

STN[®]

Discover Numeric Properties in Patents
- New Dimensions in Full-Text Searching -

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The Significance of Numeric Values in Patents

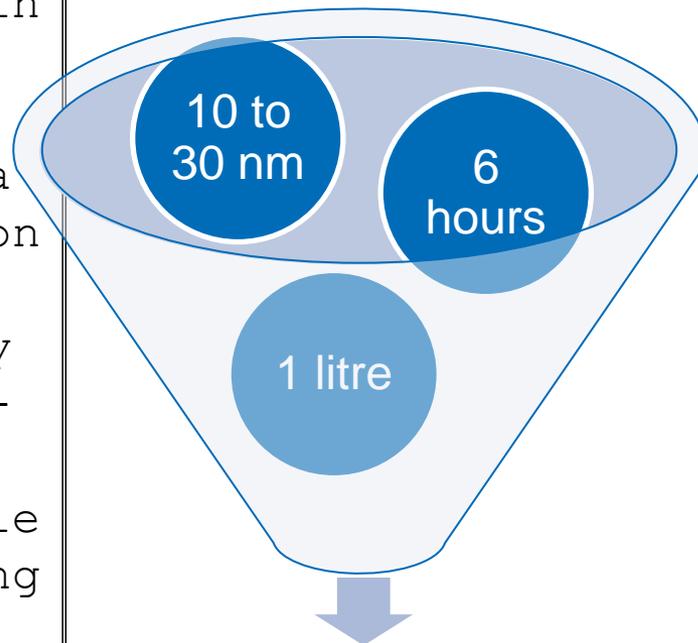
- Numeric values play a key role in patents which use chemical and physical properties to set the scope of patent protection
 - important prior art in different technical areas, e.g. pharma, biotech, chemical, engineering
 - exact values are typically expressed in broad ranges
- Searching numeric data in patents is challenging
 - standard text searching tools are too limited
 - great variety of properties and units
 - great variation of representation

Extracting, Normalizing and Indexing Numeric Data – Adding value to Patent Full-Texts

The resulting CeO₂ particle size measured by x-ray diffraction were in the range of **10 to 30 nm**.

Fig. 1 shows typical nano particles in a sample milled for **6 hours**. In a second experiment a **1 litre** attrition mill was used for milling the mixture.....In addition it is widely accepted that the existence of a so-called 'limiting particle size' limits the practical minimum particle size that can be attained by grinding to values **greater than 100 nm**, irrespective of the type of ball mill employed.

WO99/59754



Default Units
 $1 \cdot 10^{-8} \text{ m} - 3 \cdot 10^{-8} \text{ m}$
 $2,16 \cdot 10^4 \text{ sec}$
 $1 \cdot 10^{-3} \text{ m}^3$

Properties from different Technical Fields

Almost 400 different units are searchable

Becquerel bit byte candela degree Hertz
Joule Kelvin kg/m^3 kilogram kg/s lumen
Lux m^2 m/s meter m^2/s m^3 mol mol/l
N/m Ohm Pa·s Pascal percent pH rpm
second Siemens Tesla Volt Watt

In over 30 different numeric fields

Automatic Unit Conversion

- Example: Searching for Temperatures -

```
=> S 20-30 C/TEMP  
L1 148209 20-30 C/TEMP
```

Temperatures can be searched in **Kelvin** (default unit), **Celcius** and **Fahrenheit** in the field **/TEMP**

```
=> D KWIC 1-3
```

The Celcius search retrieves **answers in several units** (°C, °F, K)

```
L1 ANSWER 1 OF 148209 PCTFULL COPYRIGHT 2011 LNU on STN  
DETDEN
```

```
.....f) the reaction temperature is 25°C to 100°C preferably 30°C.....
```

```
L1 ANSWER 2 OF 148209 PCTFULL COPYRIGHT 2011 LNU on STN  
DETDEN
```

```
.....at temperatures between 265.15K and 303.15K obtained. . . . .
```

```
L1 ANSWER 3 OF 148209 PCTFULL COPYRIGHT 2011 LNU on STN  
DETDEN
```

```
..... wherein said heating element is maintained at a temperature of from  
85 to 115 degrees Fahrenheit.....
```

Property and Full-text Search in Combination

- Example: Liposomes with a size of 100-150 nm -

Use *proximities* to link the numeric search terms with keywords

=> S 100-150 NM/SIZ(S) (LIPOSOM? OR LIPID(W)VESICL?)

L1 2240 100-150 NM/SIZ(S) (LIPOSOM? OR LIPID(W)VESICL?)

Run your numeric search in the *claims* for highly relevant answers

=> S 100-150 NM/SIZ(S) (LIPOSOM? OR LIPID(W)VESICL?)/CLM

L2 223 100-150 NM/SIZ(S) (LIPOSOM? OR LIPID(W)VESICL?)/CLM

=> D TI HIT

L2 ANSWER 1 OF 223 PCTFULL COPYRIGHT 2011 LNU on STN

TIEN PHARMACEUTICAL COMPOSITION COMPRISING MICROBUBBLES FOR TARGETED TUMOR THERAPY

CLMEN

15. The method according to claim 14, wherein the liposomes obtained in(i) have a hydrodynamic diameter of between 100 and 2000 nm, preferably of between 200 and 1000 nm and more preferably of between 400 and 600 nm as determined by dynamic light scattering.

Numeric Search Feature on STN

- Currently available in three patent full-text files:
PCTFULL, AUPATFULL, CANPATFULL
- More details can be found at:
 - presentation: „*The revolutionary PCTFULL on STN*“
<http://www.stn-international.com/patents.html>
 - online help: HELP NPS in the database
 - Summary Sheet PCTFULL
http://www.stn-international.com/sum_sheets.html

Thank you for your attention!

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