

#001

LAB NOTES



Welcome to the Lab

WE ASKED THE TEST TUBE CREW AT FILL HQ TO MAKE SOME NOTES ON THE THINGS WE MAKE TO HELP YOU CHOOSE WHAT TO USE.

FOR A LONG TIME, LOADS OF FOLKS HAVE WANTED TO KNOW WHY YOU'D GO WITH A BIO VS A NON-BIO LAUNDRY PRODUCT.

BIO

OR

NON-BIO



WHAT IS THE DIFFERENCE?

IN THE WONDERFUL WORLD OF WASHING, 'BIO' IS SHORT FOR BIOLOGICAL. WHEN A PRODUCT GETS CALLED 'BIO' OR BIOLOGICAL IT MEANS ENZYMES ARE ON THE SCENE.

WHAT ARE ENZYMES?

ENZYMES ARE A COOL TOOL THAT HELP BOOST PERFORMANCE. BIOLOGICAL CATALYSTS THAT HELP SPEED UP REACTIONS IN CHEMISTRY. YOU'LL FIND THEM ALL THROUGH ANY LIVING ORGANISM, MOSTLY HELPING WITH METABOLISM. ENZYMES IN LAUNDRY LIQUIDS ARE USUALLY PRODUCED BY MICROORGANISMS VIA FERMENTATION.

WHAT DO THEY DO?

ENZYMES COMMONLY ADDED TO LAUNDRY PRODUCTS INCLUDE PROTEASE, LIPASE AND CELLULASE. EACH OF THESE GUYS PERFORM A SLIGHTLY DIFFERENT FUNCTION TO BOOST PERFORMANCE.

- PROTEASE BREAKS DOWN PROTEINS AND PEPTIDES FOR IMPROVED STAIN BUSTING.
- LIPASE GETS TO WORK ON FATS, OILS AND GREASE FOR IMPROVED STAIN REMOVAL.
- CELLULASE TAKES ON CELLULOSE, LEAVING FABRICS SOFT 'N SMOOTH AND LIMITING PILLING THAT CAN MAKE BRIGHT COLOURS GO DRAB.

WHY USE THEM?

THE BIG BOAST OF A BIOLOGICAL PRODUCT IS BOOSTED PERFORMANCE WHEN WASHING COOLER. ENZYMES DENATURE AT HIGHER TEMPS AND STOP DOING THE BUSINESS WHEN IT GETS TOO HOT. A BIOLOGICAL PRODUCT WORKS BEST AT AROUND OR JUST BELOW BODY TEMPERATURE ($\leq 40^{\circ}\text{C}$). IT'S TOUGHER TAKING DOWN OIL AND GREASE AT LOW TEMPS BUT THOSE ENZYMES CAN HELP CATALYSE BREAKING DOWN GREASE AND OIL FOR ALL ROUND BETTER STAIN REMOVAL.

ANY REASON WE SHOULDN'T CHOOSE THEM?

ENZYMES ARE NO GOOD AT HIGH TEMPERATURES. IF WASHING AT 60 °C OR HIGHER WE'D EXPECT A NON-BIO TO GIVE BETTER OVERALL PERFORMANCE.

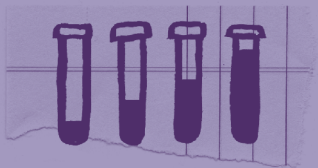
HISTORICALLY, SOME FOLKS HAVE HAD CONCERNS ABOUT POSSIBLE SKIN IRRITATION FROM BIOLOGICAL PRODUCTS. AT REAL HIGH CONCENTRATIONS, IT'S TRUE TO SAY THAT ENZYMES HAVE THE POTENTIAL TO CAUSE SKIN AND RESPIRATORY IRRITATION. HOWEVER, WE'RE ONLY INCLUDING THEM IN LAUNDRY LIQUID BIO AT A VERY LOW CONCENTRATION (<1%) TO MAKE SURE THEY POSE A MUCH MUCH LOWER RISK TO ANYONE WITH SPECIFIC SENSITIVITIES. ALSO, IF WASHING CORRECTLY, ANY MAIN WASH LAUNDRY PRODUCT SHOULD BE RINSED OUT DURING THE MACHINE CYCLE, MEANING THAT ANY POTENTIAL SKIN CONTACT WITH THE LIQUID SHOULD ALWAYS BE LIMITED. DESPITE THIS, ANY FOLKS WITH SKIN SENSITIVITIES MAY STILL PREFER NON-BIOLOGICAL PRODUCTS. WE'RE PLEASED TO OFFER THE CHOICE, INCLUDING AN ALLERGY UK APPROVED NON-BIO LAUNDRY LIQUID (UNSCENTED).

WHY ARE YOU MAKING A BIO NOW?



GOOD QUESTION. WELL, FOR A LONG TIME WE'VE WANTED TO MAKE A LAUNDRY LIQUID THAT COULD BE ECOCERT APPROVED. FOR THE LAST FEW YEARS, WE MADE IT A GOAL TO ACHIEVE ECOCERT NATURAL ACCREDITATION FOR ALL FILL PRODUCTS. AN IMPORTANT PART OF THE RECOGNISED ECO-DETERGENT CERTIFICATION IS THE AVOIDANCE OF MOST PETROCHEMICALLY-DERIVED INGREDIENTS ANYWHERE IN THE FORMULA. THIS PRESENTS A REAL CHALLENGE FOR THE LAB TEAM WHEN IT COMES TO PICKING AN APPROPRIATE PRESERVATIVE FOR A LAUNDRY PRODUCT.

NOW FOR THE SCIENCE.



YOU SEE, MOST COMMON PRESERVATIVES ARE PETROCHEMICALLY DERIVED AND HIGHLY pH DEPENDENT! TWO PRESERVATIVE OPTIONS PERMITTED BY THE ECOCERT DETERGENT GUIDELINES ARE SODIUM BENZOATE AND POTASSIUM SORBATE. BOTH OPTIONS REQUIRE MILDLY ACIDIC pH TO BE EFFECTIVE IN ANY WAY! ALSO, WE KNOW THAT LAUNDRY LIQUIDS SHOULD BE FORMULATED TO BE MODERATELY ALKALINE, TO IMPROVE GREASE AND OIL REMOVAL AND THE PERFORMANCE OF THE SURFACTANTS! TO ACHIEVE AN ECOCERT COMPLIANT PRODUCT, WE THEREFORE NEEDED TO DROP THE pH OF THE LAUNDRY PRODUCT AND MAKE UP FOR THE LACK OF PERFORMANCE THIS WOULD CAUSE. NOT EASY. OUR SOLUTION WAS TO BRING OUT A BIOLOGICAL PRODUCT, WHERE THE PERFORMANCE OF ENZYMES WOULD MAKE UP FOR THE LOWER pH OF THE PRODUCT. WHILE WE WERE CHANGING THINGS UP, WE ALSO TOOK THE CHANCE TO BRING OUT A NEW OLD FRAGRANCE.

LAVENDER



THE ORIGINAL CLASSIC LAUNDRY SCENT STRAIGHT OUT OF ANTIQUITY. FROM THE LATIN "LAVARE," MEANING "TO WASH." CHOSEN BY GREEKS & ROMANS FOR BATHING, PERFUMES, SLEEPING, DRESSING WOUNDS, DETERRING INSECTS, FRESHENING UP & SCENTING CLOTHES. WE WENT WITH A 100% NATURAL ENGLISH LAVENDER ESSENTIAL OIL.

DON'T WORRY THOUGH, WE'VE GOT NO PLANS TO DISCONTINUE THE ORIGINAL, NON-BIOLOGICAL NEROLI LAUNDRY LIQUID! LAUNDRY LIQUID BIO WILL STAND PROUDLY BESIDE IT AS AN OPTION FOR THOSE LOOKING FOR ECOCERT, A BIOLOGICAL OPTION OR ANYONE WHO'S LOVIN' THE LAVENDER.



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