

concentrations of the vitamins present at any stage of the fermentation were low for all media. Also the ability to synthesize lysine, threonine, valine and glutamic acid was poor under the conditions of this experiment.

- Ericson, L.-E. and Kurz, W. G. *Biotechnology and Bioengineering* 4 (1962) 23.
- Kurz, W. G. and Ericson, L.-E. *Biotechnology and Bioengineering* 4 (1962) 37.
- Steele, B. F., Sauberlich, H. E., Reynolds, M. S. and Baumann, C. A. *J. Biol. Chem.* 177 (1949) 533.
- Official methods of analysis of the Association of official agricultural chemists*, Eighth Edition, Washington D. C. 1955.
- Bolinder, A. E. and Larsen, B. *Acta Chem. Scand.* 15 (1961) 823.
- Sjöstedt, M. and Ericson, L.-E. *Acta Chem. Scand.* 16 (1962). *In press.*
- Diding, N. A. *Scand. J. Clin. & Lab Invest.* 3 (1951) 215.
- Haskins, R. H., Lemieux, R. U., Thorn, J. A. and Ledingham, G. A. *Intern. Congr. Microbiol., Abstrs of Papers*, Rio de Janeiro 1950, p. 189.
- Dulaney, E. L. *Can. J. Microbiol.* 3 (1957) 467.

Received August 7, 1962.

Crystal Structure Data for the Compounds $TaCl_5 \cdot POCl_3$ and $TiCl_4 \cdot 2POCl_3$

CARL-IVAR BRÄNDÉN*

University of Uppsala, Institute of Chemistry, Uppsala, Sweden

Preliminary studies of the compounds $TaCl_5 \cdot POCl_3$ and $TiCl_4 \cdot 2POCl_3$ have been made as part of an investigation of the crystal structures of addition compounds formed between metal halides and $POCl_3$ or $PO(CH_3)_3$. Single crystals were prepared in sealed capillary tubes using a zone melt-

with CuK radiation. From the space group and the approximate unit cell dimensions thus obtained and from a comparison of the intensities it was found that the compound $TaCl_5 \cdot POCl_3$ is isostructural with $SbCl_5 \cdot POCl_3$ ¹ and the compound $TiCl_4 \cdot 2POCl_3$ is isostructural with $SnCl_4 \cdot 2POCl_3$.²

No further work on these compounds is intended at present.

I wish to thank Professor G. Hägg for all the facilities placed at my disposal and Professor I. Lindqvist for continued interest and stimulating discussions. This work has been sponsored by a grant from Air Force Office of Scientific Research, OAR, through the European Office, Aerospace Research, United States Air Force under Contract No. AF 61(052)-43. This grant is gratefully acknowledged.

I am indebted to Mr. S. Sandborg for help with the X-ray examination of $TaCl_5 \cdot POCl_3$.

The approximate cell dimensions are:

1. $TaCl_5 \cdot POCl_3$:	Orthorhombic,	Space group,	$P n m a$.
	$a = 16.4 \text{ \AA}$	$b = 8.1 \text{ \AA}$	$c = 9.0 \text{ \AA}$
2. $TiCl_4 \cdot 2POCl_3$:	Orthorhombic,	Space group,	$P n n m$.
	$a = 13.4 \text{ \AA}$	$b = 13.5 \text{ \AA}$	$c = 7.7 \text{ \AA}$

ing technique. Rotation and Weissenberg photographs (layer-lines 0-2) were taken

* Present address: Laboratory of Molecular Biology, University Postgraduate Medical School, Hills Road, Cambridge, England.

- Lindqvist, I. and Brändén, C.-I. *Acta Cryst.* 12 (1959) 642.
- Brändén, C.-I. *Acta Chem. Scand.* 17 (1963). *In press.*

Received August 6, 1962.