ISO/IEC JTC1/SC2/WG2 N5332 LUCP L-2517

Universal Multiple-Octet Coded Character Set International Organization for Standardization Internationale Standardisierungs-Organisation Organisation Internationale de Normalisation Διεθνής Οργανισμός Τυποποίησης Международная организация по стандартизации

Doc Type: Working Group Document

Title: Proposal to encode historic alchemical symbols

Source: Uwe Mayer, Siegmund Probst, David Rabouin, Elisabeth Rinner, Andreas Stötzner, Achim Trunk, Charlotte Wahl Version: 2nd, revised Previous version: L-2432 (L2/25-131) Related: L-2443 Status: forward to Script Encoding Workgroup / WG2 Action: for expert review and encoding pipeline Date: May 7, 2025 Requester's reference: LUCP L-2517

1. Background

In response to the first version of this proposal we received an extensive commentary by Kirk Miller. This questionaire, with replies by A. Stötzner, is provided as doc. L-2443, it is the background of several issues discussed in this new version of the proposal.

There were also discussions during the Zoom meeting on April 29. As a result, the proposed symbol

ALCHEMICAL SYMBOL FOR HORA-2

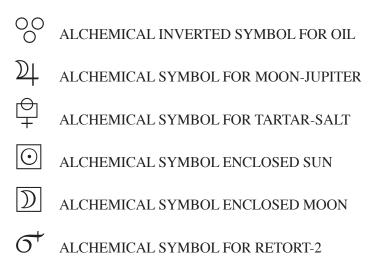
has been dropped; it is now regarded to be represented by character 29D6. Instead of a new character we propose new annotations for characters 231B, 29D6 and 1F76E.

2. Alchemical symbols

We propose the addition of six alchemical symbol characters to the UCS. Some of them relate to existing alchemical/astrological characters. Since there is not enough slots left in the Alchemical Symbol's block 1F700, we propose a new code chart "Alchemical Symbols Extension" which ought to be big enough to accomodate even more possible future additions, since the field of alchemical notation is rather extensive and complex.

3. Characters

If this proposal gets accepted, the following new characters will exist:



4. Annotations – Hora characters

The current situation with various "hour" symbols is partly confusing and needs a revision. The previously proposed \ge *ALCHEMICAL SYMBOL FOR HORA-2* is to be unified with character 29D6 \ge WHITE HOURGLASS. In order to reflect the alchemical usage properly, we propose three annotation changes in the standard:

4.1.

The current annotation to 231B is incorrect because this *pictographic* version of the hourglass symbol is used as a modern user interface symbol, but *not* in historic alchemical notation. Hence we propose a change of annotations:

231B X HOURGLASS

→ 29D6 white hourglass
• in Alchemy 29D6 or 1F76E is used
= alchemical symbol for hour - to be deleted

4.2.

So far a reference to Alchemy is missing in the annotations to 29D6. We propose:

29D6 X WHITE HOURGLASS

- = vertical bowtie
- = white framus
- alchemical symbol for hour, simple form
- \rightarrow 1F76E alchemical symbol for hour
- \rightarrow 231B hourglass

4.3.

In the Alchemy block 1F700 the most widely used simple form of the alchemical *hora* symbol is neither represented nor reflected so far. The existing 1F76E is a calligraphically embellished variant form of the common simple alchemical *hora* sign which is testified in many sources and which is to be represented by 29D6. Therefore we request two additional annotations:

The proposed annotations will help to clarify the differences and best-practice use cases for 29D6 as well as for the other related characters. On this and the following page examples of the wide-spread use of the simple X-shaped *hora* symbol (in previous version proposed as \ge ALCHEMICAL SYMBOL FOR HORA-2) are demonstrated.

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V Water.	O-O Arfenic.	to Anide	B ABath	et uz tenetett	- III camir.
V Earth. fA Finible Air.	& Regulus of Arfenia	+ Vinegar: D+;= D: Vitr islie Acid.	B.M; MB; Water bath. AB Sand bath,		F 10
m. A Mphilic Air.	K 8 Cobalt. N.Nickel.	Dt. D. Vit ous And.	CONTRACTOR STATES		E Afhes.
₩. Δ.A.goulle Aur. \$\[\] Clay:	S.M_Metallie Subglames.		X.An Hour.	S	e
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Jo Fluorsor	@ Variet.	W Spirit of Wine.	- To Sublime.		AD a 11 1
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X.Talk.	8: Sal Gem.	Æ Ether:	ARetort.		
MA Magnefia.	D.Nim	V Lime Water	XX. An. Alembic.	1 .7	VD TT. 7 17
AV: DEarth of Alu	. C; C; Bent.	D Urine.	H. H. A Crucible.	rous Acid.	VB Vapor bath.
Sand.	S.S. Sedative Salt.	°•;©;⊕;▷; <i>0:1.</i>	SSS, Stratum Super		Charles and the second s
O Gold.	X. OX. Sal Ammonia			in And	V In Hours
D:A:Silver.	O. 📥; Allum.	V Fixed Oil.	C.C. Cornu Cervi	rine Acuil.	X.An Hour:
Q Copper.	1 Tarlar	A Snlphur;	Hartshorn.		A. MORGET MALES AMMERICANTING AND ADDRESS
24 Tin.	T: S: Alkali.	Of Hepar of Sulphur:	m ABottle.	ofortis.	O.A.Dav
Th Lead,	Ov. Ov. Fixed Alkali.	APhofphorns.	griAGmin.	gorus.	O.A.Day:
Q Marenings:	OA, OA Volatile Alloale		Di.A. Soruple.		
O Iron.	m Ov Mild fired Alkali	A STREET OF A STREET OF A STREET	. Zi. A Dram.	a Regia.	Q.A.Night.
Ze Zine. B; W? 8 Bifmuth.	c.⊕v Caufhic fined. Alkali.	⊕ Verdigrife. ЭЮ Glafs.	Zi An Ounce. thi A Pound.	3	TO
B.W. O Bymata.	m. Mild vol Alkali.	Caput Mortumm.	dwti A Benno weight.	1	7 NA A Manth
Guinning	me Marco Matta	- cupue succium.	Albelt Sarp!	ureous Aci	1. A.Month.

Engraving of Andrew Bell (1726–1809). The straight hora symbol ist listed here as the sole form. Source: Welcome collection (https://wellcomecollection.org/works/s5vs9bfr)

Alumen _ OB /	Flegma_ Flucre_	RA	Sulphur Histosophoru T
Aunus - 20-	Gumma	965	Tartar 78 8 A
Aqua Fortis	Hora _	Ø€8Ż	Calx tartank # 8
Arena 883	Jgms Jynistoke	ÂO	Toerra
2 Siscenicum 0-0 1 0 50	Lapiscalamin	aru tr	TunaX

From a 1671 copperplate; showing the straight variant at 1st position. Basil Valentine: The Last Will and Testament of Basil Valentine. (Source: Newton N3584 Alchemy Unicode Proposal – March 31 2009.pdf)

Stunde; lat.: Hora; fr.: Heure; e.: Hour; it.: Ora. \$, 9, 8, 8, 8, h, h, t. X. 1~, A, 正, 门, Э, 月, \$.8.8.

From Geßmann's book (1964)

Proposal to encode historic alchemical symbols

Vornehmste chemis	ene weenen		
¥ m Milalthalch m weifer Aranik τ UKB beigin Π Majmat w Milalt £ Arche C Harn V Wajter & Lift, nfreie	A Faser ♣ Brenchurse Woren ♣ Schneyfel § Leuchtothen (Phasphor) ♣ Luftsänder (Phasphor) ♣ Luftsänder (Phrophor) ♣ Luftsänder (Phrophor) ♣ Kaha ⊕ Baryten ⊕ Baryten ⊕ Baryten ⊕ Baryten ⊕ Sangerste (Sangensel ♣ warentliches Ool ♣ warentliches Ool ♣ warentliches Langensel ⊕ phonyster (Sangensel ⊕ Langerse Lafse Voluegfalle ♥ Twingeicht of Kahal rectfilich ⊕ Langerse Lafse Voluegfalle ♥ Jacker ♥ Jacker ♥ gerolongfalle Kangel ↓ gerolongfalle Kon (Kon)	R Kiladd O Zink Silwingdas B Baunstein Ø Mylsing Ø Stahl P	c. Falerde D. Kalane D. Kalane D. Kalane K

Table from Karl Gottfried Hagen, Grundriß der Experimentalchemie (1786); after Schneider 1964.

Ore. Schmelzen Oio, Sch . Zur ückbleibsel. Todter aaaAmalgama Monat. o Tag PNacht, SPNacht, & Siunde E Woche BB: med Pfund=312=396=)26 3;=3 Vilj=) XXIV=gr. 480. 1.28. Handelsgew: Pfund-321. 1. Loth: 4 Quanto. 276 2 af = 214,757 1. Gran 1,2875 ab; 1ab 0,7767 G.

Gutta, guttae.	G.g.gtb _ H.	- Cin Tropfen; Tro. pfen.
Haematites , fiel Lapis haematites Herba.	H, HB_	Sin Kraut.
Hermetice figilla- tum.	H.S	- Dermetisch figillirt zugeschmeltet.
Hora.	X.17, A.1 「1,3,月、袋、	Eine Stunde.
Hiems. Hydrargyrum, fieh	T.A.	-Der Winter.

From: Medicinisch-Chymisches und Alchemistisches Oraculum (Ulm 1755); after Schneider 1964.



The simple hora symbol in sole position, from Ernesti 1733.

5. Figures and explanations

Con l'occasione del rammollire del ferro, communicherò à V.S. Ill. una cosa assai curiosa communicata al S^r Bodenhausen d'un Signore Curioso che si è dimandato Francesco Miniti. Intorno all'Ammollir il |:vetro:| \mathcal{F} latte di Capra, aceto forte, \mathfrak{S} di uliva, Aloë Epatico, \mathfrak{S} la urino, orina di ragazzi ana. Fà bollire in un vaso invetriato nuovo il |:vetro:|, lescialo nell'infusione caldo in detto mestruo per 1 notte e la mattina opera. Si è fatta la prova in Parma d'uno chiamato Ottici con una Medaglia del Papa e dell'Imperatore in un |:vetro:| verde e riuscì pulitissimo, che poi rassoda come prima.

% ALCHEMICAL INVERTED SYMBOL FOR OIL. Graphically based on the glyph of the common oil symbol, which gets rotated 180 degrees. Here the meaning of the inverted character is "boiled oil" in contrast to "[just] oil", both characters do occur alongside each other here. LAA III-8 p. 248

Con l'occasione del rammollire del ferro communichero à VSIU. una cosa assai cuniara communicata al S. Bodenhausen d'un Signon (unione che si à dimandato Francesco Miniti. intorno all'Ammonijir il VAM R. latte di comi aceto forte, 30 di uliva Aloi Epatico de Caurino, orina di ragazzi ana fa bollire in un veso investriato nuovo il VAM la= scialo nell'infusione caldo in detto mestruo per a notte e la nualtina opena. Si e fatta la prova in Parma d'uno chiamato Ottici con

% ALCHEMICAL INVERTED SYMBOL FOR OIL.

The corresponding part of the original MS source, a letter from M. G. Block for Leibniz, 1699. Source: LBr 75 fol. 30v

Ballinga	Shemisch	e Seichen.	
 I. Befäffe. Bitterte. Bitterte. Borlagt. Kolben. X. Edmölgligd. Syltm. MB. B. M. 200fferbab. W. E. V. Dampfeab. II. Dererationen. Mösempfen. Digetriklagten. Borden. Gönder Missen. Stefenbagen. Bittalden. Kaldy. Bittalde	 Stinig. M Wirtur. H Einerun. MP Pullennöfe. Eif Effont. Q.E. Duinteffing. IV. Gervicht und Mataßte. M. postantier. M. most man gwilden 3 Binger faßt. R. Dradm. G. Cran. B. Gats. gt. 2 Crefton. M. most man gwilden 3 Binger faßt. R. Dradm. R. Dram. V. Seiten. M. Ensbe. S. Substr. M. Substr. Stimt. V. Seiten. V. Seiten. M. Substr. Winnt. V. Seiten. M. Substr. M. Substr. Stimt. V. Seiten. M. Substr. M. Substr. M. Substr. M. Substr. M. Stiffer. M. Substr. M. Stiffer. M. Substr. M. Substr.	 Brennbares Wefen, VII. Matintliche Schrper und derein Pros Ditte insbesondere, 2. Erden und Steine. Schen und Steine. Schnerbe. Caub. Yes itsendiger Rald. Salse und derein Producte, Schner, Chig. Baigenfals. Mittelfals. Stagenfals. Mittelfals. Schinker. Schinker. Schinker. Stagenfals. Mainelfals. Stagenfals. St	 fetts, ausgepreftes Del. gedweid. F. Z. Slander. Operman. Beingelit. Beingelit. Beingelit. Peretikeiter B3. Meretikeiter B3. Meretikeiter B3. Meretalle. Oolo. Elter. Bineter. Starfer. Elter. Starfer. Starfer. Elter. Starfer. Starfer. Starfer. Starfer. Elter. Starfer. Elter. Starfer. Starfer. Elter. Starfer. Starfer.

% ALCHEMICAL INVERTED SYMBOL FOR OIL. From: Weigel 1777 (source: Google Books)

m. h. H. ob nicht die destillation sine affuso liquore per descensum geschehe in diesem n° 3 wirdt keiner destillation sine affuso liquore gedacht, sondern die rectificatio V geschicht in dem P parificatiss. in ein weiswullen zeug gebunden wirdt, alß ein knopff, daran man ein faden last, thut den V in ein Zuckerglaß hanget dan daß Pri i niein, so solvirt die phlegma 5 daß Pri, vn 1 fält gleichsam tropffenweiß wie ein regen auf den boden v. wirdt also der V von der phlegma geschieden, vnd man alßdan per Separatorium scheidet. N° 7 vnd 8 destilliret man sine affuso liquore aber nicht per descensum, sondern wie gebrauchlich vnd bestehet die kunst nur an den Zinnern, kupffern, vnd gläsern gefäßen, ist sehr curios nutzlich vnd leicht. N° 9 Menstruum Willisii ist nicht spiritus Zwelfferi Qris welcher von 10 dem soluto nicht totaliter kan geschieden werden, sondern es ist sal Qri purificatiss. wie Willis in tractatu de fermentatione dessen operation klärlich mit dem 4re entdecket, aber diß Pri verschweiget. N° 10 Lilium Paracelsi verum wirdt allein aus 5, oder auch mit Zuselaug anderer metallen alß O so ist es universal, oder mit Q, J, Q, etc. so ist eß particular vnd gewissen membris vnd kranckheit appropriret, gemacht, habe eß auch gemacht aber 15 doch ohne den Alkrest das aber Coardium Victrioli hier lilium Paracelsi genandt ge-

15 doch ohne den Alkaest, das aber Coagulum Victrioli hier lilium Paracelsi genandt, geschicht propter albedinem et similitudinem, solche coagulation wirdt auch ohne Zuthuung einiges salzes gemacht, sondern mit einer trucknen Erden so aus Italien kompt vnd

PALCHEMICAL SYMBOL FOR TARTAR-SALT

LAA III-2 p. 512 – Volume 2 of LAA series III is currently not available in digitized form.

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PALCHEMICAL SYMBOL FOR TARTAR-SALT

The corresponding part of the original MS (a letter from J. H. Kornmann for Leibniz, 1678). Source: LBr 496 fol. 3v

ohne diese Massa aber auf gemeine art weich vnd zu Kalck, dieses habe offters eigenhandig gemacht. N° 12. \notin per se zu praecipitiren ist gantz leicht, wan man nur erst daß glaß hat 15 woran daß gantze secret hanget. N° 24 bey der separation \odot v.) ex \mathfrak{P}_{+} ist kein verlust sondern gewin, weil aber der \mathfrak{P}_{+} ohne Arsenic vnd andere schädliche sachen nicht wohl zu zwingen oder sich capellirer, läst ist es nicht dur Curiose leute so ihr zeit vnd gesundheit besser anzuwenden wissen, doch wan man erst \mathfrak{P}_{+} in cineres bringt vnd selbige wieder in ein Corpus redigieret, ist solche operation nicht so schadlich, aber doch bey beyden modis 20 grose rüche vnd zeitversäumnüß also mehr für grobe arbeitsamme leut so es wie ein handt

²⁴ ALCHEMICAL SYMBOL FOR MOON-JUPITER denotes *silver-bearing tin* in this text. LAA III-2 p. 514

24 ALCHEMICAL SYMBOL FOR MOON-JUPITER

The corresponding part of the above sample, from the original MS (a letter from J. H. Kornmann for Leibniz, 1678). Source: LBr 496 fol. 5r

Another example from the same text. Source: LBr 496 fol. 3v

Nunc conferendo aequationes D et O tuto licebit invenire ipsas n.e.m. ac proinde omnes evolvere collatitias ad utimem usque. Et primum ex terminis secundis fiet:

$$\frac{4d^3ag\lambda + a^3\phi\lambda n + 4a^3b\lambda e - d^4a\beta - ad^2a\beta n - [a^3e\beta]n}{+d^4\lambda + and^2\lambda + a^3e\lambda} \sqcap m. e$$

420

O ALCHEMICAL SYMBOL ENCLOSED SUN, originally denotes foliated gold;

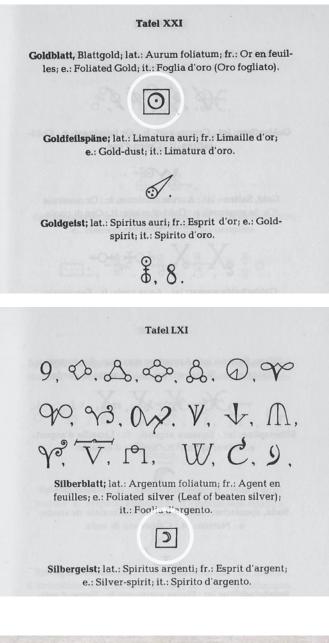
▷ ALCHEMICAL SYMBOL ENCLOSED MOON, originally denotes *foliated silver*. This example shows a 'borrowed' usage of the two alchemical symbols in a mathematical script. It was not uncommon in those days to take certain symbols from another background and use them in a different context and with a different meaning. In this case the meaning is just that of reference marks; the symbols are, however, clearly belonging to the alchemical notation system by their origin. LAA VII-2 p. 420 – *Volume 2 of LAA series VII is currently not available in digitized form*.

4 300 + 4306 d++ and2+ a3 anbed 6d2 4anbdaa a3 q A aB + ad aB aB + a BaB Sad?

© ALCHEMICAL SYMBOL ENCLOSED SUN and ▷ ALCHEMICAL SYMBOL ENCLOSED MOON as they appear alongside the ordinary sun and moon (gold/silver) symbols (→) in the corresponding MS. source: LH 35 14 1 fol. 230v

Proposal to encode historic alchemical symbols

N. 32



ALCHEMICAL SYMBOL
 ENCLOSED SUN,
 ALCHEMICAL SYMBOL
 ENCLOSED MOON,
 here shown in their original alchemical
 context; from Geßmann's concise book
 on alchemical symbols (1964).

☑ ALCHEMICAL SYMBOL ENCLOSED SUN, from Ernesti 1733.



Kirk Miller discusses the option of representing \odot and \mathbb{D} by use of \odot (2609) and \mathbb{D} (263D) together with 20DE COMBINING ENCLOSING SQUARE. In order to verify this approach in practice we have viewed the paragraph about this matter in various typical usage scenarios.

Hora-2, as 'white hourglass', is also found in the <u>Newton Corpus</u> (btm, under 'editorial marks'), and wasn't requested separately.

The square for foil is productive, being used for any malleable metal. One possibility would be U+20DE COMBINING ENCLOSING SQUARE, for $D \square$ (silver foil) and $O \square$ (gold foil), and so on with $\Box \square$ (a variant of silver foil), $2\square$ (tin foil or old-style electrum foil), $2\square$ (old-style tin foil), $2\square$ (copper foil), $2\square$ (iron foil), and $O \square$ (old-style variant for gold foil). I haven't seen it with Saturn for lead foil.

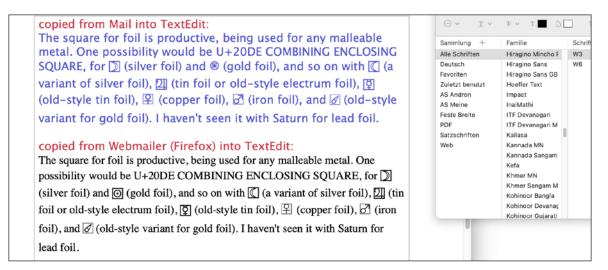
[Andreas, on my browser the Venus and Mars symbols show up as colored emojis. That behaviour can be suppressed.]

If you take a look at <u>folio 6 of Marcianus</u>, you'll see multiple instances of an allograph of this convention, where the square is instead attached to the bottom of the planetary symbol to indicate a foil of the planetary metal, e.g. attached to the old symbol U+1F71A \mathcal{A} for sun/gold for gold leaf/foil (3rd symbol from top, left column), on \mathcal{D} Moon for silver foil (no. 11), on \mathcal{Q} Venus for copper foil (no. 17), on an old variant of \mathcal{A} Mars for iron foil (no. 24, 3rd from the btm), and on Mercury for tin foil (no. 17 in the 2nd column), using an old identification of Mercury rather than Jupiter as the governing planet of tin.

a) A part of Kirk Miller's original explanations, viewed in a webmailer (Firefox, Mac).

treff: Re: Unicode feedback on alchemical symbols		
n: Andreas Stötzner – as@signographie.de Signatur:	Sign. Geschäft	000
Iora-2, as 'white hourglass', is also found in the Newton Corpus (btm, under 'editorial marks'), and wasn't request	ed separately.	⊙ ~ I
The square for foil is productive, being used for any malleable metal. One possibility would be U+20DE COMBININ- QUARE, for \mathfrak{D} (silver foil) and \mathfrak{D} (gold foil), and so on with \mathfrak{C} (a variant of silver foil), \mathfrak{D} (tin foil or old-style electric tyle tin foil), \mathfrak{P} (copper foil), \mathfrak{D} (iron foil), and \mathfrak{A} (bd-style variant for gold foil). I haven't seen it with Saturn for le Andreas, on my browser the Venus and Mars symbols show up as colored emojis. That behaviour can be suppress f you take a look at <u>folio 6 of Marcianus</u> , you'll see multiple instances of an allograph of this convention, where th ttached to the bottom of the planetary symbol to indicate a foil of the planetary metal, e.g. attached to the old sy	G ENCLOSING rum foil), 图 (old- ead foil. ed.] e square is instead mbol U+1F71A ♂	Sammlung + Alle Schriften Deutsch Favoriten Zuletzt benutzt AS Andron AS Meine Feste Breite PDF
or sun/gold for gold leaf/foil (3rd symbol from top, left column), on ⊃ Moon for silver foil (no. 11), on ♀ Venus fo .7), on an old variant of ♂ Mars for iron foil (no. 24, 3rd from the btm), and on Mercury for tin foil (no. 17 in the 2 in old identification of Mercury rather than Jupiter as the governing planet of tin. Note that in this ms the symbols for Mercury, Venus, Jupiter and Saturn haven't yet been Christianized by adding o idditional allographs that we don't distinguish in Unicode.]	2nd column), using	Satzschriften Web
On the other hand, we might want to handle these with distinct characters as we do for with the small circle (not the idded to the planetary metal to indicate an ore of that metal, namely in: ALCHEMICAL SYMBOL FOR IRON ORE, ALCHEMICAL SYMBOL FOR COPPER ORE, ALCHEMICAL SYMBOL FOR TIN ORE,	ne Latin letter 'o'!)	<u>n</u> >:
ALCHEMICAL SYMBOL FOR LEAD ORE, 5 ALCHEMICAL SYMBOL FOR ANTIMONY ORE, [\$ ALCHEMICAL SYMBOL FOR BISMUTH ORE. There's also a silver ore (crescent + small circle) that's not yet in Unicode.		essend?
lote that if we assign separate code points, the planetary metals can also take slashes across them to indicate sha hat metal, and a combining Greek kappa for the calcinated metals. These can be seen just above and below the co ymbols in the Marcianus ms.		

b) A part of Kirk Miller's original text, viewed in Mac's Mail program. Note the different display behaviour of combined sequences.



c) Here a part of the original text has been copied into a simple text editor (TextEdit, Mac). Note the particular fail of the 'gold foil' symbol in the top section and the inconsistent display of 20DE, picked randomly by the OS from various fallback fonts. Note also the planet's glyphs clashing with the square box of 20DE.

_	
	plain text copied from TextEdit into Word: The square for foil is productive, being used for any malleable metal. One possibility would be U+20DE COMBINING ENCLOSING SQUARE, for D[[silver foil] and O[[gold foil], and so on with C[[] variant of silver foil], 4[[tin foil or old-style electrum foil], \$[[old-
	style tin foil), <code>Q[[copper foil], O[[ron foil], and O[cold-style variant for gold foil]. I</code>
	haven't seen it with Saturn for lead foil. [Cambria, symbols random font fallbacks]
	The square for foil is productive, being used for any malleable metal. One possibility would be U+20DE COMBINING ENCLOSING SQUARE, for $\mathbb{D}[\underline{s}]$ would $\mathbb{O}[\underline{g}]$ foil, and so on with $\mathbb{Q}[\underline{a}]$ variant of silver foil), $\mathbb{Q}[\underline{f}]$ foil or old-style electrum foil), $\mathbb{Q}[\underline{f}]$ d-style tin foil), $\mathbb{Q}[\underline{f}]$ foil, $\mathcal{O}[\underline{f}]$ foil, and $\mathcal{O}[\underline{f}]$ and $\mathcal{O}[\underline{f}]$ style variant for gold foil). I haven't seen it with Saturn for lead foil. [Times New Roman, symbols random font fallbacks]
	The square for foil is productive, being used for any malleable metal. One possibility would be U+20DE COMBINING ENCLOSING SQUARE, for \mathbb{D} [silver foil) and \mathbb{O} [gold foil), and so on with \mathbb{C} [a variant of silver foil), \mathbb{Q} [(tin foil or old-style electrum foil), \mathbb{Q} [dd-style tin foil), \mathbb{Q} [dopper foil), \mathfrak{G} [iron foil), and \mathscr{O} [dld-style variant for gold foil). I haven't seen it with Saturn for lead foil. [Andron, some symbols random font fallbacks]
	The square for foil is productive, being used for any malleable metal. One possibility
	would be U+20DE COMBINING ENCLOSING SQUARE, for $\mathbb{D}\square$ (silver foil) and $\odot\square$
	(gold foil), and so on with ແ□ (a variant of silver foil), ལ□ (tin foil or old-style electrum
	foil), ♀ (old-style tin foil), ♀ (copper foil), ♂ (iron foil), and ♂ (old-style variant
	for gold foil). I haven't seen it with Saturn for lead foil. [Arial Unicode MS, symbols
	partly random font fallbacks]
	decoding example: $Q \square = 40$

d) A test with various fonts chosen, set in MS Word. In all four test cases the OS picks missing glyphs in the selected font ramdomly out of other fonts, the result is an unreadable chaos.

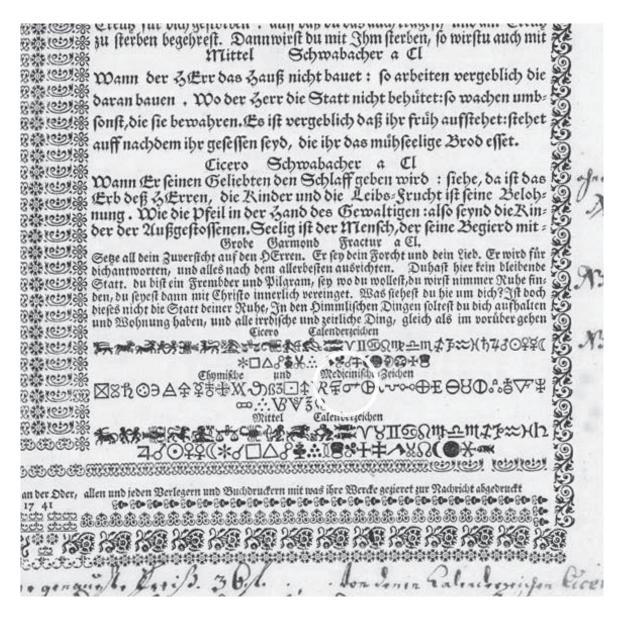
These testings reveal that the use of 20DE in conjunction with planetary signs produce display faults of all kinds, in most cases. COMBINING ENCLOSING SQUARE is in most (or many) frequently used fonts either absent or implemented with wrong definitions, which cause the results depicted. The fact that a use of 20DE could be considered as 'smart encoding' from a more puristic or theoretical point of view, doesn't help any. Therefore we propose new codepoints for \bigcirc and \bigcirc .

croim curve Covarithmue uctione. or no Jour 2 mart 1 m m

σ⁺ ALCHEMICAL SYMBOL FOR RETORT-2

We propose a new codepoint for this alchemical symbol "retorte". The symbol 1F76D already exists with the meaning "retorte", but it has a considerably different glyph shape and it would be a violation of editorial principles to use it instead. Among the alchemical symbols already encoded there are a few precedents for the practice to admit several characters with homonymous definition. – LBr 79 fol. 90v (top, middle), 100r (below)

of extractory in more 3 Gete less: concedendo, abour ondi an ignifatry - proponor 10-4-In mult 22 minas mi normy



♂⁺ ALCHEMICAL SYMBOL FOR RETORT-2
 From a printer's specimen, by Philipp Glaser, Frankfurt/O., 1741.
 Source: Universitätsbibliothek Frankfurt/M.

6. Unicode Character Properties

xe01;ALCHEMICAL INVERTED SYMBOL FOR OIL;So;0;ON;;;;;N;;;; xe02;ALCHEMICAL SYMBOL FOR MOON-JUPITER;So;0;ON;;;;;N;;;; xe03;ALCHEMICAL SYMBOL FOR TARTAR-SALT;So;0;ON;;;;;N;;;; xe04;ALCHEMICAL SYMBOL ENCLOSED SUN;So;0;ON;;;;N;;;; xe05;ALCHEMICAL SYMBOL ENCLOSED MOON;So;0;ON;;;;N;;;; xe06;ALCHEMICAL SYMBOL FOR RETORT-2;So;0;ON;;;;N;;;;

"x" stands for unspecified codespace. "e" refers to our internal characters classification, see N5277.

7. Bibliography

LAA – refers to: Leibniz, Gottfried Wilhelm: Sämtliche Schriften und Briefe. ('Leibniz-Akademie-Ausgabe', many volumes)

LBr - refers to: Leibniz's original correspondence papers, GWLB Hanover

LH - refers to: Leibniz's original manuscripts, GWLB Hanover

[Ernesti, J. H. G.], Die wol-eingerichtete Buchdruckerey. Nürnberg, J. A. Endter Erben 1733 (Reprint: Radebeul 1940)

Geßmann, G. W.: Die Geheimsymbole der Alchymie, Arzneikunde und Astrologie des Mittelalters. Ulm 1964

Schneider, Wolfgang: Lexikon alchemistisch-pharmazeutischer Symbole. Weinheim/Bergstr. 1962 Weigel, Christian Ehrenfried: Grundriss der reinen und angewandten Chemie zum Gebrauch academischer Vorlesungen entworfen. Greifswald 1777

ISO/IEC JTC 1/SC 2/WG 2 PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS				
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646 ¹ Please fill all the sections A, B and C below.				
Please read Principles and Procedures Document (P & P) from <u>http://std.dkuug.dk/JTC1/SC2/WG2/docs/principles.html</u> for guidelines and details before filling this form.				
Please ensure you are using the latest Form from <u>.http://std.dkuug.dk/JTC1/SC2/WG2/docs/summ</u> See also <u>.http://std.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html</u> for latest <i>Roadmap</i>	naryform.html 55 .			
A. Administrative				
1. Title: Proposal to add historic scientific characters to the UCS				
2. Requester's name: Uwe Mayer, Siegmund Probst, David Rabouin, Elisabeth Rinner, Andre	eas Stötzner,			
Achim Trunk, Charlotte Wahl 3. Requester type (Member body/Lialson/Individual contribution): Individual (work				
3. Requester type (Member body/Liaison/Individual contribution): Individual (work 4. Submission date: 2025-05.07	group)			
5. Requester's reference (if applicable): LUCP L-2517	·			
6. Choose one of the following: This is a complete proposal:	Yes			
(or) More information will be provided later:				
B. Technical – General				
1. Choose one of the following: a. This proposal is for a new script (set of characters):	No			
Proposed name of script: b. The proposal is for addition of character(s) to an existing block:	Yes			
Name of the existing block: Alchemical Symbols [Extension	n]			
2. Number of characters in proposal:	6			
3. Proposed category (select one from below - see section 2.2 of P&P document): A-Contemporary B.1-Specialized (small collection) Yes B.2-Specialized (large co	ullection)			
C-Major extinct D-Attested extinct E-Minor extinct				
F-Archaic Hieroglyphic or Ideographic G-Obscure or questionable usag				
4. Is a repertoire including character names provided?a. If YES, are the names in accordance with the "character naming guidelines"	Yes			
in Annex L of P&P document?	Yes			
b. Are the character shapes attached in a legible form suitable for review?	Yes			
 5. Fonts related: a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publ standard? 	lishing the			
Andreas Stötzner				
b. Identify the party granting a license for use of the font by the editors (include address, e-n Andreas Stötzner Gestaltung, Klauflügelweg 21, 88400 Biberach/R., Germany, as@sig				
6. References: a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?	Vaa			
b. Are published examples of use (such as samples from newspapers, magazines, or other	Yes			
of proposed characters attached?				
7. Special encoding issues: Does the proposal address other aspects of character data processing (if applicable) such a presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose informat				
8. Additional Information: Submitters are invited to provide any additional information about Properties of the proposed Cha that will assist in correct understanding of and correct linguistic processing of the proposed Charac Examples of such properties are: Casing information, Numeric information, Currency information, information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directiona Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode information. See the Unicode standard at . <u>http://www.unicode.org/feports/tr44/</u>) and associated Unicode Tec information needed for consideration by the Unicode Technical Committee for inclusion in the Unic	cter(s) or script. Display behaviour I behaviour, Default normalization related scripts. Also see chnical Reports for			

¹ Form number: N4502-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11, 2005-01, 2005-09, 2005-10, 2007-03, 2008-05, 2009-11, 2011-03, 2012-01)

C. Technical - Justification

C. Technical - Justification		
1. Has this proposal for addition of c		Yes
If YES explain	L-2432 (L2/25-131)	
	ers of the user community (for example: National Body,	
user groups of the script or ch		Yes
If YES, with whom?	Leibniz-Archiv, Forschungsstelle der Leibniz-Edition	
	Niedersächsische Landesbibliothek (GWLB), Hanover	· ·
	Göttingen Academy of Science and Humanities in Lower Saxo	
	Philiumm research group of CNRS (UMR 7219, laboratoire SF	PHERE) /
	Université de Paris VII;	
	general: scholars, researchers, authors and editors working in th	
	science history and upon editions of historic text corpora (e.g.	of G. W.
	Leibniz, but also many others)	
If YES, available releva		
	y for the proposed characters (for example:	
	on technology use, or publishing use) is included?	Yes
Reference:		
		Common
Reference:	mainly specialist usage, scholarly, worldwide	
5. Are the proposed characters in cu	irrent use by the user community?	Yes
If YES, where? Reference:	mainly Europe, Americas; other countries	
6. After giving due considerations to	the principles in the P&P document must the proposed characters to	be entirely
in the BMP?		No
If YES, is a rationale		
If YES, reference		
	be kept together in a contiguous range (rather than being scattered)?	? No
	ers be considered a presentation form of an existing	**
character or character sequen		Yes
	for its inclusion provided?	Yes
If YES, reference		
existing characters or other pr	ers be encoded using a composed character sequence of either	Vac
	for its inclusion provided?	Yes Yes
If YES, reference		100
	ter(s) be considered to be similar (in appearance or function)	
to, or could be confused with,		No
	for its inclusion provided?	1,0
If YES, reference		
	f combining characters and/or use of composite sequences?	No
If YES, is a rationale for such	use provided?	
If YES, reference	:	
Is a list of composite sequence	es and their corresponding glyph images (graphic symbols) provided	l? No
If YES, reference	9:	
12. Does the proposal contain chara	cters with any special properties such as	
control function or similar sem	antics?	No
If YES, describe in de	etail (include attachment if necessary)	
12 Deep the property contain	deegraphie competibility characters?	
	deographic compatibility characters?	No
It YES are the equivalent corr	esponding unified ideographic characters identified?	
If YES, reference:		