

CHAPTER V

CONCLUSION

The mechanical properties such as tensile strength, tear strength and hardness of vulcanized NRL films are greater than vulcanized DPNR films. This is due to the reducing of vulcanization efficiency by surfactant treatment and the lower mechanical stability time of DPNR than NRL. CaCO_3 was expected to reduce surface friction and it did. The result of contact angle measurement is related to the friction test in the CaCO_3 compounded latex. The relationship is that a higher contact angle gives lower surface friction when increasing the amount of CaCO_3 . The precipitated silica did not help to reduce the amount of water-extractable protein. The appropriate amount of CaCO_3 used for optimum mechanical strength and low friction was 25-35 phr. The optimum amount of silanized precipitated silica and admicelled silica for reinforcement effect were 3 phr.

Finally, the mechanical properties of finished film were lower than that of the commercial dental rubber dam specification. Further efficient chemicals and techniques should be used to achieve the commercial dental rubber dam specification.

RECOMMENDATION

1. Determine curing time for certain curing temperature (100 C)
2. Determine reaction of SI-69 and curing at 100 C by DSC
3. Washing off protein in warm water.