

# Evolution

## STARCH OFF

Upgraded Evolution Starch Off gives  
**greater than 100% activity increase**  
over Super Starch Off.

**Clears away starch buildup on corrugators completely**

### Production Benefits Gained

- Reduced down time from blockages in the lines
- Cleans piping and drains out
- Reduces solids in your waste treatment plant
- Cleans applicators giving even distribution of starch, so you use less
- Reduced board warp giving increased production speed
- Reduced delamination giving greater production output
- Increased board strength
- Reduced cure temperature and energy cost
- No need for corrosive caustic or chlorine that damages your pipes
- Reduced water wastage and trade waste for treatment
- Time saved (hours) increases production or gives extra maintenance time
- Protects your equipment from wear and tear



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'Cleaning in Place' Enzyme based detergent series products

PENDING  
WORLD PATENT  
PENDING  
**NEW**  
TECHNOLOGY BREAKTHROUGH

# Evolution



## Optimized biodegradable enzyme control for starch removal

EVOLUTION STARCH OFF is an optimized blend of enzyme based detergents designed to remove starch buildups overnight or during downtime, without using corrosive and dangerous caustic or chlorine cleaners. EVOLUTION STARCH OFF addresses these common dried starch problems.

- Blockages in lines
- Blockages in drains
- Excessive solids in the waste water
- Uneven starch distribution
- Possible bacteria growth
- Excessive water wastage during cleaning
- Excessive time and labor wasted with an often incomplete job

EVOLUTION STARCH OFF is the most exciting breakthrough in starch removal, waste water and equipment maintenance today. Capturing the extra time saved by using our automated system will enable management to achieve higher production output.

### INTRODUCING OUR AUTOMATED SYSTEM TO A PLANT

1. Install our automated patent pending ESO delivery system (Cleanprint supervised). Our installation includes a Cleanprint supplied hot water service for 104°F/40°C temperature control and dilution device to a tap and hose to fill pots and foam gun for daily manual application to external surfaces.
2. For deep system cleaning, manually diluted ESO from your starch kitchen at the higher temp of 140-158°F/60-70°C is circulated and recycled through pipes, pumps, tanks, over rolls and glue pots for a minimum of 4 hours weekly. (See notes below)
3. We require a suitable position for ESO 264 gallon/1000 litre container with easy and safe forklift access.

### OPERATING INSTRUCTIONS

1. For daily cleaning, foam ESO on external equipment diluted to 20% and **heated to 104°F/40°C** controlled by a hot water system we install in your plant and reapply a few times over 30 minutes for a full wash-up. Rinse clean with warm/hot water.
2. For weekly cleaning, dilute ESO concentrate with warm water at **140-158°F/60-70°C** heated from your plant's starch kitchen boiler system to make the amount required to circulate through your corrugator. Circulate ESO through system for a **minimum 4 hours at 140-158°F** at 1:10 for normal buildup. Dilute at 1:5 and circulate for 4-6 hours for heavy buildup. **DO NOT USE DIRECT STEAM INJECTION into the ESO, it is above the optimal temperature and will destroy the enzymes. If PVC piping is used, temperature must be restricted to 122°F/50°C**
3. Rinse system clean with warm/hot water through all the equipment and run to waste.

### PRODUCT SUPPLY

EVOLUTION STARCH OFF is supplied in 264 gallon/1000 litre bulk containers to be diluted at 1:5 to 1:10 with water. It can be applied manually or automatically.

### WHY ENZYMES?

Enzymes are biological molecule catalysts that act on other biological molecules like starch. They don't get used up in each reaction and can work in the right conditions until all the starch is broken apart and dissolved. Enzymes are a part of nature and are fully biodegradable.

### STOP USING CAUSTIC OR CHLORINE CLEANERS !

There are no hazardous waste products in the EVOLUTION STARCH OFF enzyme process. By using EVOLUTION STARCH OFF you remove the need for corrosive cleaners, you also remove the undissolved solids and corrosive cleaners from your waste water, reducing your waste water process costs.

**EVOLUTION STARCH OFF is optimised, unique, simple, safe and effective**

**Other CleanPrint Solutions products for the corrugated box industry include:**

EVOLUTION BIOCLEAN - Enhanced 5G offering accelerated cleaning times.

**Contact us now for more information and a convincing on-site demonstration**



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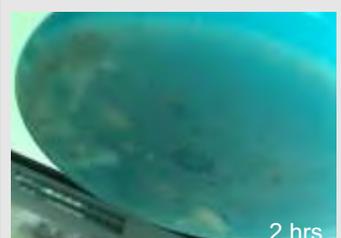
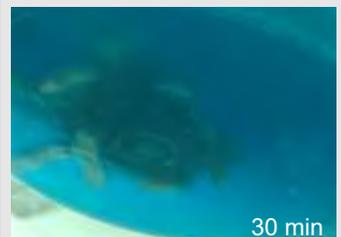
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### DISSOLVE TEST RESULTS

Lab test on ESO starch at 40°C,  
dilution 1:10, with stirring.  
Best temp is 70°C



After 2.5hrs at 40°C with stirring,  
the ESO has become cloudy  
and the test starch is almost  
completely reduced to precipitate