

Author: [ADVANCED](#)

Volume Page

Keyword: [TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1881-1361

PRINT ISSN : 0287-4547

Dental Materials Journal

Vol. 28 (2009) , No. 2 p.227-233

[\[PDF \(1084K\)\]](#) [\[References\]](#)**Fluoride release and recharge characteristics of denture base resins containing surface pre-reacted glass-ionomer filler**[Kazuko KAMIJO](#)¹⁾, [Yoshiharu MUKAI](#)²⁾, [Takatoshi TOMINAGA](#)²⁾, [Izumi IWAYA](#)²⁾, [Fukue FUJINO](#)³⁾, [Yukio HIRATA](#)¹⁾ and [Toshio TERANAKA](#)²⁾

1) Department of Dental Sociology, Division of Sociological Approach in Dentistry, Kanagawa Dental College

2) Department of Oral medicine, Division of Restorative Dentistry, Kanagawa Dental College

3) Department of Dental Hygiene, Shonan Junior College

(Received March 9, 2008)

(Accepted November 1, 2008)

Abstract:

The flexural strength, flexural modulus, and the amount of fluoride released from four experimental denture base resins containing 5, 10, 20 and 30 wt% surface pre-reacted glass-ionomer (S-PRG) filler added to the powder were evaluated.

The mean flexural strength of the experimental resins, except the 30 wt%, and the flexural modulus of all the resins, complied with ISO 1567 requirements.

In the 20 wt% resin, the amount of fluoride released in the initial phase was 1.88 $\mu\text{g}/\text{cm}^2/\text{day}$, after which the level decreased. After recharging in a 9,000 ppm fluoride solution for eight hours, the level of released fluoride increased markedly to 40.21 $\mu\text{g}/\text{cm}^2/16\text{hrs}$. Our results show that fluoride levels increased as a function of the S-PRG filler content. After the almost completely discharged resins were recharged, similar fluoride release occurred again.

These results suggest that denture base resins containing S-PRG filler have great recharge and release capabilities which may assist in preventing root caries of abutment teeth.

Key words:[Fluoride releasing and recharging](#), [Denture base resin](#), [Surface pre-reacted glass-ionomer](#)

To cite this article:

Kazuko KAMIJO, Yoshiharu MUKAI, Takatoshi TOMINAGA, Izumi IWAYA, Fukue FUJINO, Yukio HIRATA and Toshio TERANAKA. Fluoride release and recharge characteristics of denture base resins containing surface pre-reacted glass-ionomer filler . Dent. Mater. J. 2009; 28: 227-233 .

doi:10.4012/dmj.28.227

JOI JST.JSTAGE/dmj/28.227

Copyright (c) 2009 The Japanese Society for Dental Materials and Devices

