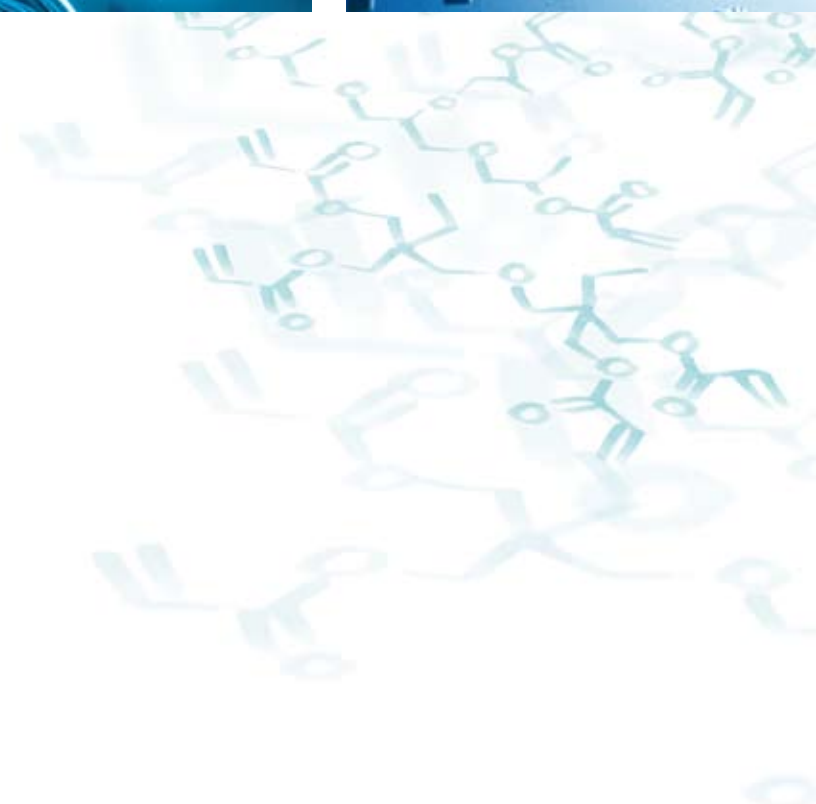
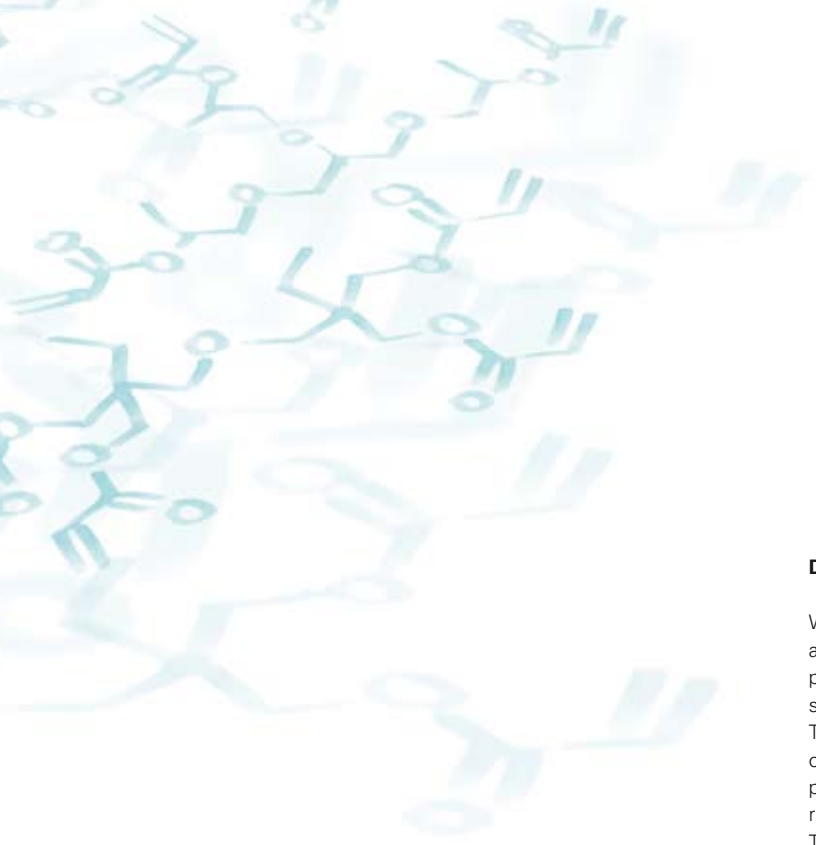


Product Guide



RAHN | EnergyCuring

Your partner for excellence



Disclaimer

We have obtained this information wholly or partially from suppliers and from other sources. As we have no insight into the manufacturing processes and application procedures, the recommendations and suggestions are offered without obligation or guarantee. The customer must determine and test for himself the suitability of the products for its purpose and the substances present or not present in the goods. The details are thus conveyed with every reservation and shall imply no commitment or liability on our part. There will be no legitimate claim for any processing-/consequential damage nor responsibility regarding patent infringements. If the material is a development product, we cannot guarantee at this stage a continuous commercial supply and/or a consistent quality, unless specially agreed upon.

GENOMER*, GENOCURE*, GENORAD* and GENOPOL* are registered trademarks of RAHN AG.

MIRAMER is a trademark of Miwon Commercial Co., Ltd.

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‘Worldwide support for your energy curing systems’

RAHN is a premier worldwide supplier of additives, oligomers, monomers, photo-initiators and other customized specialty chemicals. Our products are used in ultraviolet and electron beam cure technologies and are essential components of high performance inks, coatings, adhesives, medical and other applications.

The range of products are established under the trademarks GENOMER*, GENORAD*, GENOCURE* and GENOPOL* and are widely used industry standards.

RAHN’s key offerings are

- Full range of specialized UV/EB curable products
- Consistent product quality available worldwide
- High quality and high purity products
- Customer focused product development
- Technical consulting and support
- Specialized application laboratories
- Worldwide network of partnerships
- Health & safety and logistics support
- Industry expertise, dedicated to energy curing
- Top class customer service

Technical Literature

Additional RAHN-documents are available. For more details click on our web product browser at www.rahn-group.com or contact your local RAHN-sales representative for further information.

Product Brochures

- Asia Pacific Product Guide
- Product Line Presentation Reactive Diluents



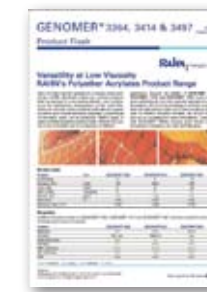
Lab Reports

- UV Curing Flexographic Inks
- UV Inkjet Inks
- UV Offset Inks



Product Flash

- ACMO
- GENOMER* 3364, 3414 & 3497
- GENOMER* 4217 & 4425



Lab Reports

- Adhesion of Oligomers to Glass and Metal Substrates
- Electron Beam Curing Laminating Adhesives
- LA, Laminating Adhesives



- GENOMER* 7227



- GENORAD* 21



- Oligomer Screening
- PSA, Pressure Sensitive Adhesives
- Taber and Sand Feeder



- GENOPOL Photoinitiators



- Printed Electronics



About RAHN

RAHN is a leading and independent supplier of UV/EB curing raw materials. We develop our own commercial products with a special emphasis on additives, oligomers, photoinitiators and reactive diluents.

Our philosophy

The company's philosophy is based on a high level of customer support with cutting edge technical data combined with up-to-date health, safety and regulatory information. With two laboratories in Switzerland and the USA, RAHN has the ability to provide local customized solutions and expertise in various application fields.

Experience

In the product development and product application area RAHN supports its clients with more than 25 years of experience in radiation curing.

Product development

The product development laboratory identifies new chemistries and solutions for our customers. Customer specific solutions and broader market-driven products are the results of this resource. If you are looking for a special solution or simply help with finishing a formulation, talk to us.



The development of new products and application / startingpoint formulations as well as customized projects are supported by our development company RadLab AG.

Graphic Arts

Our laboratory in Switzerland is focused on graphic arts and offers full support for all the major printing processes utilizing energy curing formulations. The laboratory is well equipped to measure offset transfer properties and water balance behavior as well as all the major physical properties required by printing inks and coatings.

Adhesives

Our laboratory in the USA is specialized for adhesives and is well equipped for all of the relevant testing required for the latest adhesive technologies including shear adhesion failure temperature (SAFT).

You are invited to test our knowledge and specialized skills, please call your local RAHN-sales representative or our offices.



Contents

| Products | Page | Products | Page |
|-------------------------------|-------|----------------------------|-------|
| Technical Literature | 4-5 | Specialities | 16-17 |
| Reactive Diluents | 8-9 | Additives | 16-17 |
| Epoxy Acrylates | 10-11 | Photoinitiators | 18-19 |
| Polyester/Polyether Acrylates | 10-11 | Synergists | 20-21 |
| Urethane Acrylates | 12-13 | Polymeric Photoinitiators | 20-21 |
| Oligoamines | 14-15 | Dental & Cosmetic Products | 22-23 |
| Co-Resins | 14-15 | | |

This guide includes our most successfully used and commercially fully supported products. If your requirements cannot be met with any of these products, please contact us directly to help you find a solution.

Identification Code

| Diluents | GENOMER* Product-Code |
|--|---|
| M22 = GENOMER* 1122 | 1 st number: Product Group |
| PP = PPTA | 2 nd number: Functionality |
| EHA = 2-Ethylhexyl-Acrylate | 3 rd and 4 th number: Product reference |
| ETM = TMP(EO) ₃ TA | |
| HD = HDDA | |
| TM = TMPTA | |
| TP = TPGDA | |
| GP = GPTA | |
| NP = NPG(PO) ₂ DA | |
| Ask for other available diluents | |
| Product Data | Properties |
| Color A = APHA | ++++ = excellent |
| Color G = Gardner | +++ = good |
| 2 = Literature Value | ++ = moderate |
| | + = low |
| HS & Registration Status | |
| Classification and labelling according to 1272/2008/EC. For up-to-date classification data please always refer to the corresponding MSDS | GHS05 = Corrosion |
| | GHS06 = Skull and crossbones |
| | GHS07 = Exclamation mark |
| | GHS08 = Health hazard |
| | GHS09 = Environment |
| L = Listed | H301 = Toxic if swallowed |
| ∅ = Not listed | H302 = Harmful if swallowed |
| S = SNUR | H312 = Harmful in contact with skin |
| D = DSL | H314 = Causes severe skin burns and eye damage |
| N = NDSL | H315 = Causes skin irritation |
| NN = Notified | H317 = May cause an allergic skin reaction |
| U = Under Investigation | H318 = Causes serious eye damage |
| LVE = Low Volume Exemption (< 1MT/y) | H319 = Causes serious eye irritation |
| P = Pre-Registered | H335 = May cause respiratory irritation |
| E = Exempt | H361 = Suspected of damaging fertility or the unborn child |
| R = Registered | H372 = Causes damage to organs through prolonged or repeated exposure |
| - = not classified as hazardous | H400 = Very toxic to aquatic life |
| REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals (EU) | H410 = Very toxic to aquatic life with long lasting effects |
| TSCA = Toxic Substances Control Act (USA) | H411 = Toxic to aquatic life with long lasting effects |
| CEPA = Canadian Environmental Protection Act | H412 = Harmful to aquatic life with long lasting effects |
| IECSC = Inventory of Existing Chemical Substances (China) | |
| METI = Ministry of Economy, Trade and Industry (Japan) | |
| ECL = Korean Existing Chemicals List (Korea) | |



Reactive Diluents

| Product | Product Data (Typical Values) | | | | | | | | HS & Registration | | | | | Properties | | | | | Applications | | | | | Key Features | | | | | | | | | | |
|----------------------------------|-------------------------------|---------------|-------|-----------------------|--|------------------|-----------------------------|------------------|-------------------------|---------------------------------|--------------|-------------|-------------|------------|------|-----|------------|-------|--------------|----------|---------------------|----------|-------------|--------------|------------|-------------|---------------------|---------------|------------|-------------|-----------|----------------------|---|---|
| | Description | Functionality | Color | Acid Value (mg KOH/g) | Viscosity (mPa.s at 25 °C) (cps at 77 °F) | Tg (°C) | Surface Tension Dynes/cm | Molecular Weight | CLP Hazard Symbol | CLP Hazard Statement | REACH-Status | TSCA-Status | CEPA-Status | IECSC | METI | ECL | Reactivity | Gloss | Flexibility | Hardness | Chemical Resistance | Adhesion | Offset Inks | | Flexo Inks | Screen Inks | Overprint Varnishes | Wood Coatings | Composites | Electronics | Adhesives | Coatings on Plastics | | |
| Monofunctionals | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GENOMER* 1121 | IBOA | 1 | 10 A | 0.1 | 10 | 80 | 31.7 | 208 | GHS07 GHS09 | H315, H319, H335, H411 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | High Tg but also good flexibility, good cutting power, good adhesion and moisture resistance |
| GENOMER* 1122 | Aliph. Ureth. Acryl. | 1 | 50 A | 1.0 | 30 | -3 | 33.3 | 215 | GHS07 | H315, H319 | P | L | N/NN | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | High flexibility and low odor, excellent adhesion on plastics |
| MIRAMER M120 | LA | 1 | 150 A | 0.5 | 15 | -30 ² | 30 | 240 | GHS07 GHS09 | H315, H319, H335, H411 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Hydrophobic, flexibility, low volatility and good adhesion | |
| MIRAMER M130 | IDA | 1 | 100 A | 0.2 | 7 | -60 ² | 24.3 | 212 | GHS07 GHS09 | H315, H319, H335, H411 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Hydrophobic, flexibility and adhesion, low Tg and surface tension | |
| MIRAMER M140 | PH(EO)A | 1 | 100 A | 0.1 | 13 | 5 | 40.1 | 192 | - | - | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Good cutting power, good adhesion on plastics | |
| MIRAMER M164 | NP(EO)4A | 1 | 200 A | 0.3 | 100 | -28 | 34.3 | 450 | GHS07 | H315, H319 | E | L | N | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Low volatility and low odor, good adhesion | |
| MIRAMER M166 | NP(EO)8A | 1 | 150 A | 0.5 | 130 | -41 | 34.9 | 626 | GHS07 | H315, H319 | E | L | N | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | High flexibility and low odor, low volatility | |
| MIRAMER M170 | EOEOEA | 1 | 150 A | 0.3 | 10 | -53 | 29.7 | 188 | GHS05 GHS07 | H314, H302, H317, H412 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | High flexibility and low shrinkage, low Tg, excellent cutting power | |
| Difunctionals | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MIRAMER M200 | HDDA | 2 | 50 A | 0.2 | 10 | 43 ² | 35.9 | 226 | GHS07 | H315, H319, H317 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Excellent cutting power, outstanding adhesion on plastics, weatherability | |
| MIRAMER M210 | HPNDA | 2 | 100 A | 0.3 | 30 | 115 | 33.2 | 312 | GHS07 | H319, H317 | P | L | N | L | L | ◇ | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Low viscosity, good hardness and adhesion | |
| MIRAMER M216 | NPG(PO)2DA | 2 | 35 A | 0.1 | 15 | 32 | 30.6 | 328 | - | - | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Low viscosity, good flexibility | |
| MIRAMER M220 | TPGDA | 2 | 100 A | 0.2 | 18 | 62 ² | 33.3 | 300 | GHS07 GHS09 | H315, H319, H317, H335, H411 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Low volatility, good cutting power | |
| MIRAMER M222 | DPGDA | 2 | 100 A | 0.3 | 15 | 104 ² | 33.5 | 242 | GHS05 GHS07 | H318, H317, H315 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Low volatility, good cutting power, high Tg | |
| MIRAMER M240 | BPA(EO)4DA | 2 | 3 G | 0.2 | 1200 | 60 ² | 42.1 | 512 | GHS07 | H315, H319 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Good hydrophobic and hydrophilic balance, good heat resistance | |
| MIRAMER M280 | PEG400DA | 2 | 100 A | 0.3 | 70 | -22 | 42.6 | 508 | GHS07 | H319 | E | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Water soluble, high flexibility, low shrinkage and low odor | |
| MIRAMER M282 | PEG200DA | 2 | 100 A | 0.5 | 25 | - | 40.1 | 308 | GHS07 | H315, H319 | E | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Soft and flexible | |
| MIRAMER M284 | PEG300DA | 2 | 150 A | 0.5 | 50 | -8 | 41.6 | 408 | GHS07 | H319 | E | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Water soluble, high flexibility and low shrinkage | |
| MIRAMER M286 | PEG600DA | 2 | 150 A | 0.5 | 85 | -36 | 42.3 | 708 | GHS07 | H319 | E | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Water soluble, high flexibility and low shrinkage | |
| MIRAMER M2101 | BPA(EO)10DMA | 2 | 200 A | 0.2 | 500 | -1 ² | 42.6 | 798 | - | - | E | L | D | L | L | ◇ | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Balance of hydrophobic/hydrophilic properties, low odor | |
| MIRAMER M2301 | BPA(EO)30DMA | 2 | 250 A | 0.2 | 700 | -43 ² | 44 | 1678 | - | - | E | L | D | L | L | ◇ | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Low odor, hydrophilic backbone | |
| Tri- and Poly-Functionals | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MIRAMER M300 | TMPTA | 3 | 50 A | 0.2 | 110 | 62 ² | 36.6 | 296 | GHS07 | H315, H319, H317 | R | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Excellent reactivity, good offset properties, chemical resistance, low volatility |
| MIRAMER M320 | GPTA | 3 | 150 A | 1.0 | 110 | 33 | 36 | 428 | GHS07 | H319, H317 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | High reactivity, pigment wetting, good hardness and litho properties |
| MIRAMER M340 | PETA | 3 | 200 A | 2.0 | 1800 | 103 ² | 40.6 | 298 | GHS05 GHS07 GHS09 | H318, H302, H317, H315, H411 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | High reactivity and hardness with pendant OH groups, chemical resistance and low vapor pressure |
| MIRAMER M360 | TMP(PO)3TA | 3 | 150 A | 0.3 | 110 | -15 ² | 34 | 470 | GHS07 | H319, H317 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | High reactivity, good flexibility |
| MIRAMER M410 | DiTMPTA | 4 | 150 A | 0.1 | 600 | 98 ² | 36.8 | 467 | - | - | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Excellent reactivity and cross-linking |
| MIRAMER M600 | DPHA | 6 | 150 A | 0.2 | 7000 | 35 | 41.1 | 578 | GHS07 | H319 | P | L | N | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Very high reactivity and surface hardness |
| MIRAMER M3130 | TMP(EO)3TA | 3 | 15 A | 0.1 | 60 | 37 | 38.1 | 428 | GHS07 | H319, H317 | R | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Higher reactivity, flexibility and viscosity reduction compared to TMPTA |
| MIRAMER M3190 | TMP(EO)9TA | 3 | 140 A | 0.3 | 130 | -19 ² | 40.2 | 692 | - | - | E | L | D | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | Fast surface cure, low shrinkage, partially water soluble |
| MIRAMER M4004 | PPTTA | 4 | 100 A | 0.1 | 150 | 33 | 40.9 | 572 | GHS07 | H319 | P | L | N | L | L | L | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | High reactivity, excellent scratch resistance |

Epoxy Acrylates

| Product | Product Data (Typical Values) | | | | | | HS & Registration | | | | | | Properties | | | | | Applications | | | | | | Key Features | | | | | | | | |
|------------------------------|-------------------------------|---------------|-------|-----------------------|--|---------|-------------------|----------------------|--------------|-------------|-------------|-------|------------|-----|------------|-----------------|-------------|--------------|---------------------|----------|-------------|------------|-------------|---------------------|---------------|------------|-------------|-----------|----------------------|---|--|---|
| | Description | Functionality | Color | Acid Value (mg KOH/g) | Viscosity (mPa.s at 25 °C) (cps at 77 °F) | Tg (°C) | CLP Hazard Symbol | CLP Hazard Statement | REACH-Status | TSCA-Status | CEPA-Status | IECSC | METI | ECL | Reactivity | Pigment Wetting | Flexibility | Hardness | Chemical Resistance | Adhesion | Offset Inks | Flexo Inks | Screen Inks | Overprint Varnishes | Wood Coatings | Composites | Electronics | Adhesives | Coatings on Plastics | | | |
| GENOMER* 2235 | Aliphatic Epoxy Acrylate | 2 | 3 G | 7 | 1 100 | - | GHS07 GHS05 | H302, H318, H317 | P | L | D | L | ◇ | L | ++++ | ++ | +++ | ++ | ++++ | +++ | | • | • | • | • | | | | • | • | High reactivity, very low viscosity, excellent chemical and stain resistance | |
| GENOMER* 2253 | Modified Epoxy Acrylate | 2 | 1 G | 1 | 30 000 | 0 | GHS07 | H315, H319, H317 | P | L | D | L | L | L | ++++ | ++ | ++++ | + | ++++ | ++++ | | • | • | • | • | | | | • | • | High reactivity, high flexibility, medium viscosity, good adhesion on plastics | |
| GENOMER* 2255 | Modified Epoxy Acrylate | 2 | 2 G | 1 | 45 000 | 35 | GHS07 | H317 | P | L | D | L | ◇ | L | ++++ | +++ | ++ | ++++ | ++++ | + | • | • | • | • | • | | | | • | • | Good pigment wetting and offset properties, good reactivity, good viscosity | |
| GENOMER* 2259 | Modified Epoxy Acrylate | 2 | 2 G | 1 | 25 000 | 40 | GHS07 | H317 | P | L | D | L | L | L | ++++ | ++++ | ++ | ++++ | ++++ | ++ | • | • | • | • | • | | | | • | • | Good pigment wetting and offset properties, medium viscosity, good reactivity | |
| GENOMER* 2263 | Epoxy Acrylate | 2 | 1 G | 4 | 4 000 (60°C/140°F) | 47 | - | - | P | L | D | L | L | L | ++++ | + | ++ | ++++ | ++++ | + | • | • | • | • | • | • | | | | • | • | Excellent reactivity, high scratch and chemical resistance |
| GENOMER* 2280 | Modified Epoxy Acrylate | 2 | 2 G | 4 | 5 000 (60°C/140°F) | 47 | GHS07 | H315, H319, H317 | P | L | D | L | ◇ | L | ++++ | +++ | ++ | ++++ | ++++ | ++ | • | • | • | • | • | • | | | | • | • | Excellent balance of properties, high reactivity, hardness, flexibility and toughness |
| GENOMER* 2281 | Modified Epoxy Acrylate | 2 | 1 G | 1 | 4 500 (60°C/140°F) | 47 | GHS07 | H315, H319, H317 | P | L | D | L | ◇ | L | ++++ | +++ | ++ | ++++ | ++++ | +++ | • | • | • | • | • | • | | | | • | • | Excellent balance of properties, high reactivity, hardness, flexibility, toughness and adhesion |
| EPOXY ACRYLATE 10-620 | Epoxy Acrylate | 2 | 1 G | 1 | 5 400 (60°C/140°F) | 47 | GHS07 | H317 | P | L | D | L | L | L | ++++ | + | ++ | ++++ | ++++ | + | • | • | • | • | • | • | | | | • | • | Excellent reactivity, high scratch and chemical resistance |

Available dilutions: EPOXY ACRYLATE 10-620 in HD20, TP20, TP40, TM20 and TM40

Polyester/Polyether Acrylates

| Product | Product Data (Typical Values) | | | | | | HS & Registration | | | | | | Properties | | | | | Applications | | | | | | Key Features | | | | | | | | |
|----------------------------------|-------------------------------|---------------|-------|-----------------------|--|---------|-------------------|---------------------------|--------------|-------------|-------------|-------|------------|-----|------------|-----------------|-------------|--------------|---------------------|----------|-------------|------------|-------------|---------------------|---------------|------------|-------------|-----------|----------------------|---|---|--|
| | Description | Functionality | Color | Acid Value (mg KOH/g) | Viscosity (mPa.s at 25 °C) (cps at 77 °F) | Tg (°C) | CLP Hazard Symbol | CLP Hazard Statement | REACH-Status | TSCA-Status | CEPA-Status | IECSC | METI | ECL | Reactivity | Pigment Wetting | Flexibility | Hardness | Chemical Resistance | Adhesion | Offset Inks | Flexo Inks | Screen Inks | Overprint Varnishes | Wood Coatings | Composites | Electronics | Adhesives | Coatings on Plastics | | | |
| GENOMER* 3364 | Polyether Acrylate | 3 | 15 A | 0.5 | 130 | 32 | - | - | E | L | NN | L | L | L | +++ | ++ | ++ | +++ | ++++ | ++ | | • | • | • | • | | | | • | • | High reactivity, low viscosity, good solvent resistance | |
| GENOMER* 3414 | Polyether Acrylate | 4 | 50 A | 0.5 | 4 500 | -17 | - | - | E | L | NN | L | L | L | ++++ | ++ | ++++ | ++ | ++++ | +++ | | • | • | • | • | | | | • | • | High reactivity, low viscosity, good solvent and scratch resistance, flexibility and adhesion, low Tg | |
| GENOMER* 3485 | Polyester Acrylate | 4 | 3 G | 8 | 500 | 41 | GHS07 | H315, H319, H317 | P | L | D | L | ◇ | L | ++ | ++ | ++ | +++ | ++++ | +++ | | • | • | • | • | | | | • | • | low viscosity, good surface hardness, chemical resistance and adhesion | |
| GENOMER* 3497 | Polyether Acrylate | 4 | 40 A | 0.5 | 600 | 30 | - | - | E | L | NN | L | L | L | +++ | ++ | +++ | ++ | ++++ | ++ | | • | • | • | • | | | | • | • | High reactivity, low viscosity, good solvent resistance | |
| GENOMER* 3611 | Polyester Acrylate | 6 | 10 G | 8 | 8 000 | 35 | GHS05 GHS07 | H318, H317, H315, H412 | E | L | NN | ◇ | ◇ | ◇ | +++ | ++++ | + | ++++ | ++ | +++ | • | • | • | | | | | | | | | High reactivity, very good pigment wetting and lithographic behavior |
| POLYESTER ACRYLATE 03-849 | Polyester Acrylate | 3 | 3 G | 8 | 20 000 | 28 | GHS05 GHS07 | H314, H317 | E | L | ◇ | L | L | L | +++ | +++ | ++++ | ++ | +++ | ++ | • | • | • | • | • | | | | • | • | Good reactivity, good abrasion and chemical resistance | |

Urethane Acrylates

| Product | Product Data (Typical Values) | | | | | | HS & Registration | | | | | | Properties | | | | | Applications | | | | | | Key Features | | | | | | |
|-----------------------------------|---------------------------------|---------------|-------|-----------------------|---|---------|-------------------------|------------------------------|--------------|-------------|-------------|-------|------------|-----|------------|-----------------|-------------|--------------|---------------------|----------|-------------|------------|-------------|--------------|---------------------|---------------|------------|-------------|---|--|
| | Description | Functionality | Color | Acid Value (mg KOH/g) | Viscosity (mPa.s at 25 °C) (cps at 77 °F) | Tg (°C) | CLP Hazard Symbol | CLP Hazard Statement | REACH-Status | TSCA-Status | CEPA-Status | IECSC | METI | ECL | Reactivity | Pigment Wetting | Flexibility | Hardness | Chemical Resistance | Adhesion | Offset Inks | Flexo Inks | Screen Inks | | Overprint Varnishes | Wood Coatings | Composites | Electronics | Adhesives | Coatings on Plastics |
| GENOMER* 4188/EHA | Aliphatic UA | 1 | 1 G | 5 | 120 000 | -16 | GHS07 | H315, H317, H335 | P | L | D | L | L | L | + | ++ | ++++ | + | + | ++++ | | | | | | | | | | High tack, high elongation and excellent adhesion |
| GENOMER* 4215 | Aliphatic UA | 2 | 2 G | 1 | 20 000 (60°C/140°F) | -24 | - | - | E | L | D | L | ◇ | ◇ | +++ | +++ | ++++ | + | +++ | ++++ | • | | • | • | • | • | • | • | • | Good adhesion to PVC and other plastics |
| GENOMER* 4217 | Aromatic UA | 2 | 1 G | 3 | 100 000 | -35 | GHS07 | H315, H319 | E | L | D | L | ◇ | L | ++ | +++ | ++++ | + | ++ | +++ | | • | • | • | | | | • | • | Excellent flexibility, good adhesion to difficult substrates |
| GENOMER* 4267 | Aliphatic UA | 2 | 1 G | 4 | 16 000 (60°C/140°F) | -11 | - | - | E | L | N/NN | L | L | L | ++ | +++ | ++++ | ++ | +++ | ++++ | • | | • | • | • | • | • | • | • | Excellent flexibility and toughness, good adhesion |
| GENOMER* 4269/M22 | Aliphatic UA | 2 | 1 G | 3 | 55 000 | -15 | GHS07 | H315, H319 | P | L | NN | L | L | L | + | +++ | ++++ | + | + | ++++ | | | • | • | • | • | • | • | Flexibilizer resin, good toughness, high flexibility, excellent adhesion | |
| GENOMER* 4302 | Isocyanurate | 3 | 80 A | 1 | 10 000 (60°C/140°F) | 40 | GHS07 | H315, H319 | P | L | N/NN | L | L | L | +++ | ++ | ++++ | ++++ | ++++ | +++ | | | | • | • | • | • | • | Fast, hard and excellent chemical resistance, non yellowing, high E-modulus | |
| GENOMER* 4312 | Aliphatic UA | 3 | 1 G | 1 | 60 000 | 31 | - | - | P | L | D | L | L | L | +++ | +++ | ++++ | ++ | +++ | +++ | • | • | • | • | • | • | | • | High reactivity and good flexibility, good adhesion, abrasion and scratch resistance | |
| GENOMER* 4316 | Aliphatic UA | 3 | 1 G | 1 | 58 000 | 4 | - | - | E | L | D | L | L | L | +++ | +++ | ++++ | ++ | ++ | +++ | • | • | • | • | • | | | • | High reactivity and good flexibility, good adhesion, abrasion and scratch resistance | |
| GENOMER* 4425 | Aliphatic UA | 4 | 1 G | 5 | 4 500 | 33 | GHS07 | H319, H317 | E | L | LVE | ◇ | ◇ | ◇ | +++ | ++ | ++ | +++ | ++++ | +++ | | • | • | • | • | | | • | High reactivity, low viscosity, balance of flexibility and good hardness | |
| GENOMER* 4590/PP | Aliphatic UA | 5 | 2 G | 1 | 11 000 | 30 | GHS07 | H315, H319 | P | L | ◇ | ◇ | L | L | +++ | +++ | + | ++++ | ++++ | ++ | • | • | • | • | | | | • | Low viscosity, excellent reactivity and hardness | |
| GENOMER* 4622 | Aromatic UA | 6 | 2 G | 3 | 30 000 | 48 | GHS05 GHS07 GHS09 | H318, H302, H317, H411 | P | L | D | L | ◇ | L | ++++ | +++ | + | ++++ | ++++ | ++ | • | | | • | | | | • | Very fast with good hardness and chemical resistance | |
| GENOMER* 4690 | Aliphatic UA | 6 | 1 G | | 80 000 | 48 | GHS05 GHS07 GHS09 | H302, H315, H318, H317, H411 | P | L | ◇ | L | L | ◇ | +++ | +++ | + | ++++ | ++++ | ++ | • | • | • | • | | | | • | Outstanding hardness, scratch and abrasion resistance and low yellowing | |
| URETHANE ACRYLATE 98-283/W | Aliphatic UA Dispersion | 3 | - | 1 | 30 | 46 | - | - | P | L | D | ◇ | ◇ | ◇ | ++ | + | ++ | +++ | ++ | +++ | | | • | • | | | | | Water-based dispersion, sandable after physical drying | |
| URETHANE ACRYLATE 00-022 | Aliphatic UA hydroxy functional | 3 | 1 G | 1 | 50 000 | 33 | GHS07 | H315, H319 | E | L | ◇ | ◇ | ◇ | ◇ | +++ | ++ | ++ | ++++ | ++++ | ++ | | | | • | • | • | • | • | Dual curable OH and acrylate groups with outstanding chemical resistance and hardness | |

Available dilutions: GENOMER* 4188/M22, GENOMER* 4215/M22.

Oligoamines

| Product | Product Data (Typical Values) | | | | | | HS & Registration | | | | | | Properties | | | | | Applications | | | | | | Key Features | | | | | | |
|----------------------|-------------------------------|---------------|-------|------------------------|---|---------|-------------------|----------------------|--------------|-------------|-------------|-------|------------|-----|------------|-----------------|-------------|--------------|---------------------|----------|-------------|------------|-------------|--------------|---------------------|---------------|------------|-------------|-----------|---|
| | Description | Functionality | Color | Amine Value (mg KOH/g) | Viscosity (mPa.s at 25 °C) (cps at 77 °F) | Tg (°C) | CLP Hazard Symbol | CLP Hazard Statement | REACH-Status | TSCA-Status | CEPA-Status | IECSC | METI | ECL | Reactivity | Pigment Wetting | Flexibility | Hardness | Chemical Resistance | Adhesion | Offset Inks | Flexo Inks | Screen Inks | | Overprint Varnishes | Wood Coatings | Composites | Electronics | Adhesives | Coatings on Plastics |
| GENOMER* 5142 | Acrylated Amine Synergist | <1 | 2 G | 220 | 20 | - | GHS07 | H319, H317 | P | L | D | L | ◇ | U | n/a | n/a | n/a | n/a | n/a | n/a | • | • | • | • | | | | • | • | Improves cure speed and surface cure. Low viscosity, high amine number, excellent compatibility |
| GENOMER* 5161 | Acrylated Amine Synergist | <1 | 2 G | 230 | 80 | - | GHS07 | H319, H317 | P | L | N | ◇ | ◇ | U | n/a | n/a | n/a | n/a | n/a | n/a | • | • | • | • | | | | • | • | Improves cure speed and surface cure. Low viscosity, high amine number, excellent compatibility |
| GENOMER* 5275 | Amine Acrylate | 2 | 1 G | 150 | 3700 | -45 | GHS07 | H315, H319, H317 | E | L | D | L | L | L | **** | n/a | **** | ++ | + | **** | | • | • | • | • | | | • | • | Fast surface cure rate, low odor and good adhesion, low Tg flexibilizer |

Co-Resins

| Product | Product Data (Typical Values) | | | | | | HS & Registration | | | | | | Properties | | | | | Applications | | | | | | Key Features | | | | | | |
|----------------------------|-------------------------------|---------------|-------|-----------------------|---|---------|-------------------|----------------------|--------------|-------------|-------------|-------|------------|-----|------------|-----------------|-------------|--------------|---------------------|----------|-------------|------------|-------------|--------------|---------------------|---------------|------------|-------------|-----------|--|
| | Description | Functionality | Color | Acid Value (mg KOH/g) | Viscosity (mPa.s at 25 °C) (cps at 77 °F) | Tg (°C) | CLP Hazard Symbol | CLP Hazard Statement | REACH-Status | TSCA-Status | CEPA-Status | IECSC | METI | ECL | Reactivity | Pigment Wetting | Flexibility | Hardness | Chemical Resistance | Adhesion | Offset Inks | Flexo Inks | Screen Inks | | Overprint Varnishes | Wood Coatings | Composites | Electronics | Adhesives | Coatings on Plastics |
| GENOMER* 6043/M22 | Modified Polyester Resin | n/a | 1 G | 5 | 30 000 | -18 | GHS07 | H315, H319 | P | L | D/NN | L | L | L | + | ++ | **** | + | + | **** | | | • | | | | | • | • | Flexibilizer resin for PSA, low yellowing, excellent adhesion |
| GENOMER* 6050/TM | Modified Polyester Resin | n/a | 2 G | 4 | 125 000 | 15 | GHS07 | H315, H319, H317 | P | L | D | L | L | L | ++ | **** | **** | ++ | + | **** | • | • | • | • | | | | • | • | Excellent adhesion on plastics, good offset behavior |
| GENOMER* 6052/TM | Modified Polyester Resin | n/a | 3 G | 5 | 125 000 | 35 | GHS07 | H315, H319, H317 | P | L | D/LVE | ◇ | ◇ | ◇ | ++ | **** | **** | ++ | + | **** | • | • | • | • | | | | • | • | Excellent adhesion on plastics, good offset behavior |
| GENOMER* 6054/NP | Modified Polyester Resin | n/a | 3 G | 1 | 12 000 | -7 | - | - | P | L | D/LVE | ◇ | L | ◇ | + | +++ | +++ | ++ | + | **** | | • | • | • | | | | • | • | Excellent adhesion on various substrates, low viscosity for flexo inks and overprint varnishes |
| GENOMER* 6058 | Sucrose Benzoate | n/a | 30 A | 0.3 | - | 68 | - | - | P | L | D | L | L | L | + | ++ | + | +++ | + | ++ | • | • | • | • | | | | • | • | Maintains gloss compared with inorganic fillers, good adhesion on plastics |
| GENOMER* 6083/HD | Inert Resin | n/a | 2 G | 2 | 110 000 | 41 | GHS07 | H315, H319, H317 | P | L | D | L | L | L | + | **** | ++ | +++ | ++ | **** | | | • | • | • | | | • | • | Excellent adhesion on plastics, pigment wetting, high Tg |
| GENOMER* 6085/NP | Inert Resin | n/a | 3 G | 1 | 9 000 | 37 | - | - | P | L | D | L | L | L | + | +++ | +++ | ++ | + | **** | | • | • | • | | | | • | • | Good adhesion and hardness, low viscosity for flexo inks and overprint varnishes |
| GENOMER* 6086/HD | Acrylic Resin | n/a | 4 G | 15 | 125 000 | 58 | GHS07 | H315, H319, H317 | P | L | D/LVE | ◇ | L | L | + | ++ | ++ | +++ | + | **** | | | • | • | | | | • | • | Good hardness and adhesion on various substrates |
| CO-RESIN 02-819/M22 | Modified Polyester Resin | n/a | 4 G | 6 | 100 000 | 12 | GHS07 | H315, H319 | P | L | D/NN | L | L | L | + | **** | **** | + | + | **** | | | | | | | | • | • | Good balance of cohesion and loop-tack, good adhesive properties, improves SAFT |

Available dilutions: GENOMER* 6050/GP, GENOMER* 6083/M22, GENOMER* 6083/TP, GENOMER* 6083/ETM

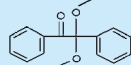
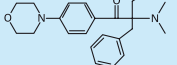
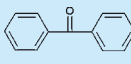
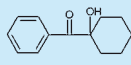
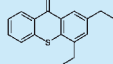
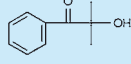
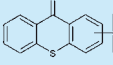
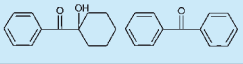
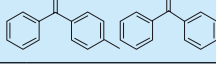
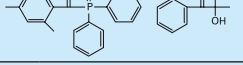
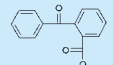
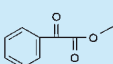
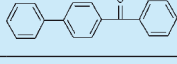
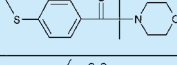
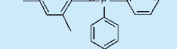
Specialities

| Product | Product Data (Typical Values) | | | | | | HS & Registration | | | | | | Properties | | | | | | Applications | | | | | | Key Features | | | | | |
|----------------------|--------------------------------------|-------|-----------------------|---|---------|-------------------|-------------------------|------------------------|-------------|-------------|-------|------|------------|------------|-----------------|-------------|----------|---------------------|--------------|-------------|------------|-------------|---------------------|---------------|--------------|-------------|-----------|----------------------|--|--|
| Description | Functionality | Color | Acid Value (mg KOH/g) | Viscosity (mPa.s at 25 °C) (cps at 77 °F) | Tg (°C) | CLP Hazard Symbol | CLP Hazard Statement | REACH-Status | TSCA-Status | CEPA-Status | IECSC | METI | ECL | Reactivity | Pigment Wetting | Flexibility | Hardness | Chemical Resistance | Adhesion | Offset Inks | Flexo Inks | Screen Inks | Overprint Varnishes | Wood Coatings | Composites | Electronics | Adhesives | Coatings on Plastics | | |
| ACMO | Acryloyl Morpholine | n/a | 10 A | - | 12 | 88 | GHS08 GHS05 GHS07 | H372, H318, H302, H317 | R | S | N | L | L | L | n/a | n/a | n/a | n/a | n/a | ++++ | | • | • | | | | • | • | • | Very high Tg, water-soluble, good thermal stability, good adhesion |
| GENOMER* 7151 | Carboxyfunctional Polyester Acrylate | 1 | 2 G | 210 | 7 000 | 39 | GHS07 | H312, H315, H319, H317 | P | L | D | L | L | ◇ | ++ | n/a | + | +++ | + | ++++ | | | | • | • | | • | • | Good adhesion on metal and glass | |
| GENOMER* 7210 | Cycloaliphatic Epoxide | n/a | 30 A | - | 400 | - | GHS07 | H315, H319, H317 | P | L | D | L | L | L | - | - | ++++ | - | - | ++++ | | • | • | | | | | • | Base epoxide for UV curing cationic systems, outstanding adhesion and flexibility on metal substrates | |
| GENOMER* 7287 | Speciality Resin | 2 | 40 A | 2 | 12 | -33 | GHS07 | H315, H319, H335 | P | L | N | L | L | L | ++ | ++ | +++ | ++ | ++++ | +++ | | • | • | • | • | | | • | Provides superior matting properties, low viscosity and reasonable reactivity, easy incorporating of matting agent | |

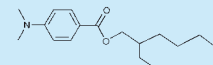
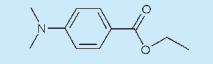
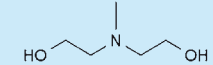
Additives

| Product | Product Data (Typical Values) | | | | HS & Registration | | | | | | Properties | | | | | | Applications | | | | | | Key Features | | | | |
|--------------------|-------------------------------|-----------------------|---|-------------------|----------------------|------------------|-------------|-------------|-------|------|------------|-------------------|--------------|------------------|----------|-----------------|--------------|------------|-------------|---------------------|---------------|------------|--------------|-----------|----------------------|---|---|
| Description | Color | Acid Value (mg KOH/g) | Viscosity (mPa.s at 25 °C) (cps at 77 °F) | CLP Hazard Symbol | CLP Hazard Statement | REACH-Status | TSCA-Status | CEPA-Status | IECSC | METI | ECL | Retain Reactivity | Retain Color | Retain Viscosity | Adhesion | Pigment Wetting | Offset Inks | Flexo Inks | Screen Inks | Overprint Varnishes | Wood Coatings | Composites | Electronics | Adhesives | Coatings on Plastics | | |
| GENORAD* 10 | Surface-active Additive | 2 G | 150 | 300 | GHS07 | H315, H319 | P | L | NN | ◇ | ◇ | ◇ | | | • | • | • | • | • | • | | | | | • | • | Improves flow properties of inks and coatings, can improve gloss and adhesion, silicon free |
| GENORAD* 16 | In-can Stabilizer | 3 G | 15 | 1 200 | GHS07 | H319, H317 | P | L | D | L | L | L | • | • | | | • | • | • | | • | | | | • | | Highest performance stabilizer for grinding and storage, works anaerobically, no effect on reactivity |
| GENORAD* 18 | In-can Stabilizer | 4 G | 7 | 2 000 | GHS07 GHS09 | H319, H317, H411 | P | L | D | L | L | L | • | • | | | • | • | • | | • | | | | • | | High performance stabilizer for grinding and storage, works anaerobically, no effect on reactivity |
| GENORAD* 20 | In-can Stabilizer | 1 G | 2 | 1 000 | GHS07 GHS09 | H319, H317, H411 | P | L | D | L | L | L | • | • | | | | | | | • | • | • | • | • | • | Excellent stabilizer in clear coatings |
| GENORAD* 21 | In-can Stabilizer | 10 G | - | 2 000 | GHS07 | H319, H317 | P | L | D/LVE | L | L | L | • | • | | | • | • | • | | | | | | • | | In-can stabilizer for UV-curable metallic inks |
| GENORAD* 22 | In-can Stabilizer | 2 G | 30 | 20 | - | - | P | L | D | L | L | L | • | • | | | • | • | • | | • | | | | • | | Premium stabilizer for grinding and storage, works anaerobically, no effect on reactivity, especially suitable for UV inkjet inks |
| GENORAD* 40 | Adhesion Promoter | 200 A | 340 | 2 000 | GHS07 | H315, H319 | P | L | D/N | L | L | L | | | • | | | | | • | • | • | • | • | • | • | Adhesion promoter on metal, glass and plastics |
| GENORAD* 50 | Dispersing Aid | 2 G | - | 1 500 | - | - | P | L | LVE | ◇ | ◇ | ◇ | | | | | • | • | • | • | | | | | | | Primarily recommended as dispersing aid for organic pigments |
| GENORAD* 51 | Dispersing Aid | 2 G | - | 1 500 | - | - | P | L | LVE | ◇ | ◇ | ◇ | | | | | • | • | • | • | | | | | | | Primarily recommended as dispersing aid for carbon blacks |

Photoinitiators

| Product | Product Data (Typical Values) | | | | | Structure | HS & Registration | | | | | | | Applications | | | | | | | Key Features | | | |
|-----------------------|---|------------|---|---|-----------------|---|-------------------|----------------------|--------------|-------------|-------------|-------|------|--------------|-------------|------------|-------------|---------------------|---------------|------------|--------------|-------------|-----------|--|
| | Description | Purity (%) | Melting Point °C (Viscosity [mPa.s at 25 °C]) | Melting Point °F (Viscosity [cps at 77 °F]) | Absorption (nm) | | CLP Hazard Symbol | CLP Hazard Statement | REACH-Status | TSCA-Status | CEPA-Status | IECSC | METI | ECL | Offset Inks | Flexo Inks | Screen Inks | Overprint Varnishes | Wood Coatings | Composites | | Electronics | Adhesives | Coatings on Plastics |
| GENOCURE* BDK | Benzildimethylketal | > 99.5 | 66 | 151 | 252 |  | GHS09 | H411 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | General purpose where non yellowing not essential |
| GENOCURE* BDMM | 2-Benzyl-2-dimethylamino-1-(4-morpholinophenyl)-butanone-1 | > 98.5 | 110-118 | 230-244 | 230/325 |  | GHS09 | H400, H410 | R | L | D | L | L | L | • | • | • | • | • | • | • | • | • | Excellent through cure in dark color pigmented systems. Combinations with other photoinitiators |
| GENOCURE* BP | Benzophenone | > 99.0 | 47-49 | 117-120 | 254 |  | GHS07 | H315, H319, H412 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | General purpose, low cost |
| GENOCURE* CPK | 1-Hydroxycyclohexylphenylketone | > 99.0 | 48 | 118 | 247 |  | - | - | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | Low yellowing |
| GENOCURE* DETX | 2,4 Diethylthioxanthone | > 98.0 | 72 | 162 | 261/384 |  | - | - | P | L | N | L | L | L | • | • | • | • | • | • | • | • | • | Pigmented systems in combination with amines and e.g. GENOCURE* BDMM |
| GENOCURE* DMHA | Dimethylhydroxyacetophenone | > 98.0 | 4 | 39 | 247/277 |  | GHS07 | H302, H412 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | Low yellowing, liquid |
| GENOCURE* ITX | Isopropylthioxanthone | > 98.0 | 74-76 | 165-169 | 259/383 |  | - | - | P | L | D | ◇ | L | L | • | • | • | • | • | • | • | • | • | Pigmented systems in combination with amines and e.g. GENOCURE* BDMM |
| GENOCURE* LBC | 1-Hydroxycyclohexylphenylketone and Benzophenone | > 98.0 | - | - | 250/330 |  | GHS07 | H315, H319, H412 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | Liquid with good balance of surface and through cure for clear coatings |
| GENOCURE* LBP | 4-Methylbenzophenone and Benzophenone | > 99.0 | (~90) | (~90) | 257 |  | GHS07 | H315, H319, H412 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | General purpose, liquid |
| GENOCURE* LTD | 2,4,6 Trimethylbenzoyldiphenylphosphine oxide Dimethylhydroxyacetophenone | > 98.0 | - | - | 240/272/367 |  | GHS08 | H361, H412 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | Liquid photoinitiator for non yellowing clear and white pigmented systems |
| GENOCURE* LTM | Liquid Photoinitiatorblend | > 97.0 | (~20) | (~20) | 253/368 | - | GHS08 | H361 | P | L | N | L | L | L | • | • | • | • | • | • | • | • | • | White and thick coatings, liquid with good balance of surface and through cure, non yellowing |
| GENOCURE* MBB | Methyl-o-benzoyl-benzoate | > 99.0 | 50-52 | 122-126 | 246 |  | - | - | P | L | N | L | L | L | • | • | • | • | • | • | • | • | • | Good surface cure |
| GENOCURE* MBF | Methylbenzoylformate | > 97.0 | (~5) | (~5) | 257 |  | - | - | P | L | N/NN | L | L | L | • | • | • | • | • | • | • | • | • | Clear coatings, excellent surface curing photoinitiator especially in amine-free systems, low odor |
| GENOCURE* PBZ | 4-Phenylbenzophenone | > 99.0 | 99-103 | 210-217 | 295 |  | - | - | P | L | N | L | ◇ | ◇ | • | • | • | • | • | • | • | • | • | High reactivity, low migration and odor |
| GENOCURE* PMP | 2-Methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one | > 99.0 | 74-76 | 165-169 | 307 |  | GHS07 GHS09 | H302, H411 | R | L | D | L | L | L | • | • | • | • | • | • | • | • | • | Pigmented systems in combination with other photoinitiators |
| GENOCURE* TPO | 2,4,6-Trimethylbenzoyldiphenylphosphine oxide | > 99.0 | 92-94 | 198-201 | 380 |  | GHS08 | H361, H412 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | White and thick coatings, non yellowing |

Synergists

| Product | Product Data (Typical Values) | | | | | HS & Registration | | | | | | | Applications | | | | | | Key Features | | | | | |
|-------------------------------------|--------------------------------------|------------|---|---|-----------------|---|-------------------|----------------------|--------------|-------------|-------------|-------|--------------|-----|-------------|------------|-------------|---------------------|--------------|---------------|------------|-------------|-----------|--|
| | Description | Purity (%) | Melting Point °C (Viscosity [mPa.s at 25 °C]) | Melting Point °F (Viscosity [cps at 77 °F]) | Absorption (nm) | Structure | CLP Hazard Symbol | CLP Hazard Statement | REACH-Status | TSCA-Status | CEPA-Status | IECSC | METI | ECL | Offset Inks | Flexo Inks | Screen Inks | Overprint Varnishes | | Wood Coatings | Composites | Electronics | Adhesives | Coatings on Plastics |
| GENOCURE* EHA | 2-Ethylhexyl-4-dimethylaminobenzoate | > 99.0 | (~80) | (~80) | 228/311 |  | GHS07 | H319 | P | L | D | L | L | L | • | • | • | | | | • | • | • | Water insoluble synergist suited for litho systems, liquid |
| GENOCURE* EPD | Ethyl-4-dimethylaminobenzoate | > 99.0 | 63 | 142 | 228/310 |  | - | - | P | L | D | L | L | L | • | • | • | | | | • | • | • | Water insoluble synergist suited for litho systems |
| GENOCURE* MDEA ¹⁾ | N-Methyldiethanolamine | > 99.0 | (~100) | (~100) | 220 |  | GHS07 | H319 | P | L | D | L | L | L | • | • | • | • | • | • | • | • | • | Low cost amine synergist |

1) GENOCURE* MDEA - subject to chemical weapons convention

Polymeric Photoinitiators

| Product | Product Data (Typical Values) | | | | HS & Registration | | | | | Applications | | | | | | | Key Features | | | | | | |
|----------------------|------------------------------------|---|------------------|-----------------|-------------------|----------------------|--------------|-------------|-------------|--------------|------|-----|-------------|------------|-------------|---------------------|--------------|---------------|------------|-------------|-----------|----------------------|--|
| | Description | Viscosity (mPa.s at 25 °C) (cps at 77 °F) | Molecular Weight | Absorption (nm) | CLP Hazard Symbol | CLP Hazard Statement | REACH-Status | TSCA-Status | CEPA-Status | IECSC | METI | ECL | Offset Inks | Flexo Inks | Screen Inks | Overprint Varnishes | | Wood Coatings | Composites | Electronics | Adhesives | Coatings on Plastics | |
| GENOPOL* AB-1 | Polymeric Aminobenzoate Derivative | 15000 | 860 | 228, 310 | - | - | E | L | LVE | L | L | ◇ | • | • | • | | | • | • | • | | | Low migration and odor, excellent compatibility in UV formulations |
| GENOPOL* BP-1 | Polymeric Benzophenone Derivative | 160000 | 960 | 245, 325 | - | - | E | L | LVE | L | L | ◇ | • | • | • | • | • | • | • | • | • | | Low migration and odor, excellent compatibility in UV formulations |
| GENOPOL* TX-1 | Polymeric Thioxanthone Derivative | 160000 | 820 | 225, 310, 375 | - | - | E | L | LVE | L | ◇ | ◇ | • | • | • | | | • | • | | | | Low migration and odor, excellent compatibility in UV formulations |


We are promoting these products for use in energy curable medical application formulations. It is the responsibility of the formulator to check the suitability of these products for the intended medical application, including but not limited to, all relevant restrictions and approvals of the local governing bodies for the intended medical application. RAHN in no way warrants that these products have any approvals for use in any of the possible medical applications that might be considered.

Methacrylates

| Product | Product Data (Typical Values) | | | | | HS & Registration | | | | | | | Properties | | | | | Key Features | | |
|----------------------------------|---------------------------------|-------|---|-----------------------|-------------------|----------------------|--------------|-------------|-------------|-------|------|-----|------------|-----------------|-------------|----------|---------------------|--------------|-----|--|
| Description | Functionality | Color | Viscosity (mPas at 25 °C) (cps at 77 °F) | Tg (°C) | CLP Hazard Symbol | CLP Hazard Statement | REACH-Status | TSCA-Status | CEPA-Status | IECSC | METI | ECL | Reactivity | Pigment Wetting | Flexibility | Hardness | Chemical Resistance | Adhesion | | |
| | | | | | | | | | | | | | | | | | | | | |
| EPOXY METHACRYLATES | | | | | | | | | | | | | | | | | | | | |
| EPOXY METHACRYLATE 97-053 | Epoxy Methacrylate | 2 | < 2 G | 4 500 (60°C/140°F) | 48 | - | - | P | L | D | L | L | L | + | + | + | ++++ | ++++ | +++ | Very low shrinkage, provides excellent hardness as well as abrasion and scratch resistance |
| URETHANE METHACRYLATES | | | | | | | | | | | | | | | | | | | | |
| GENOMER* 4205 | Aliphatic Urethane Methacrylate | 2 | < 100 A | 9 000 | 39 | GHS07 | H315, H319 | P | L | N | L | L | ◇ | + | ++ | + | ++++ | ++++ | ++ | High E-modulus and good tensile strength, other characteristics are its light stability, abrasion and chemical resistance |
| GENOMER* 4256 | Aliphatic Urethane Methacrylate | 2 | < 3 G | ²⁾ 15 000 | -24 | - | - | E | L | N/NN | ◇ | ◇ | ◇ | + | ++ | ++++ | + | + | +++ | Excellent elasticity and elongation, improves light stability and chemical resistance |
| GENOMER* 4297 | Aliphatic Urethane Methacrylate | 2 | < 200 A | 8 700 | 43 | - | - | P | L | N | L | L | ◇ | + | ++ | + | ++++ | ++++ | ++ | Good stain and chemical resistance as well as high tensile strength and E-modulus, good abrasion resistance and very low yellowing |

2) in 20% Toluene

Initiators

| Product | Product Data (Typical Values) | | | | | | HS & Registration | | | | | | | Key Features | | |
|---------------------|-------------------------------|--------------------|--------------------|------------------|-----------------|-----------|---|----------------------|------------------|-------------|-------------|-------|------|--------------|---|--|
| Description | Purity (%) | Melting Point (°C) | Melting Point (°F) | Molecular Weight | Absorption (nm) | Structure | CLP Hazard Symbol | CLP Hazard Statement | REACH-Status | TSCA-Status | CEPA-Status | IECSC | METI | ECL | | |
| | | | | | | | | | | | | | | | | |
| GENOCURE* CQ | Camphorquinone | > 99.0 | 198-202 | 388-396 | 166 | 470 |  | GHS07 | H315, H319, H335 | E | L | D | L | ◇ | ◇ | Produced with the Selenium-free method, provides good through cure in long wavelength (visible) UV light, soluble in alcohol, ketones, acrylates and methacrylates |



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