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## MASTDISCS™



Since the introduction of paper discs as antibiotic reservoirs in the 1940's, disc diffusion susceptibility tests, of one form or another have been the methods of choice in most routine microbiology laboratories<sup>1</sup>. MAST® manufactures the widest range of antibiotic susceptibility test discs in the world. Presented in two formats – dispensing cartridges and glass vials – the discs are manufactured to the highest quality.

- |                              |  |
|------------------------------|--|
| Extensive stock range        | ▪ Discs available for all popular antibiotics  |
| Discs made to order          | ▪ Printed with individual customer specification, subject to low minimum order levels. |
| Convenient                   | ▪ Available in dispensing cartridges or glass vials                                    |
| Recognised acceptance limits | ▪ Complies with limits required by all national control authorities                    |
| Strict QC control            | ▪ Strict quality control of antibiotic, potency and uniformity of impregnation         |



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## Description

- Absorbent paper discs impregnated to conform to antibiotic contents defined in standardised susceptibility test methodology.
- Each disc is printed on both sides with the appropriate antibiotic identification code and content, and manufactured on a standard 300 gsm paper which conforms to international recommendations.
- Each batch of discs is stringently quality controlled to ensure uniformity of impregnation. A batch of discs is only issued if the variability of zone size is less than  $\pm 1.5$ mm from the mean figure for 95% of the discs tested and antibiotic identity has been confirmed by susceptibility profiling.

## In use

- All discs should be stored at 2-8 °C within sealed vials or in their cartridges inside the sealed container when not in use.
- **They should be allowed to equilibrate to room temperature before opening.**
- Discs from vials can be applied to agar plates by the use of a needle.
- Discs in cartridges can be applied by use of the MAST<sup>®</sup> DiscMaster dispenser or MAST<sup>®</sup> hand dispensers (SHD1 & SHD5).
- Quality control of the antibiotic susceptibility test should be routinely performed with the reference cultures specified in the methodology adopted.
- Details of acceptable zone diameter limits can be obtained by reference to the relevant standard.

## Interpretation

It is important that interpretation of zone sizes is appropriate to the methodology used. Various reference methods have been adopted in different parts of the world e.g. BSAC (UK), CA-SFM (France) CLSI (USA/world-wide) and most recently EUCAST (Europe). Despite these regional differences the most popular technique worldwide is still the CLSI one and provided the standardised method is followed the following classifications can be used:-

**Susceptible (S)** - Infection due to the strain under test may be appropriately treated with the dosage of antimicrobial agent recommended for that type of infection and infecting species unless otherwise contraindicated.

**Intermediate (I)** - Clinical applicability of the antimicrobial may be implied in body sites where the agents are physiologically concentrated (e.g. quinolones and  $\beta$ -lactams in urine) or when high dosages of the drug can be used. The intermediate category also includes a "buffer zone" that prevents small uncontrolled technical factors causing major discrepancies in interpretation.

**Resistant (R)** - Strains are not inhibited by the systemic concentrations of the agent usually achievable with normal dosage schedules, or are likely to possess specific resistance mechanisms.

## References

1. Brown DFJ, Blowers R. *Laboratory Methods in Antimicrobial Chemotherapy* p. 8-30 Ed. 1978; Reeves DS, Phillips I, Williams JD, Wise R
2. Andrews JM. Development of BSAC standardized method of disc diffusion testing. *Journal of Antimicrobial Chemotherapy* (2001) **48**, Suppl. S1 29-42