Mitsui Chemicals

DMI Solubility Parameter Chart

A solubility parameter is calculated as follows:

$$\delta = \sqrt{\frac{\Delta H - RT}{(M/d/10^3)}} \quad (J/cm^3)^{1/2} - ①$$

where : ΔH= heat of vaporization (J/mol)

R= gas constant (J/K·mol)

T= absolute temperature (K)

M= molar weight (g/mol)

d= density (kg/m^3)

when the following values are substituted in ①,

ΔH= 51,882 (J/mol)

R= 8.315 (J/K·mol)

T= 298 (K)

M= 114.14 (g/mol)

d= 1,052 (kg/m^3)

The solubility parameter of DMI is obtained as follows:

$$\delta = \sqrt{\frac{51{,}882 - (8.315)\times(298)}{(114.14/1{,}052/10^3)}} = \sqrt{455.3} = 21.3 \quad (J/cm^3)^{1/2}$$