-PE30 is included on EINECS (polymeric material), TSCA, Chinese, Japanese and Korean chemical inventories.

UVP6010-PE30 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVP6021-HD15

Description

Flexible polyester acrylate with very low film shrinkage.

Supply Form

85% in HDDA

Product Benefits

- Extremely versatile oligomer.
- Highly flexible oligomer with very low shrinkage therefore has outstanding adhesion to a wide range of substrates.
- Low surface energy also helps impart excellent adhesion by enhancing substrate wetting and flow.
- Unique combination of exceptional flexibility, hardness and abrasion resistance.
- Formulated to give water white films with outstanding gloss retention and non-yellowing properties for both internal and exterior applications.

Suggested Applications

- Due to its unique combination of properties UVP6021-HD15 can be used to replace or partially replace aliphatic urethane acrylates, even for exterior applications.
- UVP6021-HD15 is used for a wide range of applications which include coatings for parquet flooring, plastics (especially PVC, polycarbonate, ABS, PMMA and polyolefins), cork and aluminium; printing inks and laminating adhesives.

Typical characteristics

Viscosity @ 25°C	30-45Pa.s
Specific gravity @25°C	1.18 +/- 0.01
Appearance	clear, pale green liquid
Acid value	6mg KOH/g max.
Colour (Gardner scale)	3 max

Properties of Cured Film

Tg (glass transition temp.):	51°C
Tensile Strength:	46Nm ⁻²
Surface energy:	33 Dynes

Inventory Status

UVP6021-HD15 is included on EINECS and TSCA inventories.

UVP6021-HD15 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVP6150

Description

Flexible polyester acrylate with very low film shrinkage.

Supply Form

100% diluent free

Product Benefits

- Highly flexible oligomer with very low shrinkage therefore has outstanding adhesion to a wide range of substrates.
- Relatively low viscosity.
- Low surface energy also helps impart excellent adhesion by enhancing substrate wetting and flow.
- Unique combination of exceptional flexibility, good hardness and abrasion resistance.
- Formulated to give water white films with outstanding gloss retention and non-yellowing properties for both internal and exterior applications.

Suggested Applications

- Due to its unique combination of properties UVP6150 can be used to replace or partially replace aliphatic urethane acrylates.
- UVP6150 is used for a wide range of applications which include coatings for parquet flooring, plastics (especially PVC, polycarbonate, ABS, PMMA and polyolefins), cork and aluminium; printing inks and laminating adhesives.

Typical characteristics

Viscosity @ 25°C:	1,500-2,500 Pa.s.
Viscosity @ 75°C (C&P):	2.5 Pa.s
Specific gravity @25°C:	1.17 +/- 0.005
Appearance:	clear, pale green liquid
Acid value:	5mg KOH/g max.
Colour (Gardner scale):	3 max

Properties of Cured Film

Surface Tension:	31 Dynes
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Inventory Status

UVP6150 is included on EINECS (Polymer).

UVP6150 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVP6300-DP20

Description

Tri-functional polyester acrylate with very low film shrinkage.

Supply Form

80% in DPGDA

Product Benefits

- Extremely flexible oligomer with very low shrinkage which has outstanding adhesion to a wide range of substrates.
- High functionality imparts improved chemical, humidity and abrasion resistance.
- Low surface energy helps impart excellent adhesion by enhancing substrate wetting and flow.

Suggested Applications

- Due to its unique combination of properties UVP6300-DP20 can be used to replace or partially replace aliphatic urethane acrylates.
- UVP6300-DP20 is used for a wide range of applications which include coatings for flooring (both wood and vinyl), plastics (especially PVC, polycarbonate, ABS, PMMA and polyolefins), aluminium, and laminating adhesives.
- UVP6300-DP20 is particularly suited for use in printing inks due to its high functionality, excellent reactivity combined with its outstanding wetting characteristics.

Typical characteristics

Viscosity @ 25°C	40-60 Pa.s
Specific gravity @25°C	1.18 +/- 0.005
Appearance	clear, pale green liquid
Acid value	6mg KOH/g max.
Colour (Gardner scale)	4 max

Properties of Cured Film

Tg (glass transition temp.):	48°C
Surface energy:	31 Dynes

Inventory Status

UVP6300-DP20 is included on EINECS (Polymer)

UVP6300-DP20 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVP6505

Description

Low viscosity polyester acrylate.

Supply Form

100% diluent free

Product Benefits

- High functionality imparts excellent reactivity.
- Very Low viscosity.
- Good pigment and substrate wetting.
- High crosslink density helps to enhance abrasion and solvent resistance.
- Very good flexibility.

Suggested Applications

- UVP6505's low viscosity and good pigment wetting characteristics is ideal for flexographic and screen inks.
- Can be incorporated into coatings for wood, in particular furniture finishes.
- Imparts excellent adhesion on many plastic substrates including PVC, polycarbonate and ABS.

Typical characteristics

Appearance:	clear, straw coloured liquid
Functionality:	4
Viscosity @ 25°C:	0.5-1.2 Pa.s
Specific gravity @25°C:	1.2 +/- 0.005
Acid value:	12mg KOH/g max.
Colour (Gardner scale):	4 max

Inventory Status

UVP6505 EINECS (polymeric material), TSCA, DSL, AICS and ECN chemical inventories

UVP6505 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVP6535

Description

Low viscosity polyester acrylate with low film shrinkage.

Supply Form

100% diluent free

Product Benefits

- Low viscosity oligomer with very low film shrinkage resulting in outstanding adhesion characteristics on a wide range of plastics which include polyolefin's, polycarbonate, polyamides, ABS, PMMA and PVC.
- Excellent pigment and substrate wetting.
- Used to formulate coatings with a unique combination of flexibility and hardness.
- Excellent reactivity.

Suggested Applications

- UVP6535's combination of low viscosity, low film shrinkage and excellent pigment wetting characteristics makes it an ideal oligomer for flexographic and screen inks.
- It is an extremely versatile material which can be used for a large range of applications including coatings for cork; primers, sealants and topcoats for both furniture and parquet flooring; vinyl flooring and clear and pigmented systems for plastics.
- Can be used to replace or partially replace reactive diluents to reduce film shrinkage and therefore impart improved performance, particularly on plastics.

Typical characteristics

Appearance: clear, pale straw liquid
Viscosity @ 25°C: 0.8-1.6 Pa.s
Specific gravity @25°C: 1.13 +/- 0.005
Acid value: 8mg KOH/g max.
Colour (Gardner scale): 3 max
Refractive index: 1.4910

Properties of Cured Film

Tg (glass transition temp.): 35°C
Surface Tension: 39 Dynes

Inventory Status

UVP6535 EINECS (polymeric material), TSCA.

UVP6535 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVP6540

Description

Low viscosity tetra-functional polyester acrylate.

Supply Form

100% diluent free

Product Benefits

- High functionality imparts excellent reactivity.
- Low viscosity combined with low film shrinkage.
- Outstanding pigment wetting reducing time required to disperse pigments during manufacture of inks and pigmented coatings.
- High crosslink density helps to enhance abrasion and solvent resistance but still retains good intercoat adhesion.
- Very good flexibility combined with excellent substrate wetting imparting good adhesion.
- Very low odour.

Suggested Applications

- UVP6540's low viscosity and excellent pigment wetting characteristics makes it ideally suitable for flexographic, digital and screen inks.
- Can be incorporated into coatings for wood, plastic and metals.
- Suitable for multi-colour printing where intercoat adhesion is required.

Typical characteristics

Appearance:	clear, straw coloured liquid
Functionality:	4
Viscosity @ 25°C:	1.4-2.8 Pa.s
Specific gravity @25°C:	1.11 +/- 0.005
Acid value:	10mg KOH/g max.
Colour (Gardner scale):	4 max

Inventory Status

EINECS (polymeric material), TSCA.

UVP6540 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVP6565

Description

Very reactive, low viscosity polyester acrylate.

Supply Form

100% diluent free

Product Benefits

- High functionality imparts excellent reactivity.
- Very Low viscosity.
- Good pigment and substrate wetting.
- High crosslink density helps to enhance abrasion and solvent resistance.

Suggested Applications

- UVP6565's low viscosity and good pigment wetting characteristics are ideal for flexographic, digital and screen inks.
- Can be Incorporated into lithographic inks to enhance cure speed while maintaining good pigment wetting
- For use in coatings for plastics where excellent hardness and abrasion resistance are required.

Typical characteristics

Appearance:	clear, straw coloured liquid
Functionality:	5
Viscosity @ 25°C:	1.2-2.0 Pa.s
Acid value:	8mg KOH/g max.
Colour (Gardner scale):	2 max

Inventory Status

UVP6565 EINECS (polymeric material), TSCA, DSL (Canada)

UVP6565 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVP6600

Description

Low viscosity modified polyester acrylate.

Supply Form

100% diluent free

Product Benefits

- High functionality imparts excellent reactivity.
- Low viscosity.
- Specially formulated to impart excellent pigment and substrate wetting.
- High crosslink density helps to enhance abrasion and solvent resistance.
- Very good flexibility.

Suggested Applications

- UVP6600's low viscosity and good pigment wetting characteristics makes it ideally suitable for flexographic, digital and screen inks.
- Can be incorporated into coatings for wood, in particular furniture finishes, both for clear and pigmented systems.
- Imparts excellent adhesion on many plastic substrates including PVC, polycarbonate and ABS.

Typical characteristics

Appearance:	clear, straw coloured liquid
Functionality:	6
Viscosity @ 25°C:	2-4 Pa.s
Acid value:	12mg KOH/g max.
Colour (Gardner scale):	3 max

Inventory Status

UVP6600 EINECS (polymeric material)

UVP6600 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVP6722

Description

Flexible polyester acrylate.

Supply Form

100% diluent free

Product Benefits

- Highly flexible oligomer with low shrinkage (approximately 4%) which has outstanding adhesion to a wide range of substrates.
- Excellent substrate and pigment wetting combined with excellent flow.
- Unique combination of outstanding flexibility, hardness and abrasion resistance.
- Formulated to give water white films with very good gloss retention.

Suggested Applications

- Due to its unique combination of properties UVP6722 can be used to replace or partially replace aliphatic urethane acrylates for demanding applications such as parquet and PVC flooring.
- Can be used to coat a wide range of plastics (in both clear and pigmented systems) including PVC, polycarbonate, ABS, and PMMA.
- Also suitable for printing inks, wood coatings (in topcoats, sealants and primers) and laminating adhesives.

Typical characteristics

Viscosity @ 25°C: 28 Pa.s.
Specific gravity @25°C: 1.15
Appearance: clear, pale straw liquid
Acid value: 8mg KOH/g max.
Colour (Gardner scale): 2 max

Properties of Cured Film

Tg (glass transition temp.): 45°C
Surface Tension: 34 Dynes

Inventory Status

UVP6722 is included on EINECS (polymeric material) and TSCA inventories.

UVP6722 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVP6733

Description

Tri-functional low viscosity polyester acrylate.

Supply Form

100% diluent free

Product Benefits

- Low viscosity oligomer with low film shrinkage (about 5%) imparting outstanding adhesion characteristics on a wide range of plastics which include polyolefin's, polycarbonate, polyamides, ABS, PMMA and PVC.
- Formulated to impart excellent pigment and substrate wetting.
- Used to formulate coatings with a unique combination of flexibility and hardness.
- Excellent reactivity.

Suggested Applications

- UVP6733's combination of low viscosity, low film shrinkage and excellent pigment wetting characteristics makes it an ideal oligomer for flexographic, digital and screen inks. Also suitable for offset inks.
- It is an extremely versatile material which can be used for a large range of applications including; primers, sealants and topcoats for furniture and sealants and primers for parquet flooring; vinyl flooring and clear and pigmented systems for plastics.
- Due to its low film shrinkage is also suitable for laminating and pressure sensitive adhesives

Typical characteristics

Appearance: clear, pale straw liquid
Viscosity @ 25°C: 20 Pa.s
Specific gravity @25°C: 1.15
Acid value: 8mg KOH/g max.
Colour (Gardner scale): 2 max
Refractive index: 1.4910

Properties of Cured Film

Tg (glass transition temp.): 36°C
Surface Tension: 34 Dynes

Inventory Status

UVP6733 EINECS (polymeric material), TSCA and China.

UVP6733 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVP6777

Description

Tri-functional polyester acrylate.

Supply Form

100% diluent free

Product Benefits

- Polyester acrylate which imparts low film shrinkage (about 4%) and exhibits outstanding adhesion characteristics on a wide range of plastics which include polyolefin's, polycarbonate, polyamides, ABS, PMMA and PVC.
- Formulated to impart excellent pigment and substrate wetting.
- Used to formulate inks and coatings with a unique combination of flexibility and hardness.
- Excellent reactivity.

Suggested Applications

- UVP6777's combination of low film shrinkage and excellent pigment wetting characteristics makes it an ideal oligomer for lithographic, flexographic and screen inks.
- It is an extremely versatile material which can be used for a large range of applications including; primers, sealants and topcoats for furniture and sealants and primers for parquet flooring; vinyl flooring and clear and pigmented systems for plastics.
- Due to its low film shrinkage is also suitable for laminating and pressure sensitive adhesives

Typical characteristics

Appearance: clear, pale green liquid
Viscosity @ 25°C: 70-110 Pa.s
Specific gravity @25°C: 1.15
Acid value: 8mg KOH/g max.
Colour (Gardner scale): 2 max
Refractive index: 1.4910

Properties of Cured Film

Tg (glass transition temp.): 46°C
Surface Tension: 33 Dynes

Inventory Status

UVP6777 EINECS (polymeric material), TSCA and China.

UVP6777 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVS7500

Description

Modified Polyether Acrylate for Inks and Pigment Dispersions.

Product Benefits

- UVS7500 is a modified acrylated dispersing resin specially formulated to impart outstanding pigment wetting characteristics. Inks based on UVS7500 are notable for their excellent yield values, gloss and ease of use on press.
- High molecular weight reduces absorption into porous substrates.
- Hydrophobic backbone reduces penetration of moisture through coating.
- Very Low odour
- Low film shrinkage combined with low surface energy, imparts adhesion to rigid and awkward substrates.

Suggested Applications.

- Designed for the formulation of UV and EB curable pigment pastes. Can be used for offset, flexographic, lithographic, silk screen and digital printing inks.
- Can also be incorporated into coatings and inks as an adhesion promoter for awkward plastics such as polyolefins or used in coatings to prevent absorption into porous substrates.

Typical characteristics

Viscosity @ 25°C	35-55 Pas.
Acid value	1mg KOH/g max.
Colour (Gardner scale)	2 max

Inventory Status

EINECS (polymeric material), TSCA, AICS, DSL, ECL(Korea), ECN (Japan), PICCS (Philippines), Chinese chemical inventories.

UVS7500 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVS7521

Description

Oligomer Designed for UV Pigment Concentrates and Adhesion to Awkward Substrates.

Product Benefits

- Extremely low film shrinkage combined with low surface energy, imparts outstanding adhesion to a wide range of plastic substrates including polyolefins.
- UVS7521 imparts outstanding pigment wetting characteristics with both organic and inorganic pigments, therefore improving grinding efficiency in the production of pigment concentrates.
- Hydrophobic backbone reduces penetration of moisture through coating.

Suggested Applications.

- Designed for the formulation of UV and EB curable flexographic, screen and digital inks and laminating adhesives. Outstanding wetting and stability with a wide range of pigments.
- Can also be incorporated into coatings and inks as an adhesion promoter for awkward plastics such as polyolefins.

Typical characteristics

Non volatile content (NVC)	99% min
Viscosity @ 25°C	3000-6000 cps.
Acid value	2mg KOH/g max.
Colour (Gardner scale)	2 max

Inventory Status

EINECS (polymeric material), TSCA, AICS, DSL, ECL(Korea), ECN (Japan), PICCS (Philippines), Chinese chemical inventories.

UVS7521 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVS7600

Description

Modified Polyether Acrylate for Inks, Pigment Dispersions and Laminating Adhesives.

Product Benefits

- UVS7600 is a modified acrylated dispersing resin specially formulated to impart outstanding pigment wetting characteristics. Inks based on UVS7600 are notable for their excellent yield values (even with high pigment loading), gloss and ease of use on press.
- High molecular weight reduces absorption into porous substrates.
- Hydrophobic backbone reduces penetration of moisture through coating.
- Low odour.
- Low film shrinkage combined with low surface energy, imparts adhesion to rigid and awkward substrates.

Suggested Applications.

- Designed for the formulation of UV and EB curable pigment pastes. Can be used for offset, flexographic, lithographic, silk screen and digital printing inks.
- Can also be incorporated into coatings and inks as an adhesion promoter for awkward plastics such as polyolefins or used in coatings to prevent absorption into porous substrates.
- Ideally suited for use in laminating adhesives .

Typical characteristics

Viscosity @ 25°C	35-55 Pas.
Acid value	2mg KOH/g max.
Colour (Gardner scale)	4 max

Inventory Status

EINECS (polymeric material), TSCA, AICS, DSL, ECL(Korea), ECN (Japan), PICCS (Philippines), Chinese chemical inventories.

UVS7600 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVU9075

Description

Urethane modified polyester acrylate with very low film shrinkage and outstanding flexibility.

Supply Form

100% diluent free

Product Benefits

- Highly flexible oligomer with very low shrinkage therefore has outstanding adhesion to a wide range of substrates. Improved elasticity compared to UVP6000.
- Low surface energy also helps impart excellent adhesion by enhancing substrate wetting and flow.
- Unique combination of exceptional flexibility, hardness and abrasion resistance.
- Formulated to give water white films with outstanding gloss retention and non-yellowing properties for both internal and exterior applications.
- Extremely economical to use, especially when compared to aliphatic urethane acrylates, with the added benefit of much faster cure response.

Suggested Applications

- UVU9075 is used for a wide range of applications which include coatings for parquet flooring, plastics (especially PVC, polycarbonate, ABS, PMMA and polyolefins), cork and aluminium; printing inks and laminating adhesives.

Typical characteristics

Viscosity @ 25°C:	>1000 Pa.s.
Viscosity @ 75°C (C&P):	Ca.8.0 Pa.s
Specific gravity @25°C:	1.18 +/- 0.005
Appearance:	clear, pale green liquid
Acid value:	5mg KOH/g max.
Colour (Gardner scale):	2 max

Properties of Cured Film

Tg (glass transition temp.):	51°C
Surface Tension:	33 Dynes

Inventory Status

UVU9075 is included on EINECS and TSCA inventories.

UVU9075 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVU9165

Description

Di-functional urethane acrylate (supplied 100% diluent free)

Product Benefits

- Excellent pigment wetting, (particularly with yellow pigments) combined with excellent water balance.
- Extremely fast reactivity, comparable to products with higher functionality.
- Imparts outstanding hardness combined with excellent abrasion resistance and toughness.
- Extremely good adhesion characteristics to a wide range of plastic substrates, steel and aluminium.
- Very Low odour and irritancy (PII value 0.9) – HEA and PETA free.

Suggested Applications

- While designed to have excellent water balance for lithographic inks, the fast reactivity and pigment wetting of UVU9165, combined with its relatively low viscosity, also makes UVU9165 an oligomer of choice for flexographic and screen inks.
- Suitable for coatings for plastics and paper where prolonged exterior weatherability is not required.
- UVU9165 can be used in primers for aluminium and steel.

Typical characteristics

Viscosity @ 25°C	35-65Pa.s	Tg	55°C
Appearance	clear, pale liquid	PII value	0.9
Acid value	1 mg KOH/g max.		
Colour (Gardner)	3 max		

Inventory Status

UVU9165-TP30 is included on EINECS, TSCA inventories.

UVU9165 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVU9200-TP30

Description

Di-functional aliphatic urethane acrylate

Supply Form

70% in TPGDA

Product Benefits

- Aliphatic urethane acrylate with fast cure response.
- Combines extremely good flexibility with outstanding toughness and abrasion resistance.
- Extremely good adhesion characteristics to a wide range of substrates.

Suggested Applications

- UVU9200-TP30 is an extremely versatile aliphatic urethane which can be used in coatings for substrates such as PVC, wood and cork. Its outstanding toughness makes it ideal for flooring, both vinyl and parquet.
- Low film shrinkage makes it suitable for adhesives applications.
- UVU9200-TP30's excellent cure response means that it is particularly suitable for printing inks for awkward substrates (particularly screen, letterpress and dry offset)

Typical characteristics

Viscosity @ 25°C	70-100Pa.s
Appearance	clear, pale liquid
Acid value	1 mg KOH/g max.
Colour (APHA scale)	250 max

Inventory Status

UVU9200-TP30 is included on EINECS, TSCA inventories.

UVU9200-TP30 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVU9221-HD30

Description

Di-functional aliphatic urethane acrylate

Supply Form

70% in HDDA

Product Benefits

- Aliphatic urethane acrylate with fast cure response.
- Combines extremely good flexibility with outstanding toughness and abrasion resistance.
- Extremely good adhesion characteristics to a wide range of substrates.

Suggested Applications

- UVU9221-HD30 is an extremely versatile aliphatic urethane which can be used in coatings for substrates such as PVC, wood and cork. Its outstanding toughness makes it ideal for flooring, both vinyl and parquet.
- Low film shrinkage makes it suitable for adhesives applications.
- UVU9221-HD30's excellent cure response means that it is particularly suitable for printing inks for awkward substrates (particularly screen, letterpress and dry offset)

Typical characteristics

Viscosity @ 25°C	20-40Pa.s
Appearance	clear, pale liquid
Acid value	1 mg KOH/g max.
Colour (APHA scale)	250 max

Inventory Status

UVU9221-HD30 is included on EINECS, TSCA inventories.

UVU9221-HD30 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.

Polymer Technologies Ltd.

UVU9321-HD12

Description

Di-functional aliphatic urethane acrylate

Supply Form

88% in HDDA

Product Benefits

- Aliphatic urethane acrylate with very fast cure response.
- Combines extremely good flexibility with outstanding toughness and abrasion resistance.
- Extremely good adhesion characteristics to a wide range of plastic substrates.
- Low odour.
- Non-yellowing

Suggested Applications

- UVU9321-HD12 is ideally suited for use in coatings and silk screen printing inks for a wide range of plastic substrates.
- Combination of toughness and flexibility makes it suitable for parquet and vinyl flooring.
- Low film shrinkage makes it suitable for adhesives applications.

Typical characteristics

Viscosity @ 65°C	1.3-2.3 Pa.s
Appearance	Clear, pale liquid
Acid value	1 mg KOH/g max.
Colour (Gardner scale)	1-2 max

Inventory Status

UVU9321-HD12 is included on EINECS (polymer), TSCA and AICS inventories.

UVU9321-HD12 is completely compatible with most reactive diluents; epoxy, polyester and urethane acrylates.