

Latest proposal by NNDC:

New heading **KT-K** for kT in Kelvin;

Use heading **KT** for kT in energy units.

Memo CP-D/322

10 May 2001

From: O. Schwerer

To: Distribution

Subject: Data headings and units for wave length and kT

Reference: CP-C/267

The above memo proposes to make temperature units (e.g. K for Kelvin) standard units for spectrum temperature kT, and to resurrect the data heading WVE-LN for cases where wavelength in Angstrom replaces the incident particle energy.

1) kT (current unit code E).

While we agree that every heading should go with only one dimension ("unit code"), we cannot confirm the finding that only 5 data sets are coded with kT and only 3 with kT in energy units.

We found 57 entries coded with kT, of which only 7 use temperature units (K, DEG-K [which is obsolete] or K9), whereas the other 50 use energy units (most often KEV, but also EV and MEV). See **Appendix 1** for list of entry numbers.

We do not believe that energy units are unusual or inappropriate for kT (in several places one finds the statement that "*for Maxwellian spectra EN-MEAN = 3/2 KT*"). A typical example for the usage is the TITLE of entry 22145 (Phys.Rev.C35,936): "Stellar Krypton cross sections at kT=25 and 52 keV".

Therefore we propose to keep E as the (only) dimension (unit code) for kT, and to introduce a new heading for those few cases which are in the file with kT in temperature units.

2) Heading WVE-LN

We agree to reintroducing the heading WVE-LN for those cases where wavelength in Angstrom replaces the incident particle energy. Consequently, all check programs must be updated accordingly (no messages "missing incident particle energy" must be issued if WVE-LN is given). A list of all entries with EN in Angstroms is given in **Appendix 2**.

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Appendix 1: Entries coded with kT

Entries with kT in energy units:

13634	22195
13647	22253
13695	22254
21548	22255
21737	22256
21761	22285
21768	22305
21882	22307
21899	22337
21906	22374
21913	22375
21933	22377
21948	22387
21991	22442
22008	22447
22009	22448
22010	22449
22037	40296
22078	40547
22099	40553
22145	40847
22163	40922
22171	D0016
22177	D0018
22182	D0020

Entries with kT in temperature units:

22000	DEG-K
A0653	K
A0654	K
C0108	K
10261	K
F0311	K9
F0421	K9

Appendix 2: Entries with EN in ANGSTROM

10156	12674
10185	12675
10345	12861
10495	13045
11198	13468
11258	13652
11301	21336
11783	21369
11786	30123
11809	30168
11973	30177
11974	30226
12150	30342
12243	40046
12593	40049
12617	41323
12666	88023

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Memo CP-C/267

DATE: June 2, 2000
TO: Distribution
FROM: V. McLane
SUBJECT: Data headings and units for wave length and kT

There presently exist some inconsistencies in the data heading vs. unit codes in Dictionary 24. The checking and processing codes must, therefore, make exceptions for these cases. I propose, as we are looking at new directions in databases, it would be a good time to bring the dictionaries into compliance, that is, to make the unit codes correct in all cases.

Following are 2 cases where the present codes are not adequate.

- 1.) kT (current unit code E). The data may be given in K (unit code TEM) or eV (unit code E).

In checking the units for kT, I find only 5 sets already coded. Of these, 3 were coded using units of K. For the 2 that were coded using units of eV, both were given in the reference as K.

Therefore, I propose that the standard unit type for kT should be temperature. We should deal with other cases as they come along.

- 2.) Wave-length (currently coded under the heading EN with unit code E). These are always given as angströms (unit code L).

At present the I only find neutron data coded vs. wave-length. I propose we resurrect the data heading WVE-LN to be used with units of length (L).

If this proposal is accepted, I volunteer to update the entries and send them to the responsible center for retransmission.