



# Waterbased Coating Technical Data Sheet

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## 1512 Soft Feel Waterbased Coating

### Product Description:

- Dull waterbased coating that will provide a “soft” feel or suede-like finish to paper and paperboard
- Surface can accept UV over-coating
- Surface can accept adhesive application
- Surface can accept foil application

It is **highly recommended** that an Aziridine catalyst be added to 1512 for improved rub resistance and film hardness. This is particularly important on jobs which require:

- Two-sided printing/coating
- Heavy/saturated ink film areas created by process builds and/or special color inks
- Jobs which require manual and/or mechanical handling which can result in polishing/burnishing of the coating surface
- Jobs which require long-term storage, particularly in non-climatized conditions

**Please consult the attached document for Aziridine handling instructions and best practices for 1512 use.**

### Product Characteristics:

	<u>1512C</u>	<u>1512D</u>
Viscosity		
Brookfield; spindle #2, 20 RPM, 77F	200-500 cps	175-300 cps
Zahn Cup #3, 77F	20-25 sec	15-20 sec
Solids	33% +/- 1%	33% +/- 1%
Recommended Coat-weight = 3000 ft/sq	1.0-1.5 dry/lb	1.0-1.5 dry/lb
Slide Angle @ 70-75F, 45-55% RH	>25	>25

All COF and slide angle readings are for reference conditions of 70 - 75 F and 45 - 55% RH with samples aged under TAPPI conditions. These values will vary with coat weight, substrate and ink type and coverage and are provided as guidelines only. Specific testing should be done with your materials.

Rub Measurement	-Poor-	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	-Excellent-
		1	2	3	4	5	6	7	8	9	10	
Gloss Measurement	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	< 10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100		

### Product Handling Procedures:

- Always inspect product for correct product identification prior to use
- Always mix product thoroughly prior to use
- Check viscosity and temperature of coating prior to use
- Keep product from freezing

### Product Dilution:

Add 1% water, mix and re-check viscosity. Repeat until desired viscosity is reached

### Product Clean-up:

- Clean coating blanket, coating applicator and coating circuit with warm water
- For dried coating, use water/ammonia/alcohol mixtures
- For best cleaning results with CAC coating products, use CAC 501/512 coating cleaners

The information provided is based on controlled laboratory conditions; actual results may vary according to the application process and substrates used. Coatings and Adhesives Corporation believes the data provided is accurate under the specific test conditions prepared and tested. Coatings and Adhesives Corporation makes no warranty with respect thereto and expressly disclaims all liability for reliance thereon and offered solely for your consideration, investigation and verification.

## 1512 Soft Feel Waterbased Coating

### Application Considerations:

- Rub resistance should be carefully tested and qualified prior to full production, particularly when using 1512 on carton applications. The post-press applications/processes should be taken into consideration as manual and/or mechanical handling, particularly through finishing equipment, can create polishing/burnishing of the coating surface. Contact with belts, rollers, suckers and other moving and non-moving mechanical parts can create an undesirable mark on the coating surface. Care should be taken in the mechanical set-up of all equipment surfaces used in processing printed/coated pieces using 1512. **THE ADDITION OF 2% AZIRIDINE CROSS-LINKER IS RECOMMENDED TO IMPROVE COATING FILM HARDNESS AND RUB RESISTENCE.**
- Avoid using 1512 in-line over printed areas of heavy/saturated ink films such as metallic inks, low pigment special colors, "rich" blacks or process inks ran at abnormally high densities. Inks that require high amounts of fountain solution can create an unstable ink/dampenig emulsion which can contribute to uneven transfer/coverage with 1512. **High solids, hard-dry inks that contain a higher content of drying oils are recommended for use.**
- When running two-sided work using 1512, make certain the ink/coating from the first side printed is completely dry before turning the sheets and proceeding with the second pass.
- When using 1512 over cured Hybrid UV/UV inks, test and qualify that the inks do not contain silicone or non-imprintable waxes that can contribute to adhesion failure. Inks that contain silicone or high levels of micronized, low molecular weight waxes will not gain or improve adhesion to 1512 if the sheets are run under the UV lamps on a second pass.
- Being a dull coating, 1512 is susceptible to gas/chemical ghosting; precautions similar to running varnishes should be followed.
- Adhesion can be an issue when using 1512 over digital inks or dry-trapping over offset inks. The use of wax-free coatable inks should be used when dry-trapping with 1512.
- Avoid running spot UV coatings over 1512 on two-sided jobs, particularly when dark solids ink areas are involved. The result can be gas/chemical ghosting if the 1512 and inks are not completely dried prior to UV application.
- Testing in advance to determine the correct combination of ink, stock, coat-weight is recommended when using a specialty technology material such as 1512.
- In instances when heavy/saturated ink films are unavoidable, gas/chemical ghosting is a strong possibility, and/or adhesion is a concern, it is recommended to use a primer coating prior to 1512 application. CAC coating products such as 1428 and 1365 satin coatings are acceptable primer coatings for use with 1512, but this should be tested and qualified through your system prior to full production.
- Experience has proven that dull stocks provide the best surface to optimize the lay and suede feel of 1512.
- Depending on the substrate, inks, expectations and application method, mutiple passes of 1512 may be required to achieve the desired results
- Anilox recommendations: 8-11 BCM, 180 LPI, Quadrangular engraving @ 60 degrees.

## Aziridine Cross-Linker Instructions for use with 1512

It is **highly recommended** that an Aziridine catalyst be added to 1512 for improved rub resistance and film hardness. This is particularly important on jobs which require:

- Two-sided printing/coating
- Heavy/saturated ink film areas created by process builds and/or special color inks
- Jobs which require manual and/or mechanical handling which can result in polishing/burnishing of the coating surface
- Products which require additional surface applications such as UV coating, foil application
- Packaging/folding carton products
- Products which require heavy end-user handling; example: book cover
- Products which are prone to in-transit abuse
- Jobs which require long-term storage, particularly in non-climatized conditions

A level of 1-2% Aziridine by weight should be added to 1512 prior to use. The Aziridine catalyst will react at room temperature on the printed/coated sheet over the course of 12 to 24 hours. In the drum, the Aziridine additive will slowly dissolve and lose its effectiveness over a 24 hour period, thus, it is good practice to only add Aziridine to coating which will be fully consumed within 8 hours. Once 1512 has had Aziridine added, it **CANNOT** have additional cross-linker introduced. 1512 that has had Aziridine added but left unused can be diluted by adding to un-catalyzed 1512.

### Mixing Instructions:

- Determine how much coating will be used in a 24 hour period and add 1-2% Aziridine to the amount of coating that will be consumed when continuously running for less than 24 hours. This may require decanting coating from a larger drum into a 5 gallon pail or 30 gallon drum, depending on the coating volume that will be required.
- Mixing the Aziridine in a ratio of 1:1 with water prior to adding to 1512 will speed up the mixing process. Always mix the Aziridine with 1512 thoroughly prior to use. When mixing into a drum, a drum mixer should be used to insure proper and adequate blending. Drum paddles are not recommended for proper mixing of the cross-linker in 1512 as they do not adequately blend the two components. The cross-linker is a viscous material; prior dilution in water will lower the viscosity and avoid the material from settling to the bottom of the container creating gel balls to occur if not adequately mixed. 1512 that has been mixed with cross-linker should have constant agitation. When mixing into a 5 gallon pail, a mixer capable of blending the materials should be used such as a drill with a paint blade attachment.
- On long runs when a large quantity of 1512 and Aziridine has been blended, the cross-linker will not re-dissolve as typical with standard waterbase coatings. Skinning or dried clumps can develop. It is suggested that an in-line filter be used when pumping 1512 from the drum into the coating circuit to prevent contamination. When using smaller quantities such as 5 gallon pails, only enough coating should be blended with cross-linker to accommodate <8 hours of continuous running to avoid skinning/drying.
- Upon aging, the cross-linking agent that has been blended with 1512 will lose its effectiveness and can react like a plasticizer and diminish the rub resistance of the coating. Additional cross-linker cannot be added to the coating that has been previously blended with Aziridine as this can create poor rub resistance. Any catalyzed coating that has not been used should be diluted by adding to 1512 that has not had Aziridine added, or discarded.