

This article was downloaded by:

On: 25 January 2011

Access details: *Access Details: Free Access*

Publisher *Taylor & Francis*

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Journal of Sulfur Chemistry

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713926081>

Interesting Errors in Sulfur Chemistry, 4

Eberhard Fischer^a

^a Sektion Chemie, Wilhelm-Pieck-Universität Rostock, Rostock, GDR

To cite this Article Fischer, Eberhard(1983) 'Interesting Errors in Sulfur Chemistry, 4', *Journal of Sulfur Chemistry*, 3: 1, 37 – 38

To link to this Article: DOI: 10.1080/01961778308082441

URL: <http://dx.doi.org/10.1080/01961778308082441>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

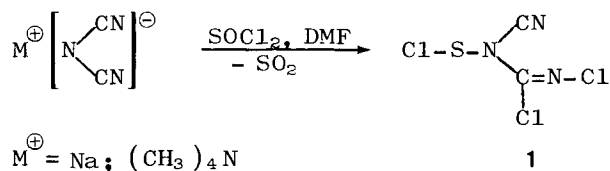
INTERESTING ERRORS IN SULFUR CHEMISTRY, 4

EBERHARD FISCHER

Sektion Chemie, Wilhelm-Pieck-Universität Rostock, DDR-2500 Rostock, GDR

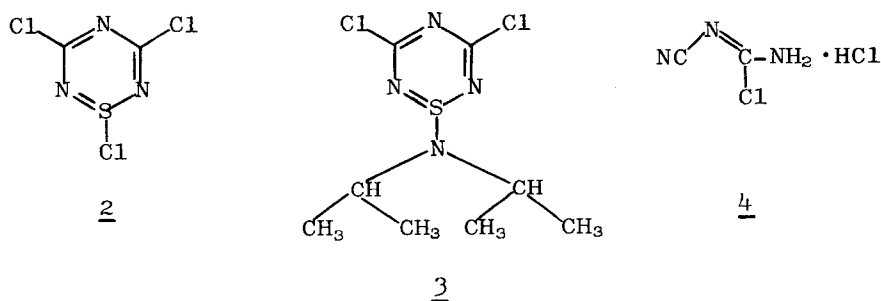
CHLOROTHIO(DICHLOROFORMAMIDE)CYANAMIDE

In 1970 Geevers *et al.*¹ described the reaction of the sodium or tetramethylammonium salt of dicyanoamide with thionyl chloride in the presence of dimethylformamide to chlorothio(dichloroformamide)cyanamide **1** in yields of up to 50-65%.



Evidence for the structure of **1** was presented and the unexpected course of the reaction discussed. The CA name of **1** is N-chloro-N-chlorothio-N-cyano-carbamimidic chloride, CAS registry No. [25816-28-83].

Later in 1974 by Schramm *et al.*² the compound originally regarded as **1** was shown by ¹³C NMR, ESCA, IR, and crystal structure determination³ (compound **3**) to possess the structure of 1,3,5-trichloro-1λ⁴,2,4,6-thiatriazine **2**.



The incorrect structure **1** was discussed¹ based on IR spectra with strong nitrile absorption. Schramm² showed that **2** in the KBr pellet prepared for IR spectroscopy easily hydrolyzes to N-cyano-chloroformamidine hydrochloride **4**.⁴ The IR spectrum of **4** is identical with that expected for **1**.

The reaction of **2** with secondary amines, *e.g.* diisopropylamine leads to 1-diisopropylamino-3,5-dichloro-1λ⁴,2,4,6-thiatriazine **3**^{2,3}, CAS registry No. [54318-81-9].

Malodinitrile or sodium dicyanoamide reacts with phosphorus pentachloride⁵ to analogous 2,2,4,6-tetrachloro-1,3,2λ⁵-diazaphosphorines or 2,2,4,6-tetrachloro-1,3,5,2λ⁵-triazaphosphorines.

REFERENCES

1. J. Geever, J. Th. Hackmann, and W. P. Trompen, *J. Chem. Soc. (C)* **1970**, 875.
2. W. Schramm, G. Voß, G. Rembarz, and E. Fischer, *Z. Chem.*, **14**, 471 (1974).
3. A. Kálmán, Gy. Argay, E. Fischer, and G. Rembarz, *Acta Crystallogr.*, **B 35**, 860 (1979).
4. E. Allenstein, *Z. Anorg. Allg. Chem.*, **332**, 215 (1963).
5. V. I. Shevshenko and P. P. Kornuta, *Zh. Obshch. Khim.*, **36**, 1254 (1966).