



39th IACDE National Conference



SOLUBILITY BATTLE: *How Three Root Canal Sealers Stand Up to Xylene and Endosolv*

AIM - To comparatively evaluate the solubility of three commonly used root canal sealers: Mineral Trioxide Aggregate (Angelus MTA Fillapex), Calcium Silicate Based (Cerafill RCS), and an Epoxy Resin-based Sealer (AH Plus), when exposed to two different solvents, Xylene and Endosolv (Septodont).

INTRODUCTION

- During retreatment, controlled solubility of the sealer is beneficial as solvents like Xylene or Endosolv can dissolve the material, facilitating its removal.
- Sealers with extremely low solubility may be harder to remove, complicating retreatment.

MATERIALS AND METHODOLOGY



10min

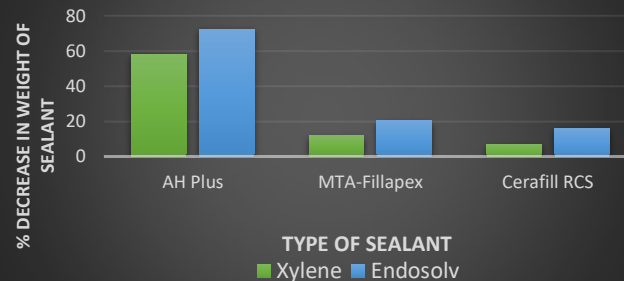
2mm X
8mm

RESULTS (% Decrease in wt.)

Solvent Type	AH Plus	MTA Fillapex	Cerafill RCS	p value (using One-Way ANOVA)
Xylene	58.2643	11.7871	6.9887	< .00001
Endosolv	72.6286	20.2951*	16.0677*	< .00001

*no significant difference in solubility ($p > 0.05$)
AH Plus showed the highest solubility

Solubility Distribution



DISCUSSION

- Xylene – effective on resin-based sealers as it dissolves their epoxy resin components by disrupting the intermolecular force.
- Endosolv – chemically interacts with the matrix of the sealer, weakening its structural integrity.
- Bioceramic sealers show least solubility making it difficult to manage a retreatment case

CONCLUSION

- Endosolv showed the best solubility property for all sealer types.
- Least solubility was shown by Cerafill RCS in Xylene.