

## TECHNICAL DATA SHEET

### NOVACOTE SF-7688 with co-reactant CA-7957

<b>DESCRIPTION</b>	NOVACOTE SF-7688 with co-reactant CA-7957 is a solvent-free two-component polyurethane (PU) adhesive.	
<b>PRODUCT PERFORMANCE</b>	<p>NOVACOTE SF-7688+CA-7957 is used for lamination of printed and unprinted transparent and metallized (including SiOx / AlOx coated films) PET-, BOPP-, CPP-, OPA-, CPA- and PE-structures as well as Al foil. Laminates manufactured using NOVACOTE SF-7688+CA-7957 show excellent bond and sealing strength after final curing. Many transparent and Al foil structures are highly resistant to pasteurization, boiling and sterilization.</p> <p>Suitability of printing inks, films, additives, etc. must be tested by the user prior to the use of NOVACOTE SF-7688+CA-7957. In case of changes in the quality of one component these tests have to be repeated</p>	
<b>TYPICAL PRODUCT DATA</b>		
	<b>SF-7688</b>	<b>CA-7957</b>
<b>Type / chemical Character</b>	NCO	OH
<b>Solid content (%)</b>	100	100
<b>Viscosity at 25°C (mPas)</b>	10000 ± 2500	900 ± 500
<b>Density at 20°C (g/cm<sup>3</sup>)</b>	1.16	1.12
<b>Appearance</b>	Clear to slight hazy	clear
<b>Standard Mix Ratio 1 (Mass %)*</b>	100	30
<b>(Vol %)</b>	100	31.1
<b>Standard Mix Ratio 2 (Mass %)*</b>	100	25
<b>(Vol %)</b>	100	25.9

\*Mix ratio depends upon ink quality and end-use requirements of laminate such as heat resistance

<b>PROCESSING OF ADHESIVE</b>		
<b>MIXING INSTRUCTION</b>	<p>NOVACOTE SF-7688+CA-7957 should be used on machines equipped with an automatic metering and mixing unit with continuous mixing of the adhesive components at a selected ratio.</p> <p>For a test production both components could be premixed with an efficient agitator and then be poured between the metering rollers of application unit. The adhesive mixture should be processed within 15 minutes to obtain a constant coating weight.</p>	
<b>APPLICATION TEMPERATURES</b>	Mixing unit:	40 to 45°C
	Dosing roller:	40 to 50°C
	Application roller:	50 to 60°C
	Nip roller:	40 to 70°C
<b>CLEANING</b>	<p>If the machine is stopped for more than 20 minutes, the application unit rollers should be cleaned. Suitable cleaning agents are NOVACOTE CL-7000, plasticizers or glycerol triacetate. If the adhesive application units are explosion-proof, esters or ketones may also be used for cleaning. All precautions listed in the product <b>Safety Data Sheets</b> (SDS) of the cleaning agents should be taken.</p>	

<b>PRE-TREATMENT OF FILMS</b>	Plastic films should be suitably pre-treated with corona discharge or chemically treated. For polyolefin films, corona treatment is mandatory. Pre-treatment will improve the results obtained with polyester and nylon films. Recommended corona treatment level on common films is as follows: PE, PP films: 38 dynes/cm; PET, O-Ny: 52 dynes/cm; metallized films: 38-40 dynes/cm. In-line corona treatment of pre-treated films (especially polyolefin films) further improves wettability of adhesive. Al foil surface should be free from any residual rolling oil.
<b>ADHESIVE COATING WEIGHT</b>	Standard applications : 1.2 – 2.2 g/m <sup>2</sup> Higher demands (e.g., Boil-in-bag and sterilization applications): 2.2 – 2.8 g/m <sup>2</sup> <b>Note:</b> The required coating weight for a particular application should be defined in specific trials by the end-user.
<b>CURING</b>	The curing reaction starts immediately after mixing. Rewinding and slitting is possible after 24 to 72 hours. Best product resistance is reached after 7 to 10 days curing at room temperature of around 25 °C. Curing of laminated rolls at elevated temperatures (35°C - 45°C) will reduce curing time, and increase heat and product resistance properties.
<b>SAFETY INSTRUCTION</b>	<b>NOVACOTE SF-7688+CA-7957</b> contains monomeric MDI and should be processed only when special precautions in handling are taken ( <b>refer to Safety Data Sheets</b> ).
<b>STORAGE</b>	The adhesive containers should be stored at room temperature in a dry area. Guaranteed shelf-life is 6 months from the date of delivery in unopened, original containers stored away from direct sunlight, heat source and rain. Once opened, containers of <b>NOVACOTE SF-7688</b> and <b>CA-7957</b> should be closed tightly again and the material should be consumed within a short period of time.
<b>FOODSTUFF LEGISLATION STATUS</b>	<p>For the manufacturing of <b>NOVACOTE SF-7688</b> and <b>CA-7957</b> only monomers and other starting substances and additives are used, which are listed in:</p> <ul style="list-style-type: none"> <li>• Regulation (EU) No. 10/2011 of 14 January 2011 and amendment and/or</li> <li>• The US Code of Federal Regulations (US FDA): 21 CFR 175.105 (Adhesives)</li> </ul> <p><b>NOVACOTE SF-7688</b> and <b>CA-7957</b> are manufactured in accordance with the guideline 94/62 and do fulfil the mentioned limit of &lt;100ppm for lead, cadmium, mercury and chromium(VI).</p> <p><b>NOVACOTE SF-7688</b> and <b>CA-7957</b> do not contain BHT, BHA, TPP, BPA, BADGE, BFDGE and NOGE.</p> <p>Detailed information regarding actual foodstuff legislation status is available upon request.</p>
<b>IMPORTANT NOTE</b>	Before we introduce a new adhesive to the marketplace, the adhesive is comprehensively tested in our own laboratories. However, because of the hundreds of possible film combinations and the different printing ink systems used in various parts of the world, as well as the diversity of food, cosmetics, medical and pharmaceutical products that may be packaged in laminates made with our adhesives, we <u>cannot</u> possibly forecast their performance under all circumstances. Therefore, we strongly urge our customers to test our adhesives on a small scale to establish that laminates made with our adhesives are suitable for the end-uses for which they are intended prior to commencing large-scale production.

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The information provided herein is to our best knowledge true and accurate. However, we cannot accept liability for any recommendation or representation made, since the conditions and methods of application are beyond our control. These are typical physical properties, not manufacturing specifications. For health and safety requirements, please refer to the Safety Data Sheets (SDS).