

siunitx-emulation – Emulation*

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1 siunitx-emulation implementation

Identify the internal prefix (L^AT_EX3 DocStrip convention). In contrast to other parts of the bundle, the functions here may need to redefine those from various submodules.

```
1 <@@=siunitx>
   Start the DocStrip guards.
2 <*package>
3 <*options>
   Some messages.
4 \msg_new:nnn { siunitx } { option-deprecated }
5 {
6   Option~"#1"~has~been~deprecated~in~this~release.\\ \\
7   Use~"#2"~as~a~replacement.
8 }
9 \msg_new:nnn { siunitx } { option-removed }
10 { Option~"#1"~has~been~removed~in~this~release. }
```

```
\_siunitx_option_deprecated:nn
\_siunitx_option_deprecated:nnn
\_siunitx_option_deprecated:nnV
```

Abstract out a simple wrapper.

```
11 \cs_new_protected:Npn \_siunitx_option_deprecated:nn #1#2
12 {
13   \msg_info:nnnn { siunitx } { option-deprecated } {#1} {#2}
14   \keys_set:nn { siunitx } {#2}
15 }
16 \cs_new_protected:Npn \_siunitx_option_deprecated:nnn #1#2#3
17 {
18   \msg_info:nnnn { siunitx } { option-deprecated } {#1} {#2}
19   \keys_set:nn { siunitx } { #2 = #3 }
20 }
21 \cs_generate_variant:Nn \_siunitx_option_deprecated:nnn { nnV }
```

(End definition for `_siunitx_option_deprecated:nn` and `_siunitx_option_deprecated:nnn`.)

*This file describes v3.0.1, last revised 2021-05-18.

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```

\__siunitx_option_removed:n Abstract out a simple wrapper.
\__siunitx_option_removed:V
22 \cs_new_protected:Npn \__siunitx_option_removed:n #1
23 {
24   \msg_warning:nnx { siunitx } { option-removed }
25   {#1}
26 }
27 \cs_generate_variant:Nn \__siunitx_option_removed:n { V }

(End definition for \__siunitx_option_removed:n.)

```

1.1 Load-time option

```

28 \clist_map_inline:nn { abbreviations , binary-units , version-1-compatibility }
29 {
30   \keys_define:nn { siunitx } { #1 .code:n = \__siunitx_option_removed:n {#1} }
31 }

```

1.2 Angle options

All straight-forward emulation.

```

32 \keys_define:nn { siunitx }
33 {
34   add-arc-degree-zero .code:n =
35   {
36     \__siunitx_option_deprecated:nnV
37     { add-arc-degree-zero }
38     { fill-angle-degrees }
39     \l_keys_value_tl
40   } ,
41   add-arc-degree-zero .default:n = true ,
42   add-arc-minute-zero .code:n =
43   {
44     \__siunitx_option_deprecated:nnV
45     { add-arc-minute-zero }
46     { fill-angle-minutes }
47     \l_keys_value_tl
48   } ,
49   add-arc-minute-zero .default:n = true ,
50   add-arc-second-zero .code:n =
51   {
52     \__siunitx_option_deprecated:nnV
53     { add-arc-second-zero }
54     { fill-angle-seconds }
55     \l_keys_value_tl
56   } ,
57   add-arc-second-zero .default:n = true ,
58   arc-separator .code:n =
59   {
60     \__siunitx_option_deprecated:nnV
61     { arc-separator }
62     { angle-separator }
63     \l_keys_value_tl
64   }
65 }

```

1.3 Combination functions options

```

66 \keys_define:nn { siunitx }
67 {
68   list-units / brackets .code:n =
69   {
70     \__siunitx_option_deprecated:nn
71     { list-units~==brackets }
72     { list-units~==bracket }
73   } ,
74   range-units / brackets .code:n =
75   {
76     \__siunitx_option_deprecated:nn
77     { range-units~==brackets }
78     { range-units~==bracket }
79   } ,
80   product-units / brackets .code:n =
81   {
82     \__siunitx_option_deprecated:nn
83     { product-units~==brackets }
84     { product-units~==bracket }
85   }
86 }

```

1.4 Command options

```

87 \keys_define:nn { siunitx }
88 {
89   overwrite-functions .code:n =
90   {
91     \__siunitx_option_deprecated:nnV
92     { overwrite-functions }
93     { overwrite-commands }
94     \l_keys_value_tl
95   } ,
96   overwrite-functions .default:n = true
97 }

```

1.5 Print options

```

98 \keys_define:nn { siunitx }
99 {
100   detect-all .code:n =
101   {
102     \__siunitx_option_deprecated:nn
103     { detect-all }
104     {
105       mode~==match , ~
106       propagate-math-font~==true , ~
107       reset-math-version~==false , ~
108       reset-text-family~==false , ~
109       reset-text-series~==false , ~
110       text-family-to-math~==true , ~
111       text-series-to-math~==true
112     }
113   } ,

```

```

114 detect-family .code:n =
115 {
116   \_siunitx_option_deprecated:nn
117   { detect-family }
118   {
119     reset-text-family~~false , ~
120     text-family-to-math~~true
121   }
122 } ,
123 detect-mode .code:n =
124 {
125   \_siunitx_option_deprecated:nn
126   { detect-mode }
127   { mode~~match }
128 } ,
129 detect-none .code:n =
130 {
131   \_siunitx_option_deprecated:nn
132   { detect-none }
133   {
134     mode~~math , ~
135     propagate-math-font~~false , ~
136     reset-math-version~~true , ~
137     reset-text-family~~true , ~
138     reset-text-series~~true , ~
139     text-family-to-math~~false , ~
140     text-series-to-math~~false
141   }
142 } ,
143 detect-shape .code:n =
144 {
145   \_siunitx_option_deprecated:nn
146   { detect-shape }
147   { reset-text-shape~~false }
148 } ,
149 detect-weight .code:n =
150 {
151   \_siunitx_option_deprecated:nn
152   { detect-weight }
153   {
154     reset-text-series~~false , ~
155     text-series-to-math~~true
156   }
157 }
158 }
159 \clist_map_inline:nn
160 {
161   detect-display-math ,
162   detect-inline-family ,
163   detect-inline-weight
164 }
165 {
166   \keys_define:nn { siunitx } { #1 .code:n = \_siunitx_option_removed:n {#1} }
167 }

```

The old font insertion options.

```

168 \clist_map_inline:nn
169 {
170     math-rm      ,
171     math-sf      ,
172     math-tt      ,
173     number-math-rm ,
174     number-math-sf ,
175     number-math-tt ,
176     number-text-rm ,
177     number-text-sf ,
178     number-text-tt ,
179     text-rm      ,
180     text-sf      ,
181     text-tt      ,
182     unit-math-rm  ,
183     unit-math-sf  ,
184     unit-math-tt  ,
185     unit-text-rm  ,
186     unit-text-sf  ,
187     unit-text-tt
188 }
189 {
190     \keys_define:nn { siunitx } { #1 .code:n = \__siunitx_option_removed:n {#1} }
191 }

```

1.6 Symbol options

```

192 \clist_map_inline:nn
193 {
194     math-angstrom ,
195     math-arcminute ,
196     math-arcsecond ,
197     math-celsius   ,
198     math-degree    ,
199     math-micro     ,
200     math-ohm       ,
201     text-angstrom  ,
202     text-arcminute ,
203     text-arcsecond ,
204     text-celsius   ,
205     text-degree    ,
206     text-micro     ,
207     text-ohm       ,
208 }
209 {
210     \keys_define:nn { siunitx } { #1 .code:n = \__siunitx_option_removed:n {#1} }
211 }

```

1.7 Number options

```

212 \keys_define:nn { siunitx }
213 {
214     group-digits / false .code:n =
215     {
216         \__siunitx_option_deprecated:nn

```

```

217         { group-digits ~ = ~ false }
218         { group-digits ~ = ~ none }
219     } ,
220     group-digits / true .code:n =
221     {
222         \_siunitx_option_deprecated:nn
223         { group-digits ~ = ~ true }
224         { group-digits ~ = ~ all }
225     } ,
226     separate-uncertainty .choice: ,
227     separate-uncertainty / false .code:n =
228     {
229         \_siunitx_option_deprecated:nn
230         { separate-uncertainty }
231         { uncertainty-mode~==compact }
232     } ,
233     separate-uncertainty / true .code:n =
234     {
235         \_siunitx_option_deprecated:nn
236         { separate-uncertainty }
237         { uncertainty-mode~==separate }
238     } ,
239     separate-uncertainty .default:n = true
240 }

```

A small number of removed options.

```

241 \clist_map_inline:nn
242 {
243     input-protect-tokens ,
244     input-quotient ,
245     quotient-mode
246 }
247 {
248     \keys_define:nn { siunitx } { #1 .code:n = \_siunitx_option_removed:n {#1} }
249 }

```

Options for number processing: largely removals.

```

250 \keys_define:nn { siunitx }
251 {
252     add-decimal-zero .choice: ,
253     add-decimal-zero / false .code:n =
254     {
255         \_siunitx_option_deprecated:nn
256         { add-decimal-zero }
257         { minimum-decimal-digits~=-0 }
258     } ,
259     add-decimal-zero / true .code:n =
260     {
261         \_siunitx_option_deprecated:nn
262         { add-decimal-zero }
263         { minimum-decimal-digits~=-1 }
264     } ,
265     add-decimal-zero .default:n = true ,
266     add-integer-zero .code:n =
267     { \_siunitx_option_removed:V \l_keys_key_tl } ,

```

```

268 close-bracket .code:n =
269     { \_siunitx_option_removed:V \l_keys_key_tl } ,
270 bracket-numbers .choice: ,
271 bracket-numbers / false .code:n =
272     {
273         \_siunitx_option_deprecated:nn
274         { bracket-numbers }
275         { bracket-ambiguous-numbers~==false }
276     } ,
277 bracket-numbers / true .code:n =
278     {
279         \_siunitx_option_deprecated:nn
280         { bracket-numbers }
281         { bracket-ambiguous-numbers~==true }
282     } ,
283 bracket-numbers .default:n = true ,
284 explicit-sign .code:n =
285     {
286         \str_if_eq:nnTF {#1} { + }
287         {
288             \_siunitx_option_deprecated:nn
289             { explicit-sign }
290             { print-implicit-plus~==true }
291         }
292         { \_siunitx_option_removed:V \l_keys_key_tl }
293     } ,
294 omit-uncertainty .code:n =
295     {
296         \_siunitx_option_deprecated:nnV
297         { omit-uncertainty }
298         { drop-uncertainty }
299         \l_keys_value_tl
300     } ,
301 omit-uncertainty .default:n = true ,
302 open-bracket .code:n =
303     { \_siunitx_option_removed:V \l_keys_key_tl } ,
304 retain-unity-mantissa .code:n =
305     {
306         \_siunitx_option_deprecated:nnV
307         { retain-unity-mantissa }
308         { print-unity-mantissa }
309         \l_keys_value_tl
310     } ,
311 retain-unity-mantissa .default:n = true ,
312 retain-zero-exponent .code:n =
313     {
314         \_siunitx_option_deprecated:nnV
315         { retain-zero-exponent }
316         { print-zero-exponent }
317         \l_keys_value_tl
318     } ,
319 retain-zero-exponent .default:n = true ,
320 round-integer-to-decimal .code:n =
321     { \_siunitx_option_removed:V \l_keys_key_tl } ,

```

```

322 scientific-notation .choice: ,
323 scientific-notation / engineering .code:n =
324 {
325   \_siunitx_option_deprecated:nn
326   { scientific-notation~==engineering }
327   { exponent-mode~==engineering }
328 } ,
329 scientific-notation / fixed .code:n =
330 {
331   \_siunitx_option_deprecated:nn
332   { scientific-notation~==fixed }
333   { exponent-mode~==fixed }
334 } ,
335 scientific-notation / false .code:n =
336 {
337   \_siunitx_option_deprecated:nn
338   { scientific-notation~==false }
339   { exponent-mode~==input }
340 } ,
341 scientific-notation / true .code:n =
342 {
343   \_siunitx_option_deprecated:nn
344   { scientific-notation~==true }
345   { exponent-mode~==scientific }
346 } ,
347 scientific-notation .default:n = true ,
348 zero-decimal-to-integer .code:n =
349 {
350   \_siunitx_option_deprecated:nnV
351   { zero-decimal-to-integer }
352   { drop-zero-decimal }
353   \l_keys_value_tl
354 } ,
355 zero-decimal-to-integer .default:n = true
356 }

```

1.7.1 Table options

All straight-forward emulation.

```

357 \keys_define:nn { siunitx }
358 {
359   table-align-text-post .code:n =
360   {
361     \_siunitx_option_deprecated:nnV
362     { table-align-text-post }
363     { table-align-text-after }
364     \l_keys_value_tl
365   } ,
366   table-align-text-post .default:n = true ,
367   table-align-text-pre .code:n =
368   {
369     \_siunitx_option_deprecated:nnV
370     { table-align-text-pre }
371     { table-align-text-before }
372     \l_keys_value_tl

```



```

373     } ,
374     table-align-text-pre .default:n = true ,
375     table-number-alignment / center-decimal-marker .code:n =
376     {
377         \msg_info:nnnn { siunitx } { option-deprecated }
378         { table-number-alignment~==center-decimal-marker }
379         { table-alignment-mode~==marker }
380         \keys_set:nn
381         { siunitx }
382         { table-alignment-mode = marker }
383     } ,
384     table-omit-exponent .code:n =
385     {
386         \__siunitx_option_deprecated:nnV
387         { table-omit-exponent }
388         { drop-exponent }
389         \l_keys_value_tl
390     } ,
391     table-omit-exponent .default:n = true ,
392     table-parse-only .code:n =
393     {
394         \msg_info:nnnn { siunitx } { option-deprecated }
395         { table-parse-only }
396         { table-alignment-mode~==none }
397         \str_if_eq:VnTF \l_keys_value_tl { false }
398         {
399             \keys_set:nn
400             { siunitx }
401             { table-alignment-mode = marker }
402         }
403         {
404             \keys_set:nn
405             { siunitx }
406             { table-alignment-mode = none }
407         }
408     } ,
409     table-space-text-post .code:n =
410     {
411         \msg_info:nnnn { siunitx } { option-deprecated }
412         { table-space-text-post }
413         { table-format }
414         \tl_set:Nn \l__siunitx_table_after_model_tl {#1}
415     } ,
416     table-space-text-pre .code:n =
417     {
418         \msg_info:nnnn { siunitx } { option-deprecated }
419         { table-space-text-post }
420         { table-format }
421         \tl_set:Nn \l__siunitx_table_before_model_tl {#1}
422     }
423 }

```

__siunitx_option_table_format:n

__siunitx_option_table_comparator:nnnnnnn 424 \cs_new_protected:Npn __siunitx_option_table_format:n #1

unitx_option_table_figures-decimal:nnnnnnnn

unitx_option_table_figures-exponent:nnnnnnnn

unitx_option_table_figures-integer:nnnnnnnn

x_option_table_figures-uncertainty:nnnnnnnn

siunitx_option_table_sign-exponent:nnnnnnnn

siunitx_option_table_sign-mantissa:nnnnnnnn

```

425 {
426   \msg_info:nnnn { siunitx } { option-deprecated }
427   { table- #1 }
428   { table-format }
429   \tl_set:Nx \l__siunitx_table_format_tl
430   {
431     \cs:w __siunitx_option_table_ #1 :nnnnnnnn
432     \exp_after:wN \exp_after:wN \exp_after:wN \cs_end:
433     \exp_after:wN \l__siunitx_table_format_tl
434     \exp_after:wN { \l_keys_value_tl }
435   }
436   \exp_after:wN \__siunitx_table_generate_model:nnnnnnn
437   \l__siunitx_table_format_tl
438 }
439 \cs_new:Npn \__siunitx_option_table_comparator:nnnnnnnn #1#2#3#4#5#6#7#8
440 { \exp_not:n { {#8} {#2} {#3} {#4} {#5} {#6} {#7} } }
441 \cs_new:cpn { __siunitx_option_table_figures-decimal:nnnnnnnn }
442 #1#2#3#4#5#6#7#8
443 { \exp_not:n { {#1} {#2} {#3} {#8} {#5} {#6} {#7} } }
444 \cs_new:cpn { __siunitx_option_table_figures-exponent:nnnnnnnn }
445 #1#2#3#4#5#6#7#8
446 { \exp_not:n { {#1} {#2} {#3} {#4} {#5} {#6} {#8} } }
447 \cs_new:cpn { __siunitx_option_table_figures-integer:nnnnnnnn }
448 #1#2#3#4#5#6#7#8
449 { \exp_not:n { {#1} {#2} {#8} {#4} {#5} {#6} {#7} } }
450 \cs_new:cpn { __siunitx_option_table_figures-uncertainty:nnnnnnnn }
451 #1#2#3#4#5#6#7#8
452 { \exp_not:n { {#1} {#2} {#3} {#4} { { S } {#8} } {#6} {#7} } }
453 \cs_new:cpn { __siunitx_option_table_sign-exponent:nnnnnnnn }
454 #1#2#3#4#5#6#7#8
455 { \exp_not:n { {#1} {#2} {#3} {#4} {#5} {#8} {#7} } }
456 \cs_new:cpn { __siunitx_option_table_sign-mantissa:nnnnnnnn }
457 #1#2#3#4#5#6#7#8
458 { \exp_not:n { {#1} {#8} {#3} {#4} {#5} {#6} {#7} } }

(End definition for \__siunitx_option_table_format:n and others.)
Options which all use the same emulation set up.
459 \keys_define:nn { siunitx }
460 {
461   table-comparator .code:n =
462   { \__siunitx_option_table_format:n { comparator } } ,
463   table-figures-decimal .code:n =
464   { \__siunitx_option_table_format:n { figures-decimal } } ,
465   table-figures-exponent .code:n =
466   { \__siunitx_option_table_format:n { figures-exponent } } ,
467   table-figures-integer .code:n =
468   { \__siunitx_option_table_format:n { figures-integer } } ,
469   table-figures-uncertainty .code:n =
470   { \__siunitx_option_table_format:n { figures-uncertainty } } ,
471   table-sign-exponent .code:n =
472   { \__siunitx_option_table_format:n { sign-exponent } } ,
473   table-sign-mantissa .code:n =
474   { \__siunitx_option_table_format:n { sign-mantissa } }
475 }

```

1.8 Unit options

```

476 \keys_define:nn { siunitx }
477 {
478   fraction-function .code:n =
479   {
480     \__siunitx_option_deprecated:nnV
481     { fraction-function }
482     { fraction-command }
483     \l_keys_value_tl
484   } ,
485   literal-superscript-as-power .code:n =
486   { \__siunitx_option_removed:V \l_keys_key_tl } ,
487   per-mode / reciprocal .code:n =
488   {
489     \__siunitx_option_deprecated:nn
490     { per-mode~=-reciprocal }
491     { per-mode~=-power }
492   } ,
493   per-mode / reciprocal-positive-first .code:n =
494   {
495     \__siunitx_option_deprecated:nn
496     { per-mode~=-reciprocal-positive-first }
497     { per-mode~=-power-positive-first }
498   } ,
499   power-font .code:n =
500   { \__siunitx_option_removed:V \l_keys_key_tl } ,
501   qualifier-mode / brackets .code:n =
502   {
503     \__siunitx_option_deprecated:nn
504     { qualifier-mode~=-brackets }
505     { qualifier-mode~=-bracket }
506   } ,
507   qualifier-mode / space .code:n =
508   {
509     \msg_info:nnnn { siunitx } { option-deprecated }
510     { qualifier-mode~=-space }
511     { qualifier-mode~=-phrase"-plus-"qualifier-phrase=\ }
512     \keys_set:nn
513     { siunitx }
514     { qualifier-mode = phrase, qualifier-phrase = \ }
515   } ,
516   qualifier-mode / text .code:n =
517   {
518     \__siunitx_option_deprecated:nn
519     { qualifier-mode~=-text }
520     { qualifier-mode~=-combine }
521   }
522 }

```

1.9 Quantity units

```

523 \keys_define:nn { siunitx }
524 {
525   allow-number-unit-breaks .code:n =

```

```

526     {
527         \_siunitx_option_deprecated:nnV
528         { allow-number-unit-breaks }
529         { allow-quantity-breaks }
530         \l_keys_value_tl
531     } ,
532     allow-number-unit-breaks .default:n = true ,
533     exponent-to-prefix .choice: ,
534     exponent-to-prefix / false .code:n =
535     {
536         \_siunitx_option_deprecated:nn
537         { exponent-to-prefix~==false }
538         { prefix-mode~==input }
539     } ,
540     exponent-to-prefix / true .code:n =
541     {
542         \_siunitx_option_deprecated:nn
543         { exponent-to-prefix~==true }
544         { prefix-mode~==combine-exponent }
545     } ,
546     exponent-to-prefix .default:n = true ,
547     multi-part-units .choice: ,
548     multi-part-units / brackets . code:n =
549     {
550         \_siunitx_option_deprecated:nn
551         { multi-part-units~==brackets }
552         { separate-uncertainty-units~==bracket }
553     } ,
554     multi-part-units / repeat . code:n =
555     {
556         \_siunitx_option_deprecated:nn
557         { multi-part-units~==repeat }
558         { separate-uncertainty-units~==repeat }
559     } ,
560     multi-part-units / single . code:n =
561     {
562         \_siunitx_option_deprecated:nn
563         { multi-part-units~==single }
564         { separate-uncertainty-units~==single }
565     } ,
566     number-unit-product .code:n =
567     {
568         \_siunitx_option_deprecated:nnV
569         { number-unit-product }
570         { quantity-product }
571         \l_keys_value_tl
572     } ,
573     prefixes-as-symbols .choice: ,
574     prefixes-as-symbols / false . code:n =
575     {
576         \_siunitx_option_deprecated:nn
577         { prefixes-as-symbols~==false }
578         { prefix-mode~==extract-exponent }
579     } ,

```

```

580     prefixes-as-symbols / true . code:n =
581     {
582         \_siunitx_option_deprecated:nn
583         { prefixes-as-symbols~==true }
584         { prefix-mode~==input }
585     } ,
586     prefixes-as-symbols .default:n = true
587 }
588 </options>

```

1.10 Preamble commands

```

589 (*interfaces)

```

`\DeclareBinaryPrefix` We simply drop #3.

```

590 \NewDocumentCommand \DeclareBinaryPrefix { +m m m }
591 {
592     \siunitx_declare_prefix:Nn #1 {#2}
593 }

```

(End definition for \DeclareBinaryPrefix. This function is documented on page ??.)

`\DeclareSIPrePower` Simply use a throw-away command for the part we do not need: this can be followed by
`\DeclareSIPostPower` some clean-up.

```

594 \NewDocumentCommand \DeclareSIPrePower { +m m }
595 {
596     \siunitx_declare_power:NNn #1 \_siunitx_tmp:w {#2}
597     \seq_remove_all:Nn \l_siunitx_unit_symbolic_seq { \_siunitx_tmp:w }
598 }
599 \NewDocumentCommand \DeclareSIPostPower { +m m }
600 {
601     \siunitx_declare_power:NNn \_siunitx_tmp:w #1 {#2}
602     \seq_remove_all:Nn \l_siunitx_unit_symbolic_seq { \_siunitx_tmp:w }
603 }

```

(End definition for \DeclareSIPrePower and \DeclareSIPostPower. These functions are documented on page ??.)

1.11 Document commands

`\si` A straight copy of `\unit`.

```

604 \NewDocumentCommand \si { 0 { } m }
605 {
606     \mode_leave_vertical:
607     \group_begin:
608         \keys_set:nn { siunitx } {#1}
609         \siunitx_unit_format:nN {#2} \l__siunitx_tmp_tl
610         \siunitx_print_unit:V \l__siunitx_tmp_tl
611     \group_end:
612 }

```

(End definition for \si. This function is documented on page ??.)

`\SI` Almost the same as `\qty`, but with the addition pre-unit.

```

613 \NewDocumentCommand \SI { O { } m o m }
614 {
615   \mode_leave_vertical:
616   \group_begin:
617     \keys_set:nn { siunitx } {#1}
618     \IfNoValueF {#3}
619     {
620       \siunitx_unit_format:nN {#3} \l__siunitx_tmp_tl
621       \siunitx_print_unit:V \l__siunitx_tmp_tl
622       \nobreak
623     }
624     \siunitx_quantity:nn {#2} {#4}
625   \group_end:
626 }

```

(End definition for `\SI`. This function is documented on page ??.)

`\SIlist` Straight copies.

```

\SIrange 627 \NewDocumentCommand \SIlist
628 { O { } > { \SplitList { ; } } m > { \TrimSpaces } m }
629 {
630   \mode_leave_vertical:
631   \group_begin:
632     \siunitx_unit_options_apply:n {#3}
633     \keys_set:nn { siunitx } {#1}
634     \siunitx_quantity_list:nn {#2} {#3}
635   \group_end:
636 }
637 \NewDocumentCommand \SIrange { O { } m m > { \TrimSpaces } m }
638 {
639   \mode_leave_vertical:
640   \group_begin:
641     \siunitx_unit_options_apply:n {#4}
642     \keys_set:nn { siunitx } {#1}
643     \siunitx_quantity_range:nnn {#2} {#3} {#4}
644   \group_end:
645 }

```

(End definition for `\SIlist` and `\SIrange`. These functions are documented on page ??.)

1.12 Symbol commands

646 `\@@=siunitx_emulation`)

`_siunitx_emulation_non_latin:n` As in `siunitx-unit`, but internal in both cases as it's rather specialised.
`_siunitx_emulation_non_latin:nnnn`

```

647 \bool_lazy_or:nnTF
648 { \sys_if_engine luatex_p: }
649 { \sys_if_engine xetex_p: }
650 {
651   \cs_new:Npn \_siunitx_emulation_non_latin:n #1
652     { \char_generate:nn {#1} { \char_value_catcode:n {#1} } }
653 }
654 {

```

```

655 \cs_new:Npn \__siunitx_emulation_non_latin:n #1
656 {
657   \exp_last_unbraced:Nf \__siunitx_emulation_non_latin:nnnn
658   { \char_to_utfviii_bytes:n {#1} }
659 }
660 \cs_new:Npn \__siunitx_emulation_non_latin:nnnn #1#2#3#4
661 {
662   \exp_after:wN \exp_after:wN \exp_after:wN
663   \exp_not:N \char_generate:nn {#1} { 13 }
664   \exp_after:wN \exp_after:wN \exp_after:wN
665   \exp_not:N \char_generate:nn {#2} { 13 }
666 }
667 }

```

(End definition for __siunitx_emulation_non_latin:n and __siunitx_emulation_non_latin:nnnn.)

\SIUnitSymbolAngstrom The same setup as elsewhere but localised to the emulation module

```

\SIUnitSymbolArcminute 668 \AtBeginDocument
\SIUnitSymbolArcsecond 669 {
\SIUnitSymbolCelsius 670   \cs_new_protected:Npn \SIUnitSymbolArcminute
\SIUnitSymbolDegree 671   { \ensuremath { { } ^{\circ} } }
\SIUnitSymbolMicro 672   \cs_new_protected:Npn \SIUnitSymbolArcsecond
\SIUnitSymbolOhm 673   { \ensuremath { { } ^{\mu} } }
674   \@ifpackageloaded { fontspec }
675   {
676     \cs_new_protected:Npx \SIUnitSymbolAngstrom
677     { \__siunitx_emulation_non_latin:n { "00C5 } }
678     \cs_new_protected:Npx \SIUnitSymbolDegree
679     { \__siunitx_emulation_non_latin:n { "00B0 } }
680     \cs_new_protected:Npx \SIUnitSymbolCelsius
681     { \__siunitx_emulation_non_latin:n { "00B0 } C }
682   }
683   {
684     \cs_new_protected:Npx \SIUnitSymbolAngstrom
685     {
686       \siunitx_print_text:n
687       { \__siunitx_emulation_non_latin:n { "00C5 } }
688     }
689     \cs_new_protected:Npx \SIUnitSymbolCelsius
690     {
691       \siunitx_print_text:n
692       { \__siunitx_emulation_non_latin:n { "00B0 } } C
693     }
694     \cs_new_protected:Npx \SIUnitSymbolDegree
695     {
696       \siunitx_print_text:n
697       { \__siunitx_emulation_non_latin:n { "00B0 } }
698     }
699   }
700   \cs_new_protected:Npx \SIUnitSymbolMicro
701   {
702     \siunitx_print_text:n
703     {
704       \bool_lazy_or:nnTF

```

```

705         { \sys_if_engine luatex_p: }
706         { \sys_if_engine xetex_p: }
707         { \_siunitx_emulation_non_latin:n { "00B5 } }
708         { \exp_not:N \textmu }
709     }
710 }
711 \cs_new_protected:Npx \SIUnitSymbolOhm
712 {
713     \exp_not:N \ifmmode
714     \cs_if_exist:NTF \upOmega
715     { \exp_not:N \upOmega }
716     { \exp_not:N \Omega }
717 \exp_not:N \else
718     \siunitx_print_text:n
719     {
720         \bool_lazy_or:nnTF
721         { \sys_if_engine luatex_p: }
722         { \sys_if_engine xetex_p: }
723         { \_siunitx_emulation_non_latin:n { "03A9 } }
724         { \exp_not:N \textohm }
725     }
726     \exp_not:N \fi
727 }
728 }

```

(End definition for \SIUnitSymbolAngstrom and others. These functions are documented on page ??.)

\celsius Deprecated but should work.

```

729 \siunitx_declare_unit:Nn \celsius
730 {
731     \msg_warning:nn { siunitx } { celsius-deprecated }
732     \siunitx_declare_unit:Nn \celsius { \degreeCelsius }
733     \degreeCelsius
734 }
735 \msg_new:nnn { siunitx } { celsius-deprecated }
736 {
737     The~\celsius\ unit-macro~is~deprecated: \
738     use~\degreeCelsius.
739 }

```

(End definition for \celsius. This function is documented on page ??.)

740 </interfaces>

741 </package>