

between the glass and coesite forms of BeF_2 . The Rm for the cristobalite and quartz forms respectively of BPO_4 , BAsO_4 , AlPO_4 , AlAsO_4 also are approximately within 3 per cent of each other. A decrease of the

Table 2. Comparison of molar refractivities

Compound	Form	Density	Average* refractive index	$\frac{Rm^{**}}{(A \cdot B) X_2}$	Per cent*** difference
SiO_2	glass	2.203	1.458	7.45	+ 3.6
SiO_2	<i>l</i> -crist.	2.325	1.486	7.42	
SiO_2	<i>l</i> -trid.	2.262	1.470	7.41	
SiO_2	quartz	2.648	1.548	7.19	
SiO_2	coesite	2.90	1.598	7.06	- 1.8
BeF_2	glass	1.986	1.275	4.07	+ 1.7
BeF_2	quartz	2.38	1.328	4.00	
BeF_2	coesite	2.55	1.345	3.93	- 1.7
BPO_4	crist.	2.80	1.597	6.41	+ 2.6
BPO_4	quartz	3.07	1.642	6.24	
BAsO_4	crist.	3.64	1.682	7.75	+ 3.5
BAsO_4	quartz	4.00	1.738	7.49	
AlPO_4	crist.	2.285	1.465	7.36	+ 3.4
AlPO_4	quartz	2.62	1.526	7.12	
GaPO_4	crist.	3.27	1.560	8.15	+ 2.5
GaPO_4	quartz	3.54	1.603	7.95	
MnPO_4	crist.	2.87	1.482	7.56	+ 4.7
MnPO_4	quartz	3.20	1.528	7.22	
GeO_2	glass	3.628	1.6081	9.90	+ 2.8
GeO_2	quartz	4.228	1.707	9.63	
GeO_2	rutile	6.239	2.015	8.46	-12.2

Abbreviations: crist. = cristobalite, trid. = tridymite.

* Average refractive index calculated as $\sqrt[3]{N_s^2 N_e}$. The comparative values of Rm , in general, are not sensitive to manner of calculating the average refractive index.

** $\frac{Rm}{(A \cdot B) X_2}$ equals the Rm of AX_2 or $1/2$ of ABX_4 compounds. Rm normally reported in cm^3 per mole.

*** Percentage difference relative to the Rm value of the quartz polymorph of each series.

The same order is observed for these compounds. The effect of the anions although they are differently packed in the structural arrangement of the refractive index "of the ions" is clearly in the order of the quartz and the density of the refractive index on the other hand. This value is the same for forms differing in their correlatable way. In addition, the complex compound allows the calculation of the coordination of valence and SILVERMAN Al in 4 and 6 values differ by quartz-rutile polymorph in 4 and 6 coordination differ by 12 per cent that, if the model is by 12 ± 2 per cent be predicted.

The usefulness reached via infrared are tetrahedral

⁹ H. W. SAEY, J. Am. Ceram. Soc.

¹⁰ RUSTUM ROY, Soc. 72 (1950) 31

¹¹ These author communications) also significant changes values differ by c