SILCOLEASE® UV curing systems offer a flexibility to coat filmic and other heat sensitive substrates that is not possible with thermal cure systems.

Energy costs are low compared to thermal systems and space taken by installation is small, making UV an option for speciality users.

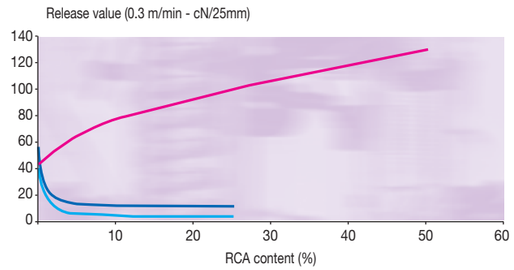
The UV 200 series is based on epoxy functional chemistry with a cationic curing mechanism.

The major advantage of these products is their excellent cure response to UV-C radiation due to the incorporation of patented Iodonium Borate photoinitiator technology. This photoinitiator can be supplied as a catalyst to add to a base polymer but a unique feature of SILCOLEASE® UV 200 series is the possibility to supply a monocomponent system ready to use without further bath formulation.

A range of base polymers offers the flexibility for coating head and substrate variations and release control additives are used to modify the release towards premium or tight values.

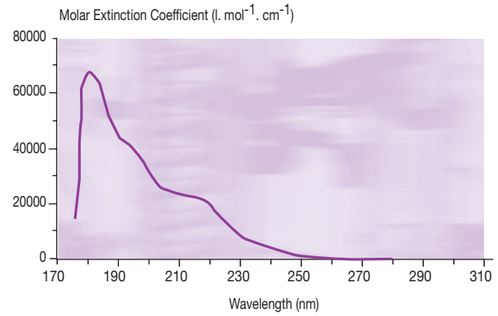
Release control of SILCOLEASE® UV 200 series cationic cure systems.

POLY 200 base polymer on OPP film base
Effect of additives to modify release values from medium release base value



UV lamp requirements for SILCOLEASE® UV 200 series cationic cure systems.

UV–C Lamps emit the most suitable radiation wavelengths for absorption by Bluestar Silicones Iodonium Borate photoinitiator PI 2074 when used in SILCOLEASE® systems.



To complete the radiation cure range the PC 900 free radical curing series based on acrylate functional chemistry is used particularly where substrate inhibition of the cationic reaction is seen. Although free radical systems are obliged to use a nitrogen blanket to avoid cure inhibition from atmospheric oxygen, recent advances in inerting technologies allow faster speeds than those possible in the past. The PC 900 range is complemented by non silicone based extenders and standard free radical photoinitiators.

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BLUESTAR SILICONES

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Solventless Radiation Cure Range

SILCOLEASE® release coatings …using science to a fine art

BLUESTAR SILICONES

Epoxy chemistry with cationic curing mechanism

SILCOLEASE® PRODUCTS	PRODUCT REFERENCE	VISCOSITY (MPA.S)	FEATURES
POLYMER	UV POLY 200	~ 350	• Epoxy base polymer • Medium release (well suited to tape applications) • Very low extractables • Low back side transfer
	UV POLY 201	~ 3500	• High viscosity epoxy base polymer • Excellent holdout on porous substrates • Adapted to flexo coating technology • Medium release (well suited to tape applications) • Very low extractables
	UV POLY 204	~ 50	• Low viscosity epoxy base polymer • Medium release (well suited to tape applications) • Very low extractables • Low back side transfer • Reactive diluent for coating quality improvement
	UV POLY 215	~ 650	• Epoxy base polymer • Exceptional anchorage to untreated films • Very low extractables • Lower coefficient of friction • Medium release
	UV POLY 205	~ 350	• Monocomponent (pre-catalysed) • Medium release (well suited to tape applications) • Very low extractables • Low back side transfer
	UV POLY 220*	~ 5000	• High viscosity epoxy base polymer • Premium release polymer • Particularly suited to bulk adhesive applications
CATALYST	UV CATA 211	~ 4	• Patented Iodonium Borate photoinitiator in IPA • Excellent compatibility with UV epoxy polymer • Highly efficient chain termination
	UV CATA 201	~ 6	• Patented Iodonium Borate photoinitiator in DBL • Lower volatility solvent
	UV CATA 232	~ 5	• Diluted Sb photoinitiator • Low processing odour
PERFORMANCE ENHANCEMENT	UV RCA 200	~ 600	• Premium release additive • Low migration • Suitable for label and tape applications
	UV RCA 210	~ 800	• Premium release additive • Particularly suited to bulk adhesive applications
	UV RCA 251	~ 1400	• Tight release additive • Suitable for many 2 side tape applications
	UV ADD 283*	~ 50	• Reduces coefficient of friction • Reduces blocking for lightweight plastics and 2 side coating applications • Reduces transfer and maintains printability • Premium release additive

** Experimental Product (discuss availability with your technical or sales contact)*

Acrylate chemistry with free radical curing mechanism

SILCOLEASE® PRODUCTS	PRODUCT REFERENCE	VISCOSITY (MPA.S)	FEATURES
POLYMER	PC 900	~ 1000	• High acrylate functionality • Acrylate base polymer
RELEASE CONTROL ADDITIVE	PC 970	~ 1000	• Easy release modifier • Low acrylate functionality • Reduces zippy release phenomena • Excellent EB easy release
	PC 980*	~ 2000	• Tight release modifier
PERFORMANCE ENHANCEMENT	PC 950	~ 400	• Adhesion Promoter for improved anchorage

** Experimental Product (discuss availability with your technical or sales contact)*

Use standard commercially available free radical photoinitiators with the SILCOLEASE® acrylate range. For further details on suitable materials or suppliers, please contact your local representative.

Comparison of cationic and free radical system features

	PC 900 SERIES ACRYLATE SILICONE FREE RADICAL SYSTEM	UV 200 SERIES EPOXY SILICONE CATIONIC SYSTEM
CURE RATE	FAST	FAST
OXYGEN INHIBITION (N_2 INERTION REQUIRED)	YES	NO
SUBSTRATE SENSITIVITY	NO	YES
SILICONISE OVER PRINT	YES	LIMITED
SHRINKAGE	YES	NO
ADHESION	GOOD	GOOD
UV AND EB CURABLE	YES	YES