

Antimicrobial additive in DISPOSAFlatPAK liner bag

The picture (right) shows an agar plate after incubation. The blue disc is a sample of polyethylene film containing the antimicrobial additive. The test organism, seen as the yellow growth, is E.coli. The clear zone can be seen around the sample indicating that the film was effective against E.coli.



CONTROL SAMPLE WITHOUT ADDITIVE

These pictures show sample films with/without the 1% addition of the antimicrobial additive in comparison with control film samples without the additive. The test bacteria used were Staphylococcus aureus (S. aureus), Escherichia coli (E. coli) and Salmonella typhimurium (S.typhimurium).



AGAINST: S.AUREUS

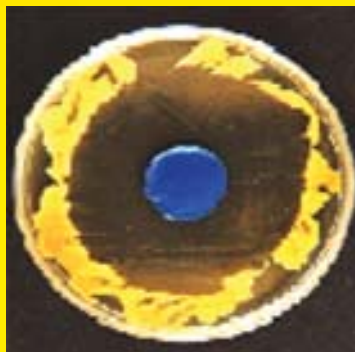


AGAINST: E.COLI



AGAINST: S.TYPHIMURIUM

CONTROL SAMPLE WITH ADDITIVE



AGAINST: S.AUREUS



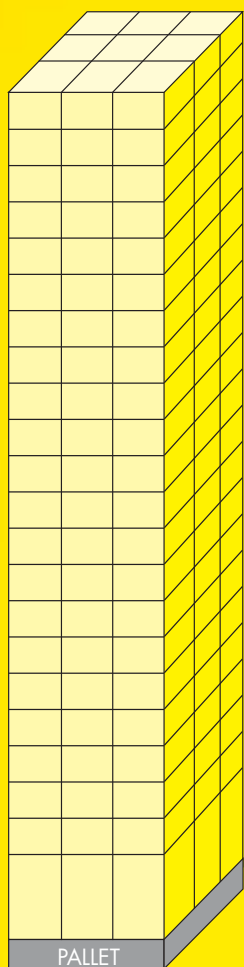
AGAINST: E.COLI



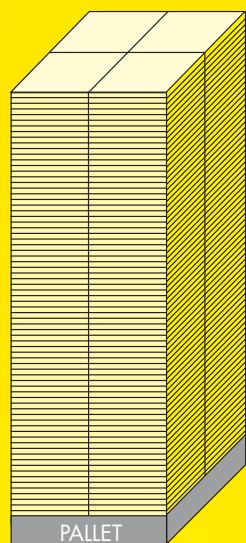
AGAINST: S.TYPHIMURIUM



Comparison data of plastic clinical waste containers against the DISPOSAflatPAK unit



Plastic Injection Moulded Clinical Waste Containers



Rexam DISPOSAflatPAK Clinical Waste Containers

Information relating to the Antimicrobial/Fragrance additive which is incorporated into the DISPOSAflatPAK® Clinical Waste Container Liner bags.

When we began the development of the DISPOSAflatPAK clinical waste containers it was decided that the addition of an antimicrobial and fragrance additive would be beneficial to the liner bags properties and enhance the overall features and performance of the products.

Studies have shown that everyday objects can support and spread bacteria. Research carried out by the University of Arizona found potentially pathogenic bacteria on swabs taken from telephones, pens, counters and chair armrests, to name but a few. This research also showed that hand contact with contaminated objects transferred bacteria quickly to a range of other objects as well as to an individuals face and lips, which could potentially lead to infection.

If microbe populations are kept low the risk of cross contamination and the possibility of transmitting infection is reduced, thus antimicrobial products can offer hospitals, food manufactures and consumers extra peace of mind. Reducing odours is an attractive benefit for many applications such as clothing and waste containers. The use of an antimicrobial system in a product provides additional protection against micro-organisms, however they do not replace the need for cleaning and must always be used together with good hygiene practice.

Sharpak Healthcare established that it was possible to obtain a suitable antimicrobial and fragrance additive which could be incorporated into the polyethylene liner bag material during the extrusion part of the bag production process. A number of different fragrances were tested including pine and lemon. However the one selected as the most suitable for this application was the fragrance of baby talc.

The DISPOSAflatPAK clinical container waste bags contain an antimicrobial/fragrance masterbatch containing 2,4,4'-trichloro-2' hydroxy diphenyl ether, also called triclosan, as the antimicrobial component. Triclosan is a small, flat, organic molecule, which is effective against most common bacteria and is rapidly available at the product surface. This low toxicity additive has approval for use in cosmetics and oral products; consequently it has been used for many years in toothpaste, mouthwash and cosmetics.

Once compounded into a product being small and mobile the triclosan diffuses through the polymer matrix to the surface where it interacts with microorganisms present. Equilibrium is reached between the additive present at the surface and that in the body of the polymer. Further additive only diffuses to the surface when it is whipped or washed. The additive in the polymer acts as a reservoir, providing extended antimicrobial performance.

Triclosan's mode of action against bacteria is not fully understood but it is thought that the molecule disrupts the cell wall and interferes with enzyme activity. Research into the mode of action has raised concerns about the possibly specific nature of triclosan's activity and that this, together with its excessive use, could lead to the evolution of resistant bacteria strains. There are reports of triclosan resistant bacteria being produced. However it is worth noting that although the development of resistance has been shown in the laboratory during this product's 30 years of use there has been no evidence of resistant strains occurring naturally.

Triclosan is a very effective antibacterial agent and an excellent choice for many polyolefin applications, especially film and mouldings.

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INFORMATION

CONTAINER SIZE	30 LITRE	60 LITRE	30 LITRE	50 LITRE
Height	220 mm	220 mm	120 mm	120 mm
Width	120 mm	120 mm	120 mm	120 mm
Depth	100 mm	100 mm	100 mm	100 mm
Units/pallet	243	198	300	300
Weight/unit (grms)	1,234	1,798	620	793
Weight/pallet (kg)*	300	356	186	238
Total capacity (litres)*	7,290	11,880	9,000	15,000
Load Volume M3	2.64	1.73		

*Total capacity - maximum fill volume of all the containers on a pallet.

*Weight/pallet - Total weight of a loaded pallet, the weight of the pallet is NOT included.