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British Standard Specification for Orthodontic resins

Résines orthodontiques. Spécifications

Kieferplastische Harze

Foreword

This British Standard was prepared under the direction of the Health Care Standards Committee.

Resins based on polymethyl methacrylate (PMMA) have been used in the construction of both active and passive removable orthodontic appliances for many years. Initially, denture base resins were used for orthodontic appliances, although modified resins, more suited to orthodontic applications, have become available as a result of the continuing development of denture base resins. In addition, techniques of processing have been adopted that are better suited to the orthodontic technician, one of the most important of which is a method of polymerizing the monomer directly on a cast, frequently described as the pepper and salt technique. This involves wetting the cast and spraying on polymer powder, wetting with monomer and then adding more polymer. An incremental system of polymer build-up has therefore evolved which, with technical skill, may be accomplished rapidly and satisfactorily. This method of preparing the resin part of the removable orthodontic appliance has several potential problems. The resin may be weaker than if conventional flasking and heat systems of polymerization were used, and there may be a greater risk that an appliance will have more residual than for denture base resin monomer. In addition, the high monomer content of the polymer/monomer mix causes increased contraction of the resin on polymerization.

This standard is more comprehensive with regard to performance requirements than BS 2487. In particular, this standard includes requirements and test methods for impact strength and residual monomer which are not included in BS 2487 and it is intended that these additional requirements will be included in the next revision of BS 2487.

This British Standard has been prepared primarily on the basis of data produced by a research programme undertaken under the direction of Dr G D Stafford at Cardiff Dental School. This research took into account replies to a questionnaire sent to the members of the Orthodontic Technicians Association and to Dental Schools, whose assistance in furnishing information on materials and techniques has been invaluable.

Requirements for freedom from biological hazards are not included in this British Standard but it is recommended that in assessing possible biological or toxicological hazards, reference be made to BS 5828.

Attention is also drawn to HSE Guidance Note EH 40 and to the Health and Safety at Work etc. Act, 1974.

Compliance with a British Standard does not of itself confer immunity from legal obligations.