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**Verification Regulation of V-prism Refractometer
(English Translation)**

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V prism refractometer verification procedure

1 Scope

This procedure applies to the first verification, subsequent verification and in-use inspection of the V-prism refractometer. V prism refractometer the requirements for the relevant metrological performance in the type identification and prototype test can be carried out with reference to this regulation.

2 Overview

The V prism refractometer (hereinafter referred to as the refractometer) uses a vertical precision goniometer to measure the refractive index by the V prism method.

An instrument.

The measurement principle of the refractive index measured by the V prism method is shown in Fig. 1.

Figure 1 V prism method to measure the refractive index

1-V prism; 2-sample to be tested the V prism is a rectangular prism with a "V" shaped notch. The two materials are identical and have a refractive index.

The right angle prism of n_0 is glued together, the opening angle of the V-shaped notch is

angleAED=90°, and the angle of the two sharp edges is angleBAE= angleCDE=45°. The measured sample is ground out to form two planes of 90° in the V-shaped notch, due to sample angle processing the error, there will be a gap between the two faces of the sample to be tested and the two faces of the V-shaped notch, and some need to be filled in the middle A liquid having a refractive index close to that of the sample to be measured becomes a refractive liquid. The effect of the refraction fluid is even if the sample is processed at a 90° angle Inaccurate, plus the refractive fluid, approximates an accurate 90° angle, and prevents the light from being completely reversed at the interface.

Shoot.

Vertically entering the AB plane of the V prism with a monochromatic parallel light, if the refractive index n of the sample to be measured and the known V prism the refractive index n_0 is the same, then the entire V prism plus the sample to be tested is like a parallel flat glass, the light is in two There is no deflection on the contact surface, and the final outgoing light will not be deflected. If the refractive indices of the two are not equal, then the light is deflected on the contact surface, and the final outgoing light has a deflection angle θ with respect to the incident light.

The magnitude of the angle θ is related to the refractive index n of the sample to be tested. The V prism method is to accurately measure the value of the deflection angle θ ,