PHOTOMER® 6210
Aliphatic Urethane Acrylate

Product Data Sheet

General Information

PHOTOMER® 6210 is a proprietary, non-yellowing aliphatic urethane developed for radiation curable systems. This premium oligomer with very low viscosity provides excellent light stability, chemical resistance, abrasion resistance and flexibility. The low viscosity of this urethane acrylate allows formulators wide formulating latitude, permits high oligomer content or lower formulation viscosities. Also this oligomer exhibits low odor, good cure speed and excellent adhesion to various plastic and metal substrates.

Specification

Appearance	**Visual**	**Clear, medium viscosity liquid**
Viscosity @ 25 °C	**Brookfield, ISO 2555**	**8,500 - 15,000 mPa·s**
Colour (Gardner)	**ISO 4630**	**≤ 1**
Isocyanate content (NCO)		**≤ 0.1 %**

Additional Typical Properties

Specific Gravity @ 25°C	1.126 g/cm^3
Weight/Gallon @ 25°C	9.4 lbs
Draize Value	Mild
Molecular Weight	1400 g/mol
Refractive Index @ 20°C	1.4900
Weatherability	93% gloss retention@ 2500 hrs of exposure to 313 nm QUV light

Application

PHOTOMER® 6210 is recommended for clear overprint varnishes where low application viscosities and high performance is required. It exhibits excellent physical properties including adhesion and abrasion resistance to a variety of plastic, metal and paper substrates. PHOTOMER® 6210 forms tough, durable films with good solvent resistance, high surface hardness and good flexibility.

Formulated product properties will depend on the actual reactive monomers, oligomers and additives utilized.

IGM Resins B.V. (Head office) – Compenstraat 49 – 5145 RM Waalwijk – The Netherlands T: +31 (0) 416 316 657 – F: +31 (0) 416 564 632 – E: sales@igmresins.com – I : www.igmresins.com

Mechanical Properties of PHOTOMER® 6210 with 33% TRPGDA

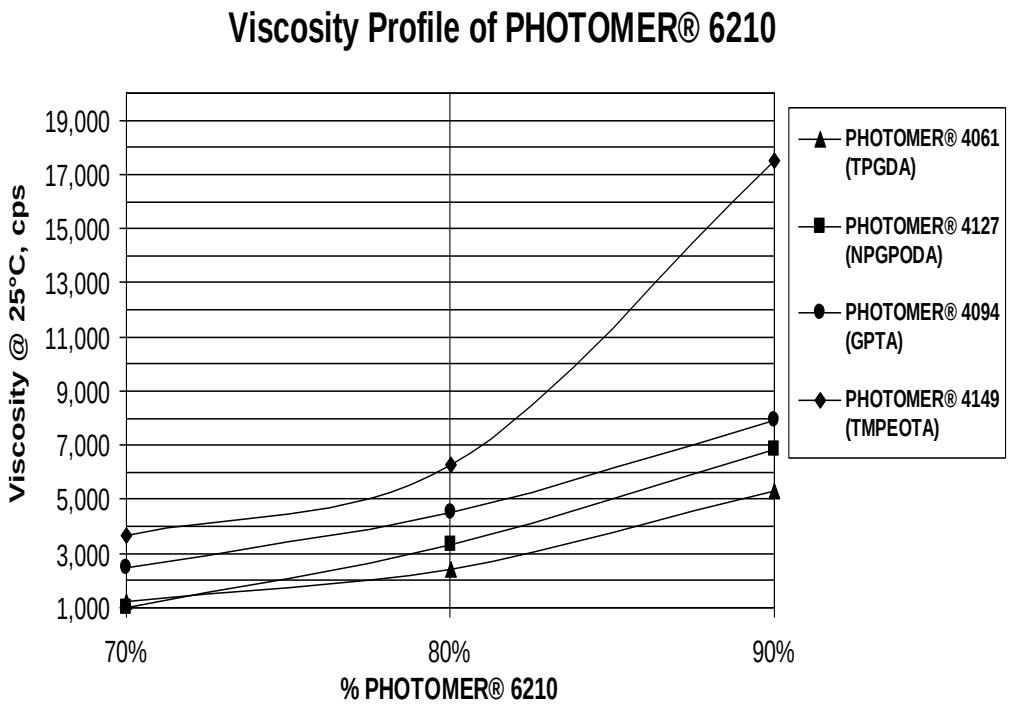
•Tensile strength:	1400 psi
•Elongation:	40%
•Young's Modulus:	12,000 psi/in
•Shrinkage on cure:	0.51 %

PHOTOMER® 6210	
Film Studies	**Aluminum**
Scuff Resistance	Good
Gloss, 60°	100
Pencil Hardness	BH
Solvent Resistance	Fair
Conical Mandrel	< 0.25"

Cure Conditions: RDS Rod #3;
0.27 mils wet film thickness;
4 % Omnirad® BDK;
500 ft/min; one 300 watt/inch UV lamp.

Viscosity Reduction Profile

Viscosity reduction studies with various monomers as depicted in the following graph demonstrate the relative ease in diluting PHOTOMER® 6210 oligomer. Second generation PHOTOMER® monomers and conventional monomers representing a broad spectrum of multifunctional reactive diluents were found to be very compatible over a wide range.



IGM Resins B.V. (Head office) – Gompenstraat 49 – 5145 RM Waalwijk – The Netherlands T: +31 (0) 416 316 657 – F: +31 (0) 416 564 632 – E: sales@igmresins.com – I : www.igmresins.com

Formulation Recommendations

	Polycarbonate	Paper	Vinyl Tile
PHOTOMER® 4127	20.0	---	23.0
PHOTOMER® 4061	---	25.0	---
PHOTOMER® 4149	15.0	38.0	12.0
PHOTOMER® 4035	18.0	---	15.0
PHOTOMER® 6210	40.0	30.0	46.0
Omnirad® BDK	4.0	1.0	4.0
Omnirad® BP	2.0	4.0	---
PHOTOMER® 4967	1.0	2.0	---
Properties			
Viscosity @ 25 °C, cps	160	150	300
Cure Speed, ft/min	50	100	50
Gloss	Good	Good	Good
Scuff Resistance	Good	Good	Good
Pencil Hardness	6H	5H	6H
Solvent Resistance (MEK Double Rubs)	100	100	42
Adhesion (#600 Cellotape)	100 %	100 %	100 %
Cure Conditions:	RDS Rod #3; 0.27 mils wet film thickness; one 300 watt/inch UV lamp.		

Storage & Handling

Storage must be in a cool, shaded, well ventilated and dry area away from direct sources of heat and sunlight. Subject to appropriate storage under the usual storage and temperature conditions, our products are durable for at least 12 months.

PHOTOMER® 6210 may solidify or crystallize if subjected to cold or freezing conditions. Allow to warm to 50 °C until a uniform product is obtained, mix on a drum roller if necessary.

PHOTOMER® 6210 should be handled in accordance with good industrial practice. Further information is provided in the material safety data sheet which is available on request.

Regulatory Status

TSCA (USA), EU (Europe), IECSC (China), DSL (Canada), PICCS (Philippines), AICS (Australia), NZIoC (New Zealand), ECL (Korea), TCSI (Taiwan)

FREIGHT CLASSIFICATION
PHOTOMER® 6210 is classified as: Synthetic Resins NOIBN (Resin or Resin Compounds).

Packaging

PHOTOMER® is available in 55 gallon (200 liter) lined openhead steel drums

IGM Resins B.V. (Head office) – Compenstraat 49 – 5145 RM Waalwijk – The Netherlands T: +31 (0) 416 316 657 – F: +31 (0) 416 564 632 – E: sales@igmresins.com – I : www.igmresins.com