

BYK-UV 3590 and BYK-UV 3595

BYK's new radiation-curing silicone-based surface additives

Two new radiation-curing additives, BYK-UV 3590 and BYK-UV 3595, have been developed that are particularly characterized by extremely strong tape release properties.

BYK-UV 3590 and BYK-UV 3595 are particularly suitable for UV-curing printing inks and overprint varnishes. The additive accumulates on the surface due to its very high interfacial activity. Due to its acrylic functionality, it can be incorporated into the polymer composite and thus permanently anchored to the surface. There it causes a reduction in adhesive tape adhesion (improvement of tape release properties) and leads to a significant increase in surface slip. In addition, BYK-UV 3590 exhibits very good defoaming properties and has only a slight influence on

the turbidity of the system. BYK-UV 3595 improves flow and exhibits defoaming properties without affecting turbidity. By using BYK-UV 3590 and BYK-UV 3595, it is also possible to create structural effects in overprint varnishes and printing inks.

BYK-UV 3590 and BYK-UV 3595 are particularly recommended for all non-aqueous, radiation-curing flexographic, offset and screen printing inks as well as for radiation-curing overprint varnishes.

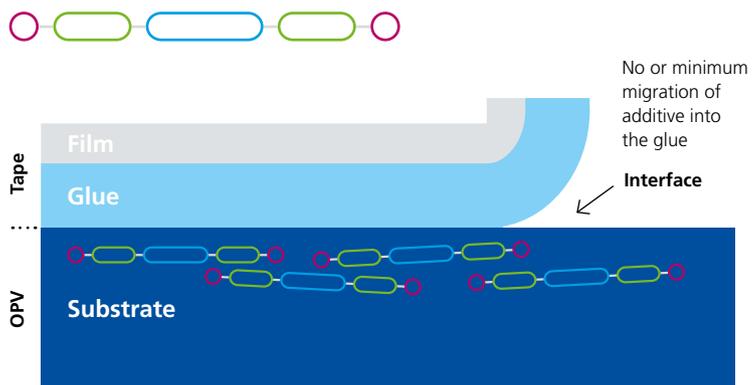
The additives are colorless, odorless, essentially clear and characterized by a very low content of the cyclic siloxanes D4, D5 and D6 (each < 0.1 %).

Benefits

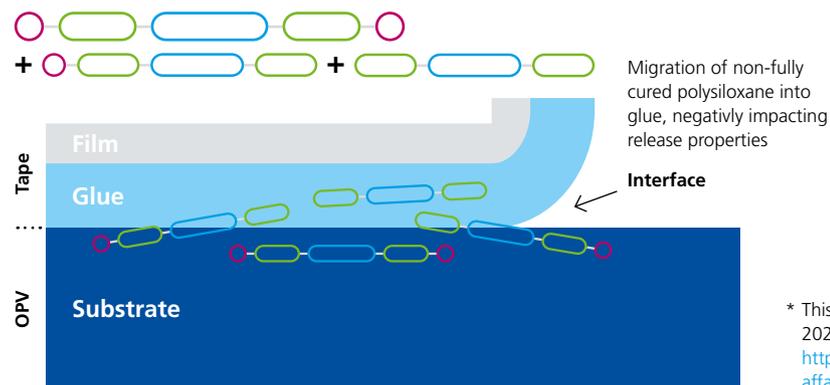
- Provides extremely high slip and maximum tape release properties to UV systems, including UV printing inks, UV screen inks and UV OPV
- Reduces friction in UV based printing inks → provides strong surface slip
- Improves levelling
- Excellent defoaming properties
- Contains defined number of radiation curing crosslinkable groups
- **Low content of cyclic siloxanes** (D4/D5/D6, each < 0.1 %)
- Colorless and odorless
- Essentially clear or slightly hazy product appearance
- Compliant to Swiss Ordinance and Nestlé Guidance Note*

Strictly difunctional polysiloxane for improved release properties

New technology



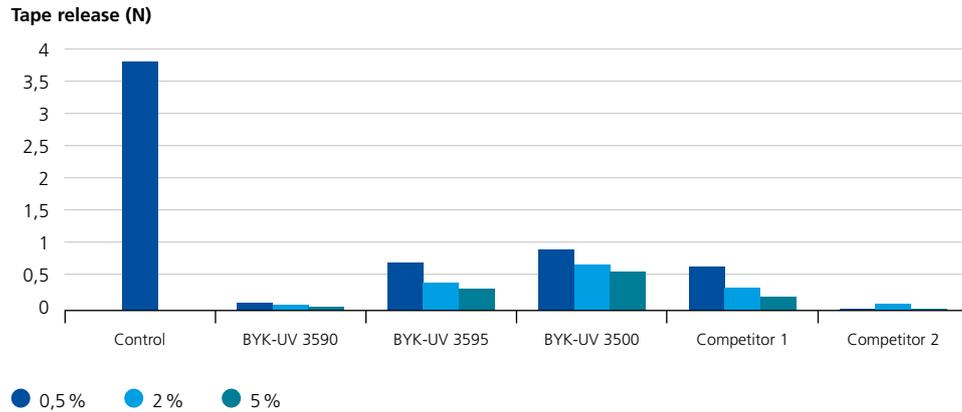
Existing technology



- For drip-off and structuring effects
- For scratchcard systems

* This information is correct as of February 2023. The current status can be found at <https://www.byk.com/en/service/regulatory-affairs/food-contact>

Tape release in an UV overprint varnish



● 0,5 % ● 2 % ● 5 %
Test system: UV overprint varnish, Formulation: 38 % EBECRYL® 608, 25 % TMPTA, 25 % TPGDA, 6 % benzophenone. 6 % EBECRYL® P115

Scratchcard system

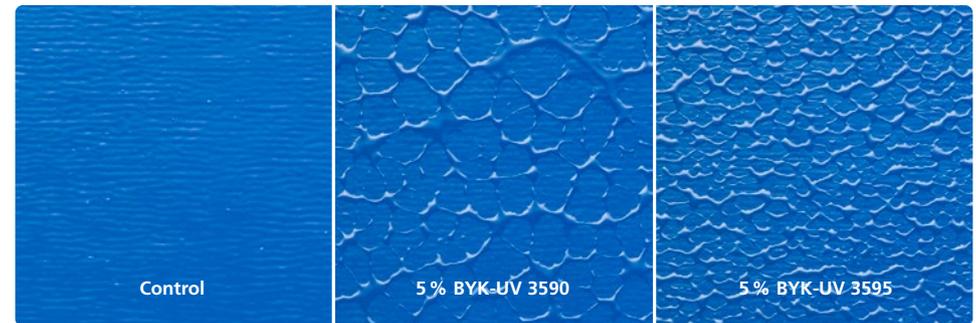


Strictly difunctional polysiloxane for improved release properties

Product	Scratching test after 70 °C storage (days)													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Competitor	Very easy	Very easy	Very easy	Very easy	Very easy	Very easy	Possible	Possible	Possible, but scratching required					
BYK-UV 3590	Very easy	Very easy	Very easy	Very easy	Very easy	Very easy	Very easy	Very easy	Very easy	Very easy	Very easy	Very easy	Very easy	Very easy

Removability of silver layer
 ● Very easy ● Possible ● Possible, but scratching required

Achievable structural effects with an UV OPV



Test system: UV overprint varnish, Formulation: 38 % EBECRYL® 608, 25 % TMPTA, 25 % TPGDA, 6 % benzophenone. 6 % EBECRYL® P115

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This issue replaces all previous versions.

