ISO/IEC JTC 1/SC 2/WG 2 ***N3813***
Date: 2010-03-21

DOC TYPE: Working Group Document
TITLE: Comments on spelling SULPHUR vs SULFUR in FPDAM 8
SOURCE: Robert Parker, Royal Society of Chemistry (forwarded by Wally Hooper, Chymistry of Isaac Newton Project, Indiana University) with summary and references provided by Deborah Anderson, Script Encoding Initiative, UC Berkeley
STATUS: Liaison member contribution (from SEI/UCB)
ACTION: For consideration by WG2
DISTRIBUTION: ISO/IEC JTC1/SC2/WG 2

Summary:
Below is an email and accompanying documentation regarding the spelling "sulfur" (vs. "sulphur") in U+1F70D, U+1F70E, and U+1F70F. "Sulfur" was the spelling in the original proposal for alchemical symbols, N3584. The References section at the end of this document includes the wording from the cited standards. An Addendum includes a note from the *OED* Editor.

(Note: Abbreviations have been expanded from the original email.)

From: Robert Parker [mailto:ParkerR@rsc.org]
Sent: Thursday, March 18, 2010 1:45 PM
To: Hooper, Wallace Edd
Subject: sulfur vs sulphur

Dear Wally,
Some of us could remember the change-over we had here (we used to use the 'ph' spelling until around 18 years ago). The reasoning is outlined below. Alan McNaught, who used to be Manager of Journals here and has always (and still is) deeply involved with IUPAC [International Union of Pure and Applied Chemistry], came up with the answer.

All best,
Robert

Dr Robert J Parker CSci CChem FRSC, Managing Director
RSC Publishing, Royal Society of Chemistry, Thomas Graham House,
Science Park, Milton Road, Cambridge CB4 0WF, UK
Tel +44 (0)1223 432308, Fax +44 (0)1223 420247
www.rsc.org/publishing

Sulphur/Sulfur

- Internationally agreed spellings for the chemical elements were provided by IUPAC [International Union of Pure and Applied Chemistry] in the 1990 edition of 'Nomenclature of Inorganic Chemistry'. This contains a table of IUPAC-approved names 'for use in the English language', including 'sulfur', 'caesium', and 'aluminium'. *[See reference at end of this document]* The newer 2005 edition retains the same spellings; the Americanised alternatives cesium and aluminium are noted, but no 'ph' spelling is given for sulphur.

- The English language versions of International Standards (from ISO) and European Standards use the 'f' spelling. *[See reference under ESIS.]* British Standards have used the 'f' spelling since 1992. *[See references]*

- The Royal Society of Chemistry has been using the 'f' spelling in its research publications since 1992, and in the RSC magazine *Chemistry in Britain* since 1997. *[See references]*

- The UK Association for Science Education booklet for teachers "Signs, Symbols and Systematics: the ASE Companion to 16-19 Science" (2000 edition) uses the 'f' spelling.

- Most English dictionaries try to follow current practice, rather than dictate a particular usage; they list alternatives where alternatives exist; thus in many cases both spellings are given.

The following item appeared in the *School Science Review* (published by the UK Association for Science Education) around 1992:

Sulfur or Sulphur

The word sulfur is thought to come from the Sanskrit sulvere. Three Latin dictionaries offer three different words: sulfur (alternatives sulphur, sulpur); sulpur (alternative sulfur); and sulfur. The Greek word for sulfur, theion, comes together with the Latin word in our word thiosulfate. If you seek a compromise or a third way out of the difficulty, you can always opt for the word brimstone again.

The Oxford English Dictionary records that the following forms were used in the centuries indicated:

14 sou(l)fre, soulphre
15 solfre

14-17	sulphre
16	sulfure, sulfre, sulphyr
15-20	sulphur
16-17	sulpher
15,17,19	sulfur
17	sulfer
15-17	sulphure

Gluttons for yet more etymology can consult Mellor's *Chemistry*, vol. 10, p. 1. Large numbers of GCSE candidates, however, offer the spelling sulpher.

The spelling of sulfur was discussed at the Royal Society of Chemistry's Nomenclature Committee meeting in 1979 at the request of the British Standards Institution. An open verdict was recorded. At the 1991 meeting it was noted that the International Union of Pure and Applied Chemistry had recommended sulfur and the Committee agreed to recommend that this spelling should be used in RSC publications in future. The Nomenclature Committee includes representatives of IUPAC, the RSC and BSI, together with the GCE and GCSE Boards, the Biochemical Society, the Laboratory of the Government Chemist, the Association for Science Education, the Chemical Industries Association, the Chemical Structure Association, and of secondary and tertiary education.

Those who fear a transatlantic tug of war should note that the IUPAC recommendations include the UK English spellings caesium and aluminium. They are only recommendations, and readers of F. M. Cornford's book *Microcosmographica Academica* will recall the Principle of Unripe Time that states 'nothing should ever be done for the first time, because the time is not ripe'.

J.S. Clarke [Department of Chemistry, University of Glasgow]

From: Robert Parker [mailto:ParkerR@rsc.org]
Sent: Thursday, March 18, 2010 2:22 PM
Subject: RE: sulfur vs sulphur

References

British Standards Institution. A standard for standards. Structure and drafting. Requirements and guidance. Part 2: Structure and drafting – requirements and guidance. BS 0-2:2005. 14-Dec-2005. ISBN: 0580473775

> P. 20:
> 9.1 Spelling
> Other than in the case of "sulfur", spelling shall be in the form given in *The Shorter Oxford English Dictionary*. Technical terms that do not appear in that dictionary shall be in the form given in the *Chambers Dictionary of Science and Technology*. In the case of "sulfur" (and its derivatives), the International Union of Pure and Applied Chemistry (IUPAC) spelling shall be used.

European chemical Substances Information System [ESIS], European Commission Joint Research Centre institute for Health and Consumer Protection. Source: http://ecb.jrc.ec.europa.eu/esis/

> Substance Name found in EINECS (European INventory of Existing Commercial chemical Substances).
> EC# 231-722-6, [European Commission #]
> CAS# 7704-34-9 [CAS Registry number, a unique identifiers for chemical substances]
> Substance name: sulfur

International Union of Pure and Applied Chemistry [IUPAC], Inorganic Chemistry Division, Commission on Nomenclature of Inorganic Chemistry, Nomenclature of Inorganic Chemistry, (recommendations 1990), Blackwell Scientific Publications, Oxford, UK, 1990.

> The spelling with "sulfur" appears on the tables on pp. 240, 247, and in names on pp. 39, 40, and 41. Note: "sulfur" is also shown on draft recommendations at: http://www.iupac.org/reports/provisional/abstract04/RB-prs310804/TableI-3.04.pdf.

The Royal Society of Chemistry [RSC]. *Journal of Materials Chemistry* (5), 1991.

> Note on Table of Contents, page 2:
> Spelling of Sulfur
> The new (1990) edition of IUPAC's 'Nomenclature of Inorganic Chemistry' contains a table of IUPAC-approved names 'for use in the English language'. These include 'caesium', 'aluminium', and 'sulfur' (spellings as given here). There is increasing use of the 'f' rather than the 'ph' spelling for sulfur in English publications, in particular the English language versions of IS0 and European standards, and those British Standards which implement IS0 standards verbatim. Furthermore, there is no good etymological basis for preferring the 'ph' spelling. In view of these considerations, the Royal Society of Chemistry's Nomenclature Committee has recently recommended that

RSC change to using the 'f' spelling in all its publications. This recommendation will be implemented for RSC's primary journals in 1992.
Alan McNaught
Manager, RSC Journals

Addendum

---------- Original Message ----------
Subject: Entry for sulphur (vs. sulfur)
From: "SIMPSON, John" <john.simpson@oup.com>
Date: Thu, April 1, 2010 9:04 am
To: "dwanders@berkeley.edu" <dwanders@berkeley.edu>

Dear Deborah,

We have not yet revised the entry for 'sulphur/sulfur', though we are well aware of the issue you raise [that is, OED headword has ‘sulfur’ as ‘now U.S. ‘ for definitions 5, 7, 9, but the international groups including British standards have adopted the spelling with ‘f’]. I would expect that the work of revising the entry will be carried out within the next two years (working on the range will be a significant piece of work for one of our science editors, after which the material will have to be reviewed by other scientific editors, etymologically, bibliographically, and then 'finally' by me).

But our policy in this sort of case is clear: in the case of 'sulphur/sulfur' we will have a dual headword and the entry will contain a note describing the word in terms of its historical British and American spellings, before discussing the details of its historical and current status amongst scientists.

Yours sincerely,

John Simpson
Chief Editor, OED