CHAPTER VI

CONCLUSIONS

1. The suitable conditions for CV-DPNR preparation from fresh latex are:

Latex : fresh latex 25 % DRC

Chemical : sodium metabisulfite 0.05 p.h.r.

hydroxylamine hydrochloride 0.15 p.h.r.

Triton X-100 1.1 p.h.r.

papain 0.3 p.h.r.

operating conditions : pH 7.6, 50 ^{o}C, agitation speed 60 rpm and reaction time 50 min.

Steam coagulation : 10 min under 15 lb/in^2 at 121 ^{o}C

2. Advantages of CV-DPNR production using agitated tank are :

(i) Less reaction time

(ii) Higher nitrogen reduction

(iii) No affect on MW and MWD

At optimum turbulence intensity factor of 50-55, the reduction of nitrogen content is maximum (about 82-90 %). The CV-DPNR produced from fresh latex is acceptable regarding its raw rubber properties except the ash content.

3. Papain treatment increases scorch time and decreases cure time resulting in lower cure rate. Torque rise of CV-DPNR is decreased.

4. The low nitrogen rubber shows improvement in dynamic properties. The reduction of proteins increases tensile strength, tear strength and elongation at break whereas hardness and 300 % modulus are lower.