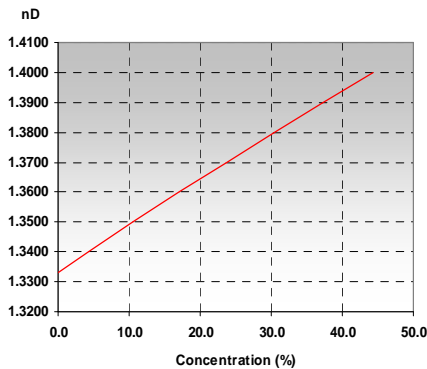


SIZING LIQUID, PVA, CMC, STARCH

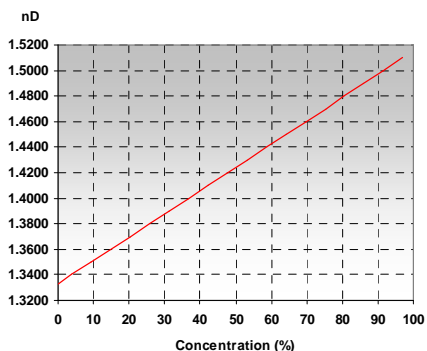
Typical end products

Bond, ledger, writing and other types of paper

Chemical curve: PVA R.I. per Conc% b.w. at Ref. Temp. of 20°C



CMC R.I. per Conc% by weight at Ref. Temp. of 20°C



Introduction

Sizing is used in papermaking to reduce the paper's tendency to absorb liquids when dry, so that inks and

paints remain and dry on the surface of the paper, rather than absorbing into the paper. The various treatments can be divided into internal sizing, surface sizing and coating. Refractometer applications are designed for the use and preparation of these sizing liquids.

The most common material used in sizing solutions is starch. Other additives such as PVA and CMC can be used to provide specific strength and optical improvements to the paper. Normally, a relatively low-viscosity concentrated starch solution (6-14%) is used at the size press in order to achieve a starch pickup of about 45 kg (99 lbs) per 1000 kg (2200 lbs) of product.

Application

Sizing Liquid Cooking

The liquid is usually cooked in continuous cookers. The cooked starch is diluted with water to the desired concentration before storage. The temperature in the storage tanks is regulated with a steam heating system and a mixer.

Size Press

The size liquid is commonly added to the paper with a size press or blade coater. This liquid is re-circulated at the size press. As the paper runs through the size press, it absorbs a portion of the solution, while any surplus is collected for re-circulation to the press.


PULP AND PAPER	
APPLICATION NOTE	3.03.00
PAPER SIZING PROCESS	

Installation

The K-Patents Process Refractometer PR-23-GP measures dissolved components such as starch, latex, CMC and PVA.

Kaolin and pigments cannot be measured as they have no effect on the Refractive Index.

Typical measurement range of starch is 0-20%. High pressure water prism cleaning is recommended.

Instrumentation	Description
	<p>K-Patents Process Refractometer PR-23-GP is an industrial refractometer for large pipe sizes and tanks, cookers, crystallizers and kettles. Installation through a flange or clamp connection.</p>
<p>Automatic prism wash:</p>	<p>Prism wash with high pressure water.</p>
<p>Measurement range:</p>	<p>Refractive Index (nD) 1.3200 – 1.5300, corresponding to 0-100 % by weight.</p>