Analysis of Haze value by Spectrophotometer

INTRODUCTION

Haze value represents the degree of cloudiness and the larger the numerical value, the larger the diffusivity. For example, in solar cells, a texture structure is added in order to increase the electric generation efficiency. The haze value is important in the fields of development and quality control.

This time, the diffuse transmittance (T_d) and total transmittance (T_t) were measured (Figure 1) and the haze value was calculated (Table 1) by using U-4100 Spectrophotometer. As a result, the diffusivity of the sample B was found to be higher than that of the sample A.

SAMPLE

Sample : Texture glass

INSTRUMENT CONDITIONS

Instrument : U-4100 Spectrophotometer (solid sample measurement system)

[UV/VIS]
Measurement wavelength : 300 to 2100 nm
Scan speed : 300 nm/min
Slit : 8 nm
Sampling interval : 1 nm

[NIR]
Scan speed : 750 nm/min
Slit : Automatic control
PbS sensitivity : 2
Detector switching correction : with correction

OTHER NECESSARIES

Transmission holder (tight attachment)
(P/N : 1J0-0202)

Whiteboard holder with a transmission hole
(P/N : 130-2179)

Option package program
(P/N : 2J10-0311)

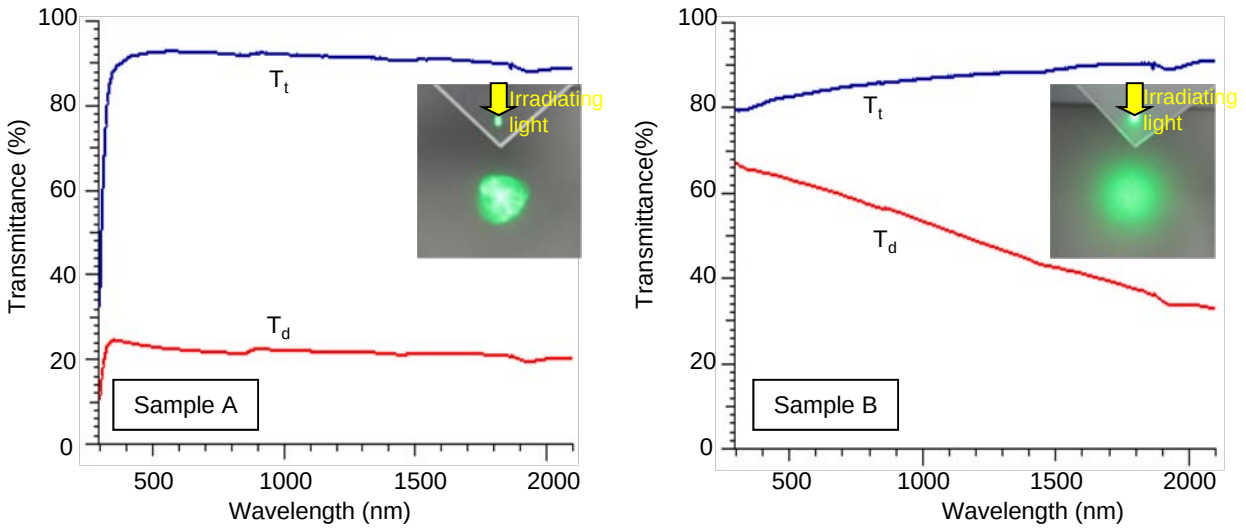

Figure 1. Transmission Spectrum of Each Sample

Table 1. Result of Haze Value Calculation

Sample	T_t (*1)	T_d (*1)	Haze value (%) (*2)
Sample A	91.8	22.0	24.0
Sample B	85.2	56.2	66.0

(*1) Solar transmittance (See JIS R3106), (2) Haze value (%) = $T_d / T_t \times 100$

(Note) This method is a simple method by using a spectrophotometer and not the method conforming to the test method for haze value specified by JIS.

KEY WORDS
Material·Processing Material Related,
Other Material・Processing Material Related, Haze Value,
Transmission Spectrum, Transmittance, Solar Cell, Solar Transmittance,
U-4100

Spectrophotometer (UV)

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