

SIMCHEM STARCH ADDITIVE PRODUCTS

Starch Philosophy

A sticky, stringy starch rheology is the key to achieving a strong bond at high corrugator speeds. This is accomplished by using a proprietary pearl starch modifier (AirLock) added in the primary cook to break down the starch molecule, allowing our customers to cook more starch in the primary. No other performance-enhancing additives are needed.

Additive Products – SimChem Formula

The following products are used in every SimChem Batch.

AIRLOCK	ULTRASEAL RESIN
<ul style="list-style-type: none">• Ammonium-persulfate solution• Modifies pearl starch, allowing user to cook more pearl in primary cook. (135-145 lbs.)• Gives starch sticky, stringy rheology• <u>Product Benefits</u><ul style="list-style-type: none">○ Faster corrugator speeds,○ Stronger and faster bond,○ Improved paper penetration○ Improved Pin Test Results,• 17 lbs. per batch.• Manufactured in Greenville, SC	<ul style="list-style-type: none">• Ketone-formaldehyde water-proofing resin.• Insolubilizes starch glue line.• High-quality raw materials reduce usage and increase performance.• <u>Product Benefits</u><ul style="list-style-type: none">○ Improved water resistance○ Consistently high wet pins○ Minimal usage per batch.○ Up to 5% Increase in corrugator speed.• 38 lbs. per batch.• Manufactured in Greenville, SC.
BXL – 50 LIQUID BORA	FRS – 10 DEFOAMER
<ul style="list-style-type: none">• Highly-concentrated, liquid borate solution to replace powdered borax.• Supplied in totes and pumped to batch via starch system infrastructure.• <u>Product Benefits</u><ul style="list-style-type: none">○ Replaces hopper system○ Less dust and borax spills○ Consistent mix throughout batch○ Prevents “fish-eyes” in starch.• 12 lbs. per batch.• Manufactured in Dalton, GA	<ul style="list-style-type: none">• Highly effective defoaming agent formulated for starch-based adhesives.• Components satisfy <u>FDA 21 CFR Sec. 176.170</u>. (Indirect Food Contact)• High activity level kills foam at low usage levels.• <u>Product Benefits</u><ul style="list-style-type: none">○ Highly efficient = low usage○ Instantly effective○ Low environmental impact.• 3 lbs. (48 oz.) per batch.• Manufactured in Dalton, GA.

Ben Simmons
(919) 593 – 4270

ben.simmons@simchem.net



A Preferred SNF Distributor

Other Starch Products

The following products are available for customers, but not required in SimChem's standard formula.

MACHNE CLEAN STARCH CLEANER

- Starch cleaning agent used to clean all corrugated equipment (storage tanks, starch lines)
- Dilute desired amount with water and pump through starch system.
- Spray on floor, tanks, and equipment.
- Product Benefits:
 - Cleans tanks, lines, rolls, equipment
 - Non-hazardous – safe and easy to use.
 - Non-foaming – can be agitated
- 25% Solution – 2,375 lbs. : 625 lbs. + 1,750 lbs. water for full system clean.
- 25% Solution – 50 lbs.
- Manufactured in Pendergrass, GA

MAXXGOLD FORMALDEHYDE-FREE RESIN

- High quality resin product made from sugar molecule.
- 100% formaldehyde free – ZERO formaldehyde in product formula.
- Revived Pre-manufacturing Notice (PNA) under EPA's Toxic Substance Control Act (TSCA) Approval Process (Lautenberg Chemical Safety Act of 2016)
 - Allows manufacturing and trials at no cost to customer to gather more data.
 - Must follow strict handling and disposal guidelines..
 - All data must be submitted to EPA.
- Supplied in corrugated totes for easy disposal – saves 3 million lbs. of cleaning water per year.

AIRSEAL – SWIFT

- Performance-enhancing starch additive designed to increase corrugator Runability and speed.
- Can be blended with ketone formaldehyde resin. (50%/50%)
- Product Benefits
 - Strong thermoset/cross-linked starch bond
 - Increased corrugator speeds when running heavy weight board.
 - Increased water resistance
 - Non-hazardous, safe for plant personnel.
- 45 lbs./batch added in Step 14 (50/50 blend)
- Manufactured in Pendergrass, GA.

ULTRABOND OBM

- One-bag starch mix formulated for Asitrade/Laminator machines, or other small volume starch applications.
- 20 – 25 sec. viscosity (Love Cup) and 142°F Gel Temp.
- No caustic or borax required – included in formulation.
- Supplied in 50 lb. bags or 750 lb. Supersacks.
- Product Benefits
 - Provides strong starch bond.
 - Easy to use – Requires mixing only
 - Increased machine speeds
- 300 gallon batch: 15 – 18 bags per batch (750 lbs.) + 230 gals. Water + 4 mins. mix time.
- Manufactured in Pendergrass, GA

Developmental Products

The following products are currently under development and available for trials.

ULTRABOND – K

- Powdered mixture to replace pearl starch usage
- Starch-based Ingredients that simulates primary cook.
- Replaces up to 250 lbs. of plant Peral starch per batch, Replaces caustic and borax.
- No change to overall starch concertation – 28%.
- **DRAWBACK** – product still based on pearl starch.
- Supplied in 50 lbs. bags or Super Sack
- 300 gal. Formula – 12-15 mins. mix time.
 - 150 lbs. – UltraBond – K (3 bags)
 - 750 lbs. – Plant Pearl Starch
 - 2,250 lbs. – Water
- 12- 15 mins. of mix time

CBB – 49

- Caustic-borax blend that removes the need for borax in plant.
- 1:1 replacement product
 - 40 lbs. – 45 lbs. per batch
- Supplied in bulk and stored in existing caustic tank.
 - Can be supplied in totes.
- **DRAWBACK** – still hazardous product that requires proper handling storage.
- Trial pending with well-known corrugating company.