

observed Se-Cl distance of 6.42 Å, with its standard deviation of 0.04 Å, is probably significantly greater than 6.32 Å and less than 6.48 Å. The conclusion drawn, then, is that the Se-C₁ and C₄-Cl distances in *p*-chlorobenzeneseleninic acid are shorter than normal single covalent bonds, but not as short as the values listed in Table 5.

Comparison of the observed *F* values for the *h*0*l* and *hk*0 reflections with the calculated *F* values based on the atomic parameters in Set *C* of Table 2 is given in Table 6.

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Structure de GeUO₄. Par A. DURIF, *Laboratoire d'Électrostatique et de Physique du Métal, Institut Fourier, Grenoble, France*

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Préparé par chauffage à 1050° C. à l'abri de l'air d'un mélange équimoléculaire de GeO₂ et de UO₂ le germanate d'uranium, GeUO₄, s'apparente à la série des germanates GeMO₄ (*M* = Zr, Ce, Th) précédemment décrite (Bertaut & Durif, 1954).

Le diagramme Debye-Scherrer du produit obtenu correspond à une maille quadratique du type scheelite:

$$a = 5.084, c = 11.226 \text{ \AA}; Z = 4; \\ U = 290 \text{ \AA}^3; D_x = 8.49; I_{41/a-C_{4h}^2}$$

avec:

$$\begin{aligned} &+(0, 0, 0; \frac{1}{2}, \frac{1}{2}, \frac{1}{2}) \\ 4 \text{ Ge en } 4(a): &0, 0, 0; 0, \frac{1}{2}, \frac{1}{4}; \\ 4 \text{ U en } 4(b): &0, 0, \frac{1}{2}; 0, \frac{1}{2}, \frac{3}{4}; \\ 16 \text{ O en } 16(f): &x, y, z; \bar{x}, \bar{y}, z; \\ &\bar{y}, x, \bar{z}; y, \bar{x}, \bar{z}; \\ &x, \frac{1}{2}+y, \frac{1}{4}-z; \bar{x}, \frac{1}{2}-y, \frac{1}{4}-z; \\ &y, \frac{1}{2}-x, \frac{1}{4}+z; y, \frac{1}{2}-x, \frac{1}{4}+z. \end{aligned}$$

Les paramètres de position de l'oxygène sont difficilement accessibles à la mesure à cause de la présence de

l'atome lourd d'uranium. Des considérations stériques permettent de les estimer très voisins des valeurs:

$$x = 0.27, y = 0.11, z = 0.08,$$

qui conduisent aux distances interatomiques suivantes:

$$\begin{aligned} \text{O-O}_I &= 2.97 \text{ \AA}, \text{U-O}_I = 2.31 \text{ \AA}, \text{Ge-O} = 1.74 \text{ \AA}, \\ \text{O-O}_{II} &= 2.76 \text{ \AA}, \text{U-O}_{II} = 2.47 \text{ \AA}; \end{aligned}$$

ajoutons que les distances généralement admises sont:

$$\text{Ge-O} = 1.76 \text{ \AA} \text{ et } \text{U-O} = 2.37 \text{ \AA} \text{ (dans UO}_2\text{)}.$$

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Référence

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