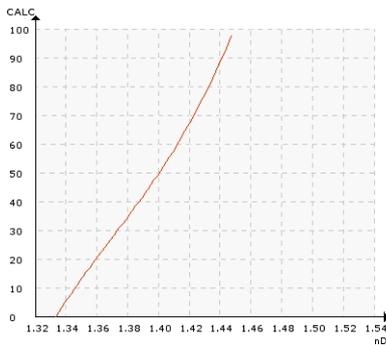


## POLYURETHANE ELASTIC FIBRES, ELASTANE, SPANDEX

### Typical end products

Polyurethane elastic fibers, elastane, spandex

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



### Introduction

Spandex is the generic name for synthetic fiber, whose fiber-forming substance is a long chain synthetic polymer. It comprises of at least 85% of segmented polyurethane. Trade names for these fibers are LYCRA (DuPont), DORLOSTAN (Bayer), SPANZELLE (Acordis), VYRENE (US Rubber), etc.

### Application

Typically, the spandex fiber structure is achieved by reacting di-isocyanates with long chain glycols, which are usually polyesters or polyethers. Next, polymer is dissolved into dimethyl acetamide (DMAC) and then chain-extended or coupled through the use of glycol, diamine or water. There are also many other common solvents in use (dimethylformamide DMF, nitric acid HNO<sub>3</sub>). The final polymer is converted into fibers by spinning.

DMAC is an excellent solvent for a large variety of organics and is widely used as such for fibers, adhesives, dyes etc.

### Installation

The Process Refractometer PR-23-AC or PR-23-GP is perfectly suited to control spinning bath concentration. When multiple measurements are required, operating two sensors through a single transmitter reduces investment costs.

Typical measurement range is 40-60%.

<b>Instrumentation</b>	<b>Description</b>
	<p>K-Patents Sanitary Compact Refractometer PR-23-AC for small pipe line sizes of 2.5 inch and smaller.</p> <p>The PR-23-AC sensor is installed in the pipe bend. It is angle mounted on the outer corner of the pipe bend directly, or by a flow cell using a 3A Sanitary clamp or Varivent® connection.</p>
	<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>Measurement range:</p>	<p>Refractive Index (nD) 1.3200 – 1.5300, corresponding to 0-100 % by weight.</p>