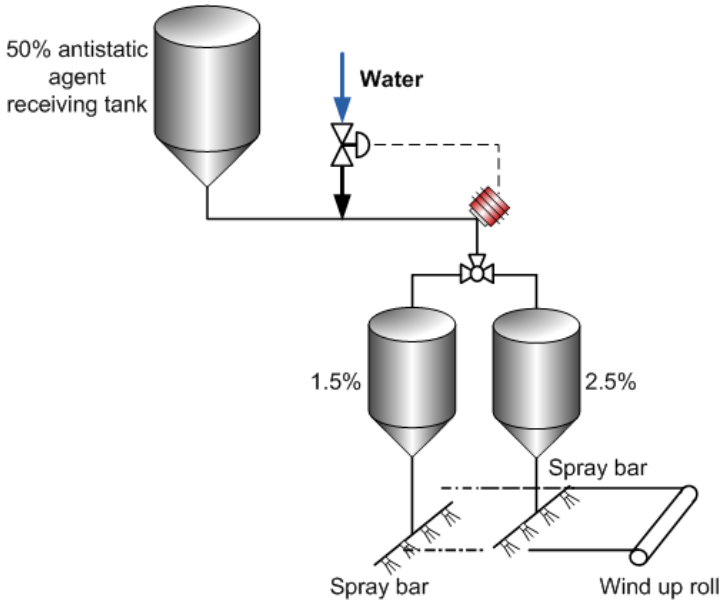
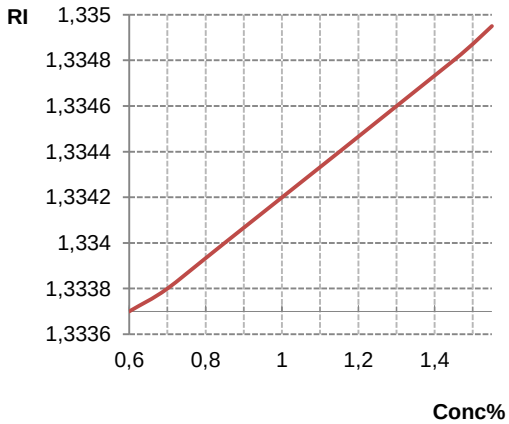


ISOPROPYL ALCOHOL BASED SOLUTION

Typical end products

Housewrap, vehicle covers, envelopes, medical and industrial packaging, protective apparel

Chemical curve: Isopropyl alcohol based solution R.I. per Conc% b.w. at Ref. Temp. of 25˚C



Introduction

Polyethylene fiber is known for its high strength and durability features. The material is used in a variety of applications, e.g., Tyvek® HouseWrap, vehicle covers, envelopes, medical and industrial packaging, and as protective apparel.

Application

The polyethylene sheet is breathable and water repellent, prevents infiltration of air and water and allows vapour to pass through. The material is also strong, durable and puncture resistant. The sheet is made by spinning extremely fine high-density polyethylene fibers fused together to produce a strong uniform web. Inside the sheet antistatic agent is applied as a thin microporous film on a coarse fabric consisting of millions of small pores. As antistatic agent, isopropyl alcohol based solution (Zelec®) is used.

Before the antistatic agent is applied, it must be diluted to 1.5 or 2.5 solution. The measurement using ultrasonic flow meter has proved to be inaccurate and unreliable. Moreover, it is highly maintenance intensive. Hand held and lab sample refractometry have proved to be too time consuming and disruptive. The solution concentration measurement using K-Patents Process Refractometer provides an accurate and reliable continuous measurement of the agent solution in-line.

Installation

The K-Patents Sanitary Compact Refractometer PR-23-AC is used to measure the diluted solution of the antistatic agent before it is applied to the polyethylene sheet.

The refractometer is installed in the pipe bend to control the concentration of the diluted agent before it is forwarded into 1.5% or 2.5% solution tanks. The antistatic solution is then applied to the polyethylene sheet to form a thin film.

Instrumentation	Description
	K-Patents Sanitary Compact Refractometer PR-23-AC for small pipe line sizes of 2.5 inch and smaller. 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. A high pressure steam wash system might be required.
Measurement range:	Refractive Index (nD) 1.3200 – 1.5300, corresponding to 0-100 % by weight.