



ADCOTE™ 102A/ COREACTANT F

Description

ADCOTE™ 102A/ COREACTANT F is a solvent-based two-component polyurethane adhesive system for flexible packaging and industrial laminations. This adhesive system is TDI based.

ADCOTE™ 102A/ COREACTANT F adheres to a wide variety of substrates including cellophane, treated polyolefins, polyester, polyamide, aluminum foil, metallized and PVdC coated materials, and the treated side layer of heat sealable co-extrusions.

ADCOTE™ 102A/ COREACTANT F provides optical clarity, high bond strength, and a high level of heat and chemical resistance.

Typical Applications

Applications where higher temperature resistance is required.

Films should be printed with suitable ink for lamination.

For food packaging, medical packaging and industrial applications.

Lamination of metallized and aluminium foil structures with and without sandwich print.

The adhesive has a high heat and product resistance aggressive materials such as tomato concentrates, soaps and cosmetics.

Suggested Substrates

Aluminium foil, converter grade.

Aluminium oxide (AlOx) coated films.

Cellulosic film (cellophane).

Film to foil laminations.

Metallized films.

Metallized polyester (met-PET).

Oriented polyamide film (OPA) or oriented nylon (BON).

Outer layers of retortable structures to laminate polyester to foil or nylon to foil.

Polyester (PET).

Polyvinyl chloride (PVC).

Polyvinylidene di-chloride (PVdC) coated substrates.

Reverse printed or unprinted substrates.

Silicon oxide (SiOx) coated films.

Substrates should be printed with suitable inks for lamination.

Treated cast polypropylene (CPP) (minimum 38 dyne/cm).

Treated coextruded film, (minimum 38 dyne/cm).

Treated polyethylene (PE), (minimum 38 dyne/cm).

Treated polyethylene PE (including EVA-types).

Treated polypropylene (PP), (minimum 38 dyne/cm).

Structures with and without reverse printing.

Other types of laminates are possible and should be tested.

Typical Physical Properties	Adhesive	Coreactant	Unit
Component Type	OH	NCO	
Solids Content	36	75	%
Viscosity (25°C)	600	1800	mPa·s
Weight/Gallon	7.70	9.90	lb
Volatile Solvent	Methyl Ethyl Ketone	Ethyl Acetate	
Mix Ratio by Weight (PBW)	100	6.5	
Wet Appearance	<ul style="list-style-type: none"> • Clear to Hazy • Liquid • Slightly Amber 	<ul style="list-style-type: none"> • Clear to Hazy • Colourless to Slightly Yellow • Liquid 	

Recommended Processing Guidelines

The product can be diluted to the desired solid content with urethane grade solvents like: Methyl Ethyl Ketone (MEK), Ethyl Acetate (EAc), Acetone.

The quantity of solvent to be added for the different final solid is shown in the enclosed dilution table.

Dilution Table	Viscosity	Unit	Test Method
Viscosity (25°C)			Zahn Cup 2
Solids: 10%, Adhesive: 11 kg, Coreactant: 0.72 kg, Ethyl Acetate: 34 kg	17	sec	
Solids: 15%, Adhesive: 17 kg, Coreactant: 1.1 kg, Ethyl Acetate: 28 kg	18	sec	
Solids: 20%, Adhesive: 22 kg, Coreactant: 1.4 kg, Ethyl Acetate: 22 kg	24	sec	
Solids: 25%, Adhesive: 28 kg, Coreactant: 1.8 kg, Ethyl Acetate: 16 kg	41	sec	

General Comments

Dow's Technical Service is ready to supply assistance in regards to the correct use of our products.

Interaction may occur with other components of the structure. Inks, retained solvents from any source, substrates, additives, coatings and the packed product are some of the components that may cause a property change of the total structure.

Before regular production, the end user is responsible to verify the suitability and performance properties of the total construction for the intended end use application, including the suitability of the process, construction and components.

The optimum performance of initial and final bonds is achieved when substrates are corona treated in a range of ≥ 38 to ≤ 55 dyne/cm. This is substrate dependent.

If used in conjunction with high slip films (COF <0.2), it is strongly recommended to verify that potential film property changes, due to the lamination process and materials, are acceptable for the end use performance requirements.

The adhesive layer must be separated from the food product by a functional barrier. Consult your Dow Technical Sales representative for suggestions and further information.

Laminations containing plasticized PVC films should be evaluated thoroughly to determine the resistance of the adhesive to plasticizer migration.

Recommended Application Weight

Apply 2.0 to 3.3 g/m² dry, depending on substrate, printing and application.

Higher applied adhesive weights may be required in laminations of heavy gauge substrates and/or where high levels of heat or chemical resistance are required.

Drying Guidelines

An increasing temperature profile in multi-zone dryers is recommended.

Dry properly with sufficient amount of heated air at adjusted temperature range of 66 to 82°C to evaporate solvents at given production speed.

Nip Temperature

For a good lamination adhesion bonds, nip temperature should be 71 to 93°C.

The rubber roll in the nip with hardness of 85 Shore A or greater is recommended.

Slitting / Rewind Time

Slitting and rewind is possible after 1.0 to 2.0 day at 21°C (70°F).

Curing Time

Converters should verify appropriate cure times and conditions for their individual application.

Full cure properties are typically achieved in 7.0 to 15.0 day at 21°C (70°F).

It is necessary to wait until complete curing has taken place before the laminate is fit for use.

Approximate Pot Life

The mixed Pot Life of the product is approximately > 8.0 hr at 15% of solids content. It can vary based on environmental temperature and humidity conditions.

Suggested Application and Operating Guidelines	Adhesive	Unit
Application Method	Gravure	
Application Cylinder or Anilox Range	30 to 51	lines/cm
Application Solids Percent Range	15 to 25	%
Recommended Dilution Solvent	<ul style="list-style-type: none"> Ethyl Acetate Urethane Grade Methyl Ethyl Ketone Urethane Grade Toluene 	
Drying Web Temperature	66 to 82	°C
Lamination Nip Temperature	71 to 93	°C
Cleaning Solvent	<ul style="list-style-type: none"> Ethyl Acetate Methyl Ethyl Ketone Toluene 	

Suggested Cleanup Guidelines

A proper cleaning procedure should be implemented and practiced as part of the machine operation.

After finishing work, the equipment should be cleaned immediately with organic solvents like ketone or acetate, or similar organic solvents before the product's cure progresses too far.

Storage and Shelf Life Guidelines

The expiry date of each product is the date reported on the label of the package.

The product may be stored up to stated expiry date provided that the product is stored in a dry and cool, well ventilated place between 5 - 35°C (41 - 95°F) unopened in the original shipping container.

When exposed to cold temperatures of 0 - 10°C (32 - 50°F), the product may form a reversible gel or structure while in solution. This is a physical phenomenon and has no bearing on the final characteristics or performance of the product.

This characteristic is reversible when both heat and shear are applied. Heat the product safely in the original container to 35 - 60°C (95 - 140°F). Allow venting of the container. Avoid using electric band heaters which may cause localized hot spots.

Upon reaching target temperature, mix for 1 to 3 hours with moderate shear, using a disperser or "Cowles" type blade until completely homogeneous and no gel particles. Replace any lost solvent or dilute as necessary for the application method to be used.

Disposal

Dispose in accordance with all local, state (provincial) or federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) or federal regulations. Contact your Dow Technical Representative for more information.

FDA and/or European Food Contact Compliance

Due to the evolving nature of European and FDA food contact compliances, please contact Dow's Customer Information Group for the most up to date food contact compliance information. Call 800-258-2436 or use the web form at Dow.com for complete FDA and European food contact statements available.

Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

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