WACKER

CREATING TOMORROW'S SOLUTIONS

EMULSIONS

DEHESIVE®

PAPER & FILM I RELEASE COATINGS

UNIQUELY MULTIFUNCTIONAL:
DEHESIVE® EMULSION SYSTEMS

DEHESIVE® RELEASE SYSTEMS: THREE PRODUCT GROUPS, FOUR COMPONENTS AND INFINITE POSSIBILITIES

DEHESIVE® release systems consist of four basic components: polymer, crosslinker, catalyst and controlled-release additive. These components can be combined in a variety of ways to offer customized solutions that meet your needs. This applies to solvent-based and solvent-free systems as well as emulsions.

1

Polymers

Reactive silicone polymers form the basis of the DEHESIVE® release system. With addition-curing systems, vinyl DEHESIVE® polymers impart the best release properties and rapid curing. Chain length, structure and the number of reactive groups are critical parameters for the properties of the resultant network and thus the release effect and release-force profile. Thanks to the tight polymer network, the release force is less dependent on the peel-off speed, resulting in a flat release force profile.

2

Crosslinker

Silicone hydride siloxanes serve as crosslinkers, reacting with the DEHESIVE® polymer and the CRA® during curing to yield the release coating. The type and quantity of the crosslinker have a crucial influence on the system's reaction rate, anchorage of the coating to the substrate and the interaction with the adhesive. Consequently, the crosslinker is a key determinant of cost-efficiency in the production and long-term stability of the laminate.

3

Catalysts

Platinum catalysts are used to increase the reaction rate. WACKER catalysts are highly active platinum complexes which ensure that the DEHESIVE® polymer and crosslinker cure rapidly even at processing temperatures as low as 85 °C. The key to a cost-efficient coating is to match the quantity of platinum to the specified curing conditions.

4

Release Force Booster – The CRA®

CRA® controlled release additives play a crucial role in the formulation of the four basic components: they determine the specific release force.

DEHESIVE® EMULSION SYSTEMS ARE UNIQUELY MULTIFUNCTIONAL

DEHESIVE® Emulsion Systems

- Solvent-free
- Ready-to-use concentration
- May be used in a dilute form
- Rapid curing
- Long pot life
- Good shear stability
- Very good wetting properties
- Excellent anchorage

- Smooth machine papers (baking papers)
- Glassine papers
- Kraft papers
- Polyester films

Look – no crumbs: baking papers coated with DEHESIVE® emulsion systems.

With their specific properties, DEHESIVE® emulsion systems open up new applications for silicone coating. And it is easy to switch to this product range.

Compelling Benefits

DEHESIVE® emulsion systems are processed as addition-curing, two-component or three-component systems. They are ideal for coating open-pored papers or for producing low coat weights. Further advantages include long pot lives, good shear stability, outstanding wetting properties and excellent anchorage to a diverse range of substrates.

Simple Switchover

DEHESIVE® emulsion systems offer another key advantage: equipment used for solvent-based systems can be easily switched over to emulsion coating.

Concentrated or Diluted

Emulsions can be processed in a highly concentrated form (e.g., 50%) or as a dilution with deionized water. The dilute formulation usually has a silicone content of between 10% and 20%. Since emulsions contain water, they need to be protected against freezing and excessively high storage temperatures. It is recommended to mix thoroughly prior to use. This recommendation is especially pertinent to crosslinking emulsions. Suitable processing systems include simple multi-roll coaters, airbrushes, gravure rolls or size presses in-line with the paper machine and a drying section of adequate length.

SELECTED PRODUCTS

DEHESIVE® Polymers	Features	Soilds [%]	Application
DEHESIVE® EM 400	Low to medium release levels & good cure, for two-component systems	50	For inline PET coatings
DEHESIVE® EM 490	Low release, very fast curing, for three-component systems	50	For general application on porous and closed papers
DEHESIVE® EM 491	Low release, very fast curing, for three-component systems	50	For general application on porous and closed papers

CROSSLINKER	Features	Soilds [%]	Application
CROSSLINKER V 15	Excellent wetting, optimal for fast cure / anchorage	40	Multipurpose
CROSSLINKER V 68	Fast cure systems and optimal anchorage, high shear stability	50	Multipurpose
CROSSLINKER V 72	Excellent wetting, very fast cure systems	40	Multipurpose

CATALYST	Features	Soilds [%]	Application
CATALYST EM 440	Platinum catalyst, very fast cure	43	Enhances anchorage on film
CATALYST EM 470	Platinum catalyst, fast cure systems and optimal anchorage, high shear stability	56	Multipurpose

CRA®	Features	Soilds [%]	Application
CRA® EM 92	Highly efficient release modifier	45	For tight release properties on paper and films

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