

PCTFULL numeric property search

Background

In [PCTFULL](#) a numeric search for a specific set of physical properties is available within the English full text fields. The /PHP index contains a complete list of codes and related text for all physical properties available for numeric search in PCTFULL. A search with the respective field codes will be carried out in all database fields with English text (English title, abstract, description and claims).

For the numeric search 34 physical properties are indexed and searchable, most of them as SI units. In addition, 38 units are converted to SI units in order to encompass a wider range of retrievable values: A search in Kelvin will also generate hits with the respective value (ranges) in Degrees Celsius or Degrees Fahrenheit, a search in Square Metre will also find hit values (ranges) if these are given in Square Inches or Square Feet. The additional units are not only searchable with the default unit (e.g. KG/M), but also with their own name or symbol (e.g. kDa/M). For all units their symbols, the relevant orders of magnitude, and variant spelling are considered, in total about 400 entities.

Numeric searches could be carried out in several ways: If a value of around 10 volt within a defined range is anticipated, the search could be done either as => S 9-11/VOLT or => S 10+-1/VOLT. In addition, as generally for numeric searches on STN, you may specify a specific tolerance for the numeric search with SET TOLERANCE, e.g. SET TOLERANCE VOLT=1 or, on a percentage basis, SET TOLERANCE VOLT=10%, following => S 10/VOLT. See HELP SET TOLERANCE for more information.

All these searches will not only find hits in the text showing the exact value but will also include hits where the value is part of a given range (e.g. S 10+-5/VOLT will find "the range of 3.3 to 12 Volts"). This leads to more comprehensive relevant search results. A search with => S 10 VOLT is more precise, because it will retrieve all documents either with the exact number or with closed ranges where 10 volt is included, but not documents where only an exact number like 9 volt is given.

Searches which should comprise open intervals like "more than 50 C" could be retrieved only by a range search, which includes the lower limit of the open interval (e.g. => S 6500+-1000 VOLT/VOLT will find "minimum of 6000 volts").

The default format of a numeric search is with the base unit. For example with => S 100+-10/POW, the search L1 100+-10 WATT/POW is carried out. If documents with informations in the milliwatt range are expected, the unit has to be specified, for example => S 100+-10 mW/POW.

In order to run a search with a property which has a square or cubic number in its unit, e.g. J/m² for surface tension (/ST), two asterisks have to be inserted between character and number, for example => S 9-11 J/M**2/ST.

A search query combining a field code with a text phrase is useful to retrieve documents, which should have the intended property in its text, though a definite range for the property is not necessary or the adequate range is uncertain. A query like => S TOUCH SCREEN/BI AND POW/PHP allows a more general view, whereas => S (SOLAR? (S) PHOTOVOLTAIC?)/CLM (S) POW/PHP specifies to a paragraph within a certain text element, in this example to claims.

Results of a numeric property search may be viewed with text display formats like D HIT, D KWIC, D DETDEN, D CLMEN, D TX, D ALL etc. The hit part containing the numeric value of the physical property will be highlighted and may appear in the original English text or in English machine translations of non-English (e.g. German or French) original texts.

As the full text in [PCTFULL](#) is based on Optical Character Recognition (OCR) precision of the numeric property search and highlighting of the results depends on character resolution and presentation quality in the underlying text. Slightly misplaced highlighting may be due to misinterpretations or mark-up in the text. EXPAND is not available for the numeric search fields.

The following list summarizes the field codes, the text as well as the default unit for physical property categories available for a numeric property search in PCTFULL. The field codes are also retrievable with an EXPAND on /PHP (=> E/PHP).

Further Reading

PCTFULL reload and numeric property data:
http://www.stn-international.de/pctfull_reload.html

Property Fields (PHP)

<u>Field Code</u>	<u>Property</u>	<u>Default Unit</u>
/SAR	AREA (SURFACE AREA)	m ² (Square Metre)
/BIR	BIT RATE	Bit
/BYR	BYTE RATE	Byte
/CMOL	MOLAR CONCENTRATION (MOLARITY)	mol/L (Mol per Litre)
/CON	CONDUCTANCE (ELECTRICAL CONDUCTANCE)	S (Siemens)
/DEG	DEGREE	Degree
/DEN	DENSITY (MASS DENSITY)	kg/m ³ (Kilogram per Cubic Metre)
/DV	VISCOSITY, DYNAMIC	PA s (Pascal Second)
/RES	ELECTRICAL IMPEDANCE/RESISTANCE	ohm
/ENE	ENERGY	J (Joule)
/FOR	FORCE	N (Newton)
/FRE	FREQUENCY	Hz (Hertz)
/KV	VISCOSITY, KINEMATIC	m ² /s (Square Metre per Second)
/LUME	LUMINOUS EMITTANCE/ILLUMINANCE	Lux
/LUMF	LUMINOUS FLUX (LUMINOUS POWER)	Lumen
/LUMI	LUMINOUS INTENSITY	Candela
/M	MASS	Kg (Kilogram)
/MFS	MAGNETIC FIELD STRENGTH (MAGNETIC FLUX DENSITY)	T (Tesla)
/MFL	MASS FLOW (MASS TRANSFER)	Kg/s (Kilogram per Second)
/MW	MOLECULAR WEIGHT (MOLAR MASS)	g/mol (Gram per Mol)
/PER	PERCENT (PROPORTIONALITY)	percent
/PHV	PH VALUE	pH
/POW	POWER	W (Watt)
/PRES	PRESSURE	Pa (Pascal)
/RAD	RADIOACTIVITY	Bq (Becquerel)
/SCO	SPRING CONSTANT	N/m (Newton per Metre)
/SIZ	SIZE	m (Metre)
/ST	SURFACE TENSION	J/m ² (Joule per Square Metre)
/TEMP	TEMPERATURE	K (Kelvin)
/TIM	TIME	S (Second)
/VEL	VELOCITY	m/s (Metre per Second)
/VELA	VELOCITY, ANGULAR	rpm (Rotations per Minute)
/VOL	VOLUME	m ³ (Cubic Metre)
/VOLT	VOLTAGE	V (Volt)