

8 MIXED PULPING

DKS 22/1/08 – 1-2.40 p.m.

8.1 General

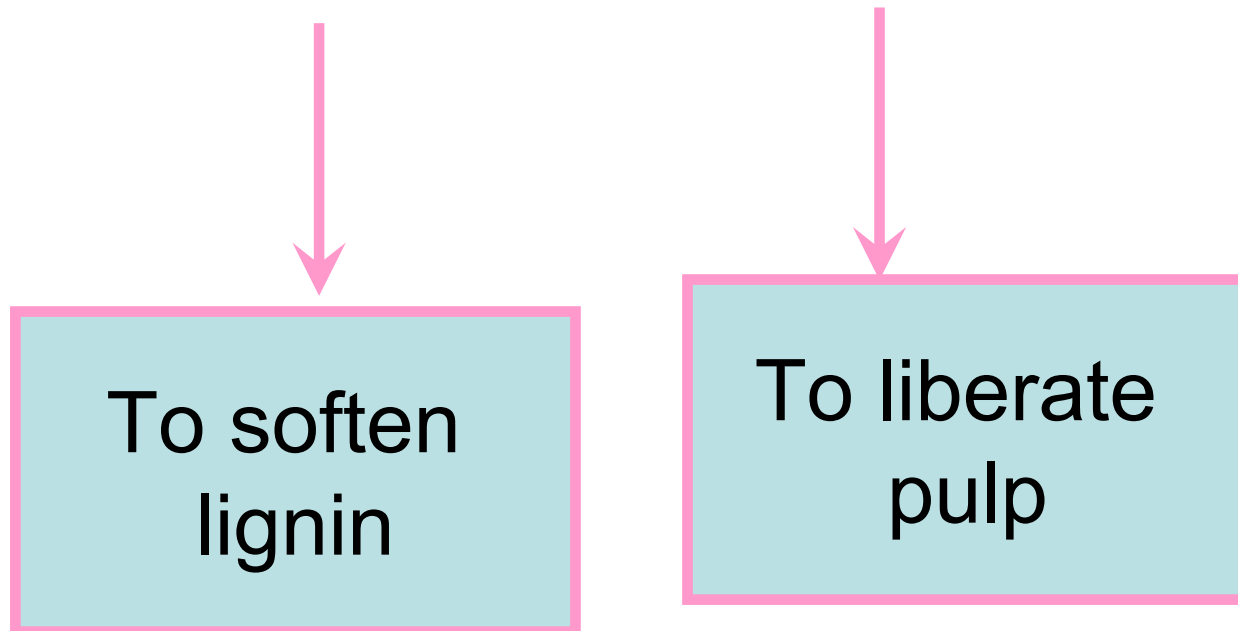
**8.2 Neutral Sulfit Semi-Chemical
(NSSC) Pulping**

8.3 Chemi-Mechanical Pulping (CMP)

**8.4 Chemi-Thermo-Mechanical Pulping
(CTMP)**

8.1 General

- **Basic: combined chemical and mechanical effects**
- **A little chemical action + mechanical action**



8.2 Neutral Sulfit Semi-Chemical (NSSC) Pulping

- Popular for mixed softwood
- Utilizes Na_2SO_3 and Na_2CO_3 at ratio of
- 6:1 for bleached pulp
- 5:1 for unbleached pulp

NSSC Pulping Condition

Digestion:

- **$T^{\circ}\text{C} = 170-185^{\circ}\text{C}$**
- **$t = 20-40 + \textit{refiner action}$**
- **$\textit{Yield} = 60-80\%$.**

8.3 Chemi-Mechanical Pulping (CMP)

- ***Only requires light chemical action followed by refining:***
 - **Chip is soaked in 6-11% soda at $T^{\circ}\text{C}=30-50^{\circ}\text{C}$, $t=40$ minutes**
 - **To soften lignin**
 - **Yield: 85-95%.**

8.4 Chemi-Thermo-Mechanical Pulping (CTMP)

- **= CMP but with stim applied**
- **Chemical impregnation**
- **Refining**
- **Yield:> 90%.**

Breed of CMP/CTMP

- APMP – alkaline peroxide mechanical pulping
- Pulping and bleaching in 1 process
- High pulp yield ($\approx 90\%$)
- Design announced in 1989 in USA
- Maximisation of alkali and hydrogen peroxide

Breed of APMP

- PRC-APMP

- APMP with Pre-conditioning in Refiner Chemical

- AP-TMP

- ▶ Area well researched today