Numeric Property Search – Zusätzliche Eigenschaften & Einheiten zur Recherche in einem erweiterten STN Datenbankportfolio

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CAS®
A DIVISION OF THE AMERICAN CHEMICAL SOCIETY

Agenda

- Introduction and numeric retrieval
- Use Case: Claimed dosage information
  - US Patent full text files
  - DWPI and further full text databases
- Summary

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- **Introduction and numeric retrieval**
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The numeric property search (NPS) – basic facts

Properties

- 59 chemical and physical properties searchable, e.g. percentage, dosage, temperature
- More than 20,000 unit variants

Numeric Analyzer

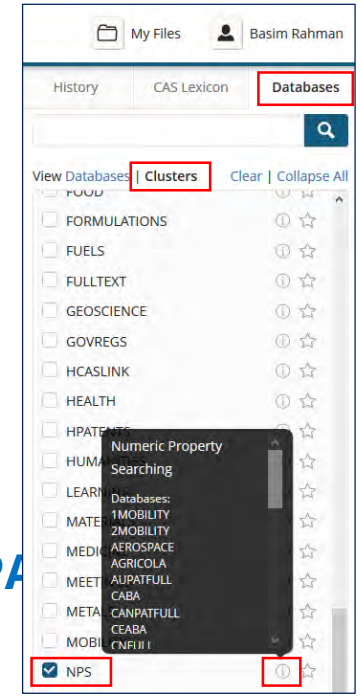
- Analyzes English language text fields, e.g. TI, AB, DETD, CLM
- **HELP NPS**

Numeric search operators

- range search, e.g. 10-15nm/LEN
- > < greater than, less than, e.g. LEN>10nm
- => <= greater or equal to, less or qual to, e.g. LEN<=10nm

Databases

- DWPI and more than 10 patent full text files, newest addition: **USPATFULL** and **USPA**
- More than 10 non-patent literature files, e.g. COMPENDEX and PQScitech



Which databases have the NPS feature?

The Numeric Analzyer identifies numeric data and normalizes it

The resulting CeO_2 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. …

Numeric Analyzer

Retrieve above hits in meaningful context

```
=> S PARTICLE SIZE (10A) 5-50 NM/LEN
=> S SAMPLE MILL? (2A) 360 MIN/TIM
=> S ATTRITION MILL# (2A) 1000CM**3/VOL
```

Data normalization

- $1x10^{-9}$ m, $3x10^{-8}$ m
- $2.16 x10^{4}$ s
- $1 x10^{-3}$ m^3

How to display NPS hits?
Hit terms are highlighted in the text -> Use hit formats to display, e.g. KWIC or HIT

Typical NPS search syntax

NPS search field

Claimed method, antibody dosage of 1-50 mg/kg

```
S ANTIBODY/CLM (S) 1-50/DOS
```

/DOS

AlGaInP LEDs emitting light with a wavelength of 500 - 570 nm

```
S (LED…) (10A) (AlGaInP…) (10A) 500-570 NM/LEN
```

/LEN

Records containing the following composition: Bi<60%, Pb>20%

```
S ALLOY(S) BISMUTH(1A) PER<60(S) LEAD(1A) PER>20
```

/PER

Numeric operators

-	within a range	10-15nm/LEN
>	greater than	LEN>10nm
<	less than	LEN<10nm
>=	greater or equal to	10nm>=LEN
<=	less or equal to	LEN<=10nm

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  - DWPI and further full text databases
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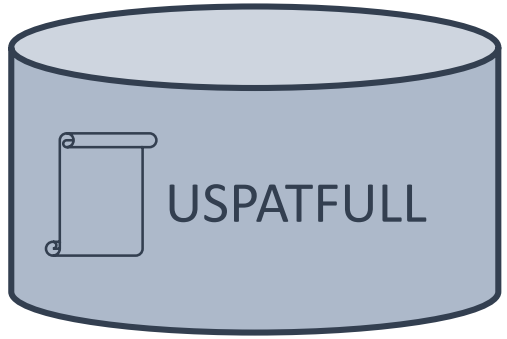
USPATFULL

- Full Text of granted US patents for original publication from 1975 to the present
- US patent applications since 2001
- CAS value-add features
  - Registry Number indexing
  - Controlled Terms
  - Classification codes
- PatentPak*
- Numeric Property Search feature
- Patent Classifications: CPC, IPC, NCL
- Companion file **USPAT2** contains full texts of the latest publication, when 1st publication is available in USPATFULL



*For subscribers only

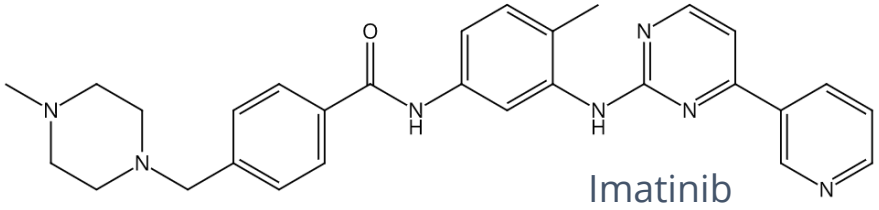
USPATFULL/USPAT2 - available properties

- Type **HELP NPS** to see the list of available numeric properties:

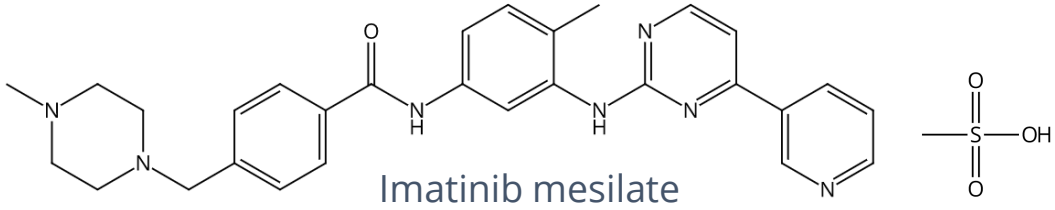
Search field	Property	Unit
/AOS	Amount of Substance	mol
/BIR	Bit Rate	bit/s
/BIT	Stored Information	Bit
/CAP	Capacitance	F
/CATA	Catalytic Activity	kat
/CDN	Current Density	A/m**2
/CMOL	Molarity; Molar Concentration	mol/L
/CON	Electrical Conductance	S
/DB	Decibel	dB
/DEG	Degree	degree
/DEN	Density, Mass; Concentration	kg/m**3
/DEQ	Dose Equivalent; Absorbed Dose	Sv
/DOA	Dosage	mg/kg/day
/DOS	Dose	mg/kg
/DV	Viscosity, dynamic	Pa*s
/ECH	Electric Charge; Capacity	C
/ECO	Electrical Conductivity	S/m
/ELC	Electric Current	A
/ELF	Electric Field	V/m
/ENE	Energy	J
/ERE	Electrical Resistivity	Ohm * m
/FOR	Force	N
/FRE	Frequency	Hz
/IU	International Unit	IU
/KV	Viscosity, kinematic	
/LEN	Length	m
/LUME	Luminous Emittance;	lx
/LUMF	Luminous Flux	Lm
/LUMI	Luminous Intensity	cd
/M	Mass	kg
/MCH	Mass to Charge Ratio	m/z
/MFD	Magnetic Flux Density	T
/MFR	Mass Flow Rate	kg/s
/MFST	Magnetic Field Strength	a/m
/MM	Molecular Weight	g/mol
/MOLS	Molality of Substance	mol/kg g/10
/MVR	Melt Volume Rate	min
/PER	Percent	%
/PHV	pH Value	pH
/POW	Power	W
/PPM	Parts per Million	ppm
/PRES	Pressure	Pa
/RADI	Radioactivity	Bq
/RES	Electrial Resistance	Ohm
/RI	Refractive Index	ri
/RSP	Rotational Speed	rpm
/SAR	Area	m**2
/SOL	Solubility	g/100 g
/SSAM	Specific Surface Area, Mass	m**2/kg
/STSC	Surface Tension	J/m**2
/TCO	Thermal Conductivity	W/m * K
/TEMP	Temperature	K
/TEX	Linear Density	g/km
/TIM	Time	s
/VEL	Velocity	m/s
/VELA	Velocity, angular	rad/s
/VLR	Volumetric Flow Rate	m**3/s
/VOL	Volume	m**3
/VOLT	Voltage	V

Use case: Gleevec (Glivec) formulations with claimed dosage information

- Imatinib (Sold e.g. under brand name Gleevec) is an oral chemotherapy medication
- Identify patents claiming dosages of Imatinib between 1 – 50 mg per kg body weight
- Try to specifically locate claimed details about dosage per time, i.e. mg/day or mg/kg/day



Imatinib



Imatinib mesilate

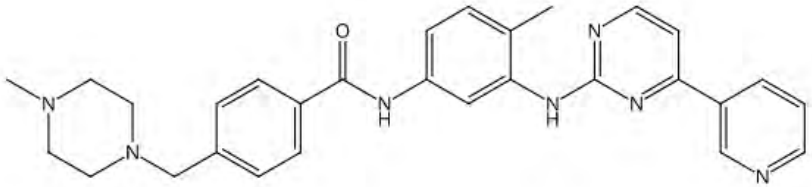
(!) This search does not claim to be exhaustive but rather give ideas how to apply numeric property searching

Start with a chemical name search in CAS Registry

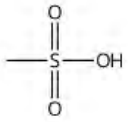
```
=> s gleevec/cn

L1            1 GLEEVEC/CN

=> d


L1   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2020 ACS on STN
RN   220127-57-1   REGISTRY
ED   Entered STN:  03 Mar 1999
CN   Benzamide, 4-[(4-methyl-1-piperazinyl)methyl]-N-[4-methyl-3-[[4-(3-
     pyridinyl)-2-pyrimidinyl]amino]phenyl]-, methanesulfonate (1:1)  (CA INDEX
     NAME)
OTHER CA INDEX NAMES:
CN   Benzamide, 4-[(4-methyl-1-piperazinyl)methyl]-N-[4-methyl-3-[[4-(3-
     pyridinyl)-2-pyrimidinyl]amino]phenyl]-, monomethanesulfonate (9CI)
OTHER NAMES:
CN   1-Methyl-4-(4-((4-methyl-3-((4-(pyridin-3-yl)pyrimidin-2-
     yl)amino)phenyl)carbamoyl)benzyl)piperazine methanesulfonate
CN   CGP 57148B
CN   Gleevac
CN   Gleevec
CN   Glivec
CN   Imatinib mesilate
CN   Imatinib mesylate
CN   Mitinab
CN   ST 571
CN   STI 571
MF   C29 H31 N7 O . C H4 O3 S     ...
```

```
CM   1

CRN  152459-95-5
CMF  C29 H31 N7 O
```

The component Registry Number of this salt is listed under CRN.



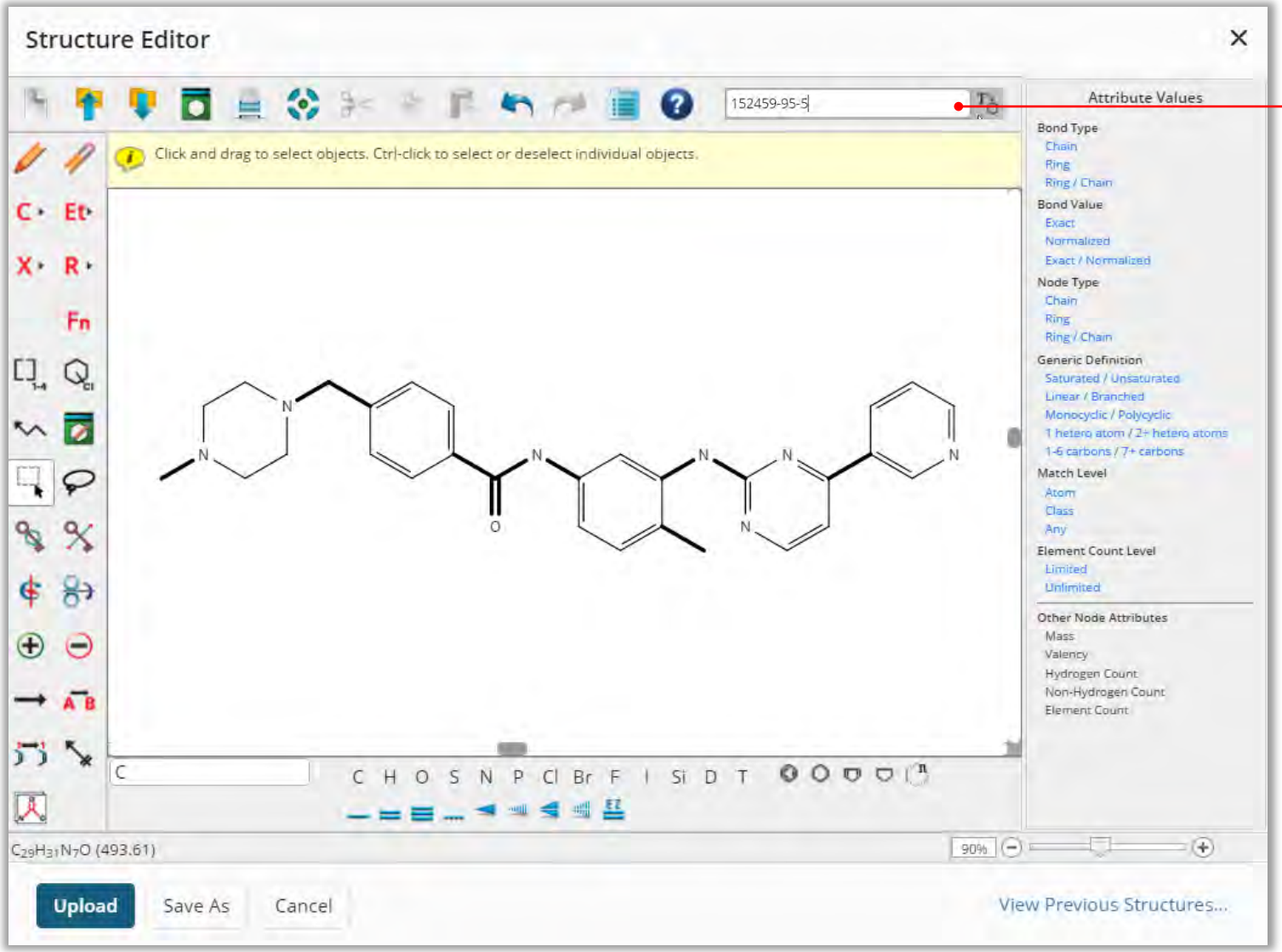
```
CM   2
CRN  75-75-2
CMF  C H4 O3 S
```



Multiple chemical names are listed, i.e. systematic names, trivial names like Imatinib mesilate and trade names Gleevec or Glivec. Apparently Gleevec finds Imatinib mesilate.

```
**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

          5353 REFERENCES IN FILE CA (1907 TO DATE)
            66 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
          5452 REFERENCES IN FILE CAPLUS (1907 TO DATE)
```

Structure query for CAS Registry

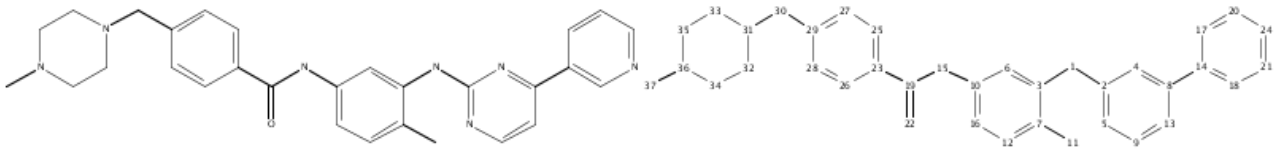


Paste the RN of Imatinib to model the structure.

To find all pharmaceutically relevant forms of Imatinib, we will perform a family search, which will retrieve:

- Stereoisomers, charged and isotopically labeled substances
- Salts, mixtures

Structure parameters are displayed after uploading



Structure appears in two variants:

- As drawn in the editor
- Atom nodes replaced with numbers to be identified in the below attribute table

```
Node Attributes
Ring Nodes : 2  3  4  5  6  7  8  9  10  12  13  14  16  17  18  20  21  23  24  25  26  27  28  29  31  32  33  34  35  36
Chain Nodes : 1  11  15  19  22  30  37
Bond Attributes
Ring Bonds : 2-4  2-5  3-6  3-7  4-8  5-9  6-10  7-12  8-13  9-13  10-16  12-16  14-17  14-18  17-20  18-21  20-24  21-24  23-25  23-26  25-27  26-28  27-29  28-29  31-32  31-33  32-34  33-
35  34-36  35-36
Chain Bonds : 1-2  1-3  7-11  8-14  10-15  15-19  19-22  19-23  29-30  30-31  36-37
Exact Bonds : 7-11  8-14  19-23  29-30
Normalized Bonds : 2-4  2-5  3-6  3-7  4-8  5-9  6-10  7-12  8-13  9-13  10-16  12-16  14-17  14-18  17-20  18-21  20-24  21-24  23-25  23-26  25-27  26-28  27-29  28-29
Exact/Normalized Bonds : 1-2  1-3  10-15  15-19  19-22  30-31  31-32  31-33  32-34  33-35  34-36  35-36  36-37
Markush Attributes
Match Level (ATOM) : 2  3  4  5  6  7  8  9  10  12  13  14  16  17  18  20  21  23  24  25  26  27  28  29  31  32  33  34  35  36
Match Level (CLASS) : 1  11  15  19  22  30  37
Element Count Level (LIMITED) : 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30  31  32  33  34  35  36  37
```

L2 STRUCTURE UPLOADED →

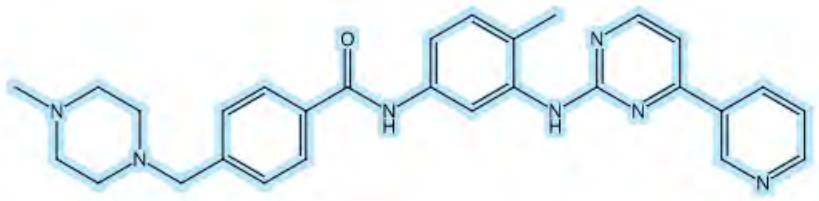
```
=> s l2 fam ful
L3          265 SEA FAM FUL L2
```

Display sustance hits in Registry

=> **d l3 1-**

L3 ANSWER 265 OF 265 REGISTRY COPYRIGHT 2020 ACS on STN
RN 152459-95-5 REGISTRY
ED Entered STN: 25 Jan 1994
CN Benzamide, 4-[(4-methyl-1-piperazinyl)methyl]-N-[4-methyl-3-[[4-(3-pyridinyl)-2-pyrimidinyl]amino]phenyl]- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 4-[(4-Methyl-1-piperazinyl)methyl]-N-[4-methyl-3-[[4-(3-pyridinyl)-2-pyrimidinyl]amino]phenyl]benzamide
OTHER NAMES:
CN 4-(4-Methylpiperazin-1-ylmethyl)-N-[4-methyl-3-[[4-(pyridin-3-yl)pyrimidin-2-yl]amino]phenyl]benzamide
CN CGP 57148
CN Genfatinib
CN Imatinib
. . .

The oldest substance registration represents the basic compound



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

8345 REFERENCES IN FILE CA (1907 TO DATE)
115 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
9058 REFERENCES IN FILE CAPLUS (1907 TO DATE)

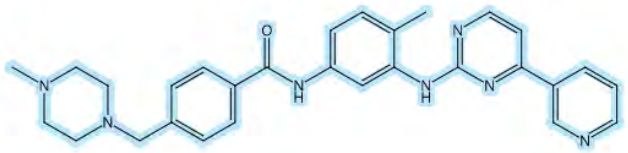
L3 ANSWER 264 OF 265 REGISTRY COPYRIGHT 2020 ACS on STN
RN 220127-57-1 REGISTRY
ED Entered STN: 03 Mar 1999
CN Benzamide, 4-[(4-methyl-1-piperazinyl)methyl]-N-[4-methyl-3-[[4-(3-pyridinyl)-2-pyrimidinyl]amino]phenyl]-, methanesulfonate (1:1) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Benzamide, 4-[(4-methyl-1-piperazinyl)methyl]-N-[4-methyl-3-[[4-(3-pyridinyl)-2-pyrimidinyl]amino]phenyl]-, monomethanesulfonate (9CI)
OTHER NAMES:
CN 1-Methyl-4-(4-((4-methyl-3-((4-(pyridin-3-yl)pyrimidin-2-yl)amino)phenyl)carbamoyl)benzyl)piperazine methanesulfonate
CN CGP 57148B
CN Gleevac
CN Gleevec
CN Glivec
CN Imatinib mesilate

Imatinib mesilate salt

CM 1

CRN 152459-95-5
CMF C29 H31 N7 O

CM 2
CRN 75-75-2
CMF C H4 O3 S



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

5353 REFERENCES IN FILE CA (1907 TO DATE)
66 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
5452 REFERENCES IN FILE CAPLUS (1907 TO DATE)

Crossover results to USPATFULL


```
=> fil uspatfull
=> s l3
L4          3419 L3
=> s l4 and 1-50/doa (S)  (administ? or dos?)/clm
L5            54 L4 AND 1 MG/KG/DAY - 50 MG/KG/DAY /DOA (S)  (ADMINIST? OR DOS?)/
                 CLM
```

Crossover by referring to the Registry L-number

1-50 mg kg^{-1} day^{-1} is the default unit, but also mg day^{-1} will be found

The NPS search for dosage per day (DOA) itself cannot be restricted to specific text fields but the text refinement allows us to focus on claims.
(S) forces the NPS hit to occur in the same claim sentence.

(S) makes sure we'll find the NPS and 'administering' text concept in the same sentence

We retrieve **54 hits**.

Recommended display formats

- NPS hits will be shown in the displayed text
- Highlighting-related display formats make sure you focus on the relevant passages only
- **KWIC**
  - Shows **k**ey**w**ords **i**n **c**ontext, i.e. words around your hit terms, 20 is default
  - Context size can be user-defined, e.g. D KWIC=10 (or SET KWIC=10) shows only 10 keywords around hit terms
  - Will show NPS hit in context + the IT field with our RN hit
- **HIT**
  - Shows the entire field content containing hits
  - In our use case it will show the entire claim where the NPS hit occurred + the IT field with our RN hit

```
=> d hit
```

CLM What is claimed is:
155. The method according to claim 147, wherein the at least one small molecule inhibitor/activator or pharmaceutically acceptable salt or solvate thereof is **administered** at a **dose** of **6** to 12 mg/kg bodyweight/**day**.

```
=> d kwic=10
```

CLM What is claimed is:
. . . molecule inhibitor/activator or pharmaceutically acceptable salt or solvate thereof is **administered** at a **dose** of **6** to 12 mg/kg bodyweight/**day**.

Reduced 'context', 10 words left and 10 words right of my hit terms are shown.

Check results and confirm relevance

L5 ANSWER x OF 54 USPATFULL on STN
AN 2020:89232 USPATFULL Full-text
PI US 20200078322 A1 20200312
CLM What is claimed is:
1. A method of treating a patient with chronic myelogenous leukemia, characterized in that the method comprises **administering** to the patient a pharmaceutical composition or kit preparation that comprises the following active ingredients: (i) (2S)-2-[(2S,3R)-3-amino-2-hydroxy-4-phenylbutanoylamino]-4-methylpentanoic acid or a pharmacologically acceptable salt thereof, and (ii) 4-[(4-methyl-1-piperazinyl)methyl]-N-[4-methyl-3-[[4-(3-pyridinyl)-2-pyrimidinyl]amino]phenyl]-benzamide or a pharmacologically acceptable salt thereof, wherein the active ingredient (i) is **administered** at a **dose** of **5** to 20 mg/day, and the active ingredient (ii) is **administered** at a **dose** of **50** to 200 mg/day, respectively, to the patient one to three times a day.
IT 58970-76-6, Bestatin 152459-95-5, Imatinib **220127-57-1**, Gleevec
(pharmaceutical compn. comprising Gleevec and Bestatin or its salt for treatment or remission of chronic myelogenous leukemia)

Compound (i) is found with the of 5-20 mg/day, but is not the comppound of interest. API (ii) is delivered at a higher dose starting from 50 mg/day and is Imatinib.

NPS highlighting shows at least one number in a range.

Check results and confirm relevance (cont.)

```
L5    ANSWER y OF 54  USPATFULL on STN
PI      US 20050119352      A1  20050602
        US 7361691          B2  20080422
CLM     What is claimed is:
        19. The method of claim 1, wherein the oncogenic kinase modulator is
        administered at a dosage from about 10 mg/day to about 2000 mg/day.

IT     4707-32-8, β-Lapachone   4707-32-8D, β-Lapachone, derivs. and
       analogs 152459-95-5, Imatinib
         (cell cycle checkpoint activator combined with oncogenic kinase
         modulator for treating cancer)
```

The mentioned kinase modulator is named in claim 6 "6. The method of claim 5, wherein the Bcr-Abl signal transduction pathway modulator is imatinib."

Indexing terms show **Imatinib**, our oncogenic kinase modulator of interest. Cell cycle checkpoint activator Lapachone is also listed here

The hit dosage range of 10-2000 mg/day overlaps with our search of 1-50 mg/kg

(**!**) Often compounds are not named explicetely in the respective claim, so searching it will miss relevant hits. Often only its pharmacological or formulation-related function is articulated, e.g. 'modulator' or 'active ingredient'.

Display record including TI, PI, NPS, Hit RN, PatentPak

```
=> D TI PI KWIC HITPPAK
L7   ANSWER x OF 71  USPATFULL on STN
TI     USE OF SMALL MOLECULE INHIBITORS/ACTIVATORS IN COMBINATION WITH
       (DEOXY)NUCLEOSIDE OR (DEOXY)NUCLEOTIDE ANALOGS FOR TREATMENT OF CANCER
       AND HEMATOLOGICAL MALIGNANCIES OR VIRAL INFECTIONS
PI     US 20150290235      A1  20151015
CLM    What is claimed is:
  .  .  .  according to claim 147, wherein the at least one small molecule
       inhibitor/activator or pharmaceutically acceptable salt or solvate
       thereof is administered at a dose of 6 to 12 mg/kg bodyweight/day.

IT    51-21-8, Fluorouracil                          00-8, Trifluridine
      149647-78-9, Vorinosta                         e 152459-95-5
      , Imatinib   153559-49-0, Bexarotene   154361-50-9, Capecitabine
      (use of small mol. inhibitors/activators in combination with
      (deoxy)nucleoside or (deoxy)nucleotide analogs for treatment of cancer
       and hematol. malignancies or viral infections)
PatentPak PDF | PatentPak PDF+ | PatentPak Interactive
PPAK
     152459-95-5, Imatinib, Pg 53
```

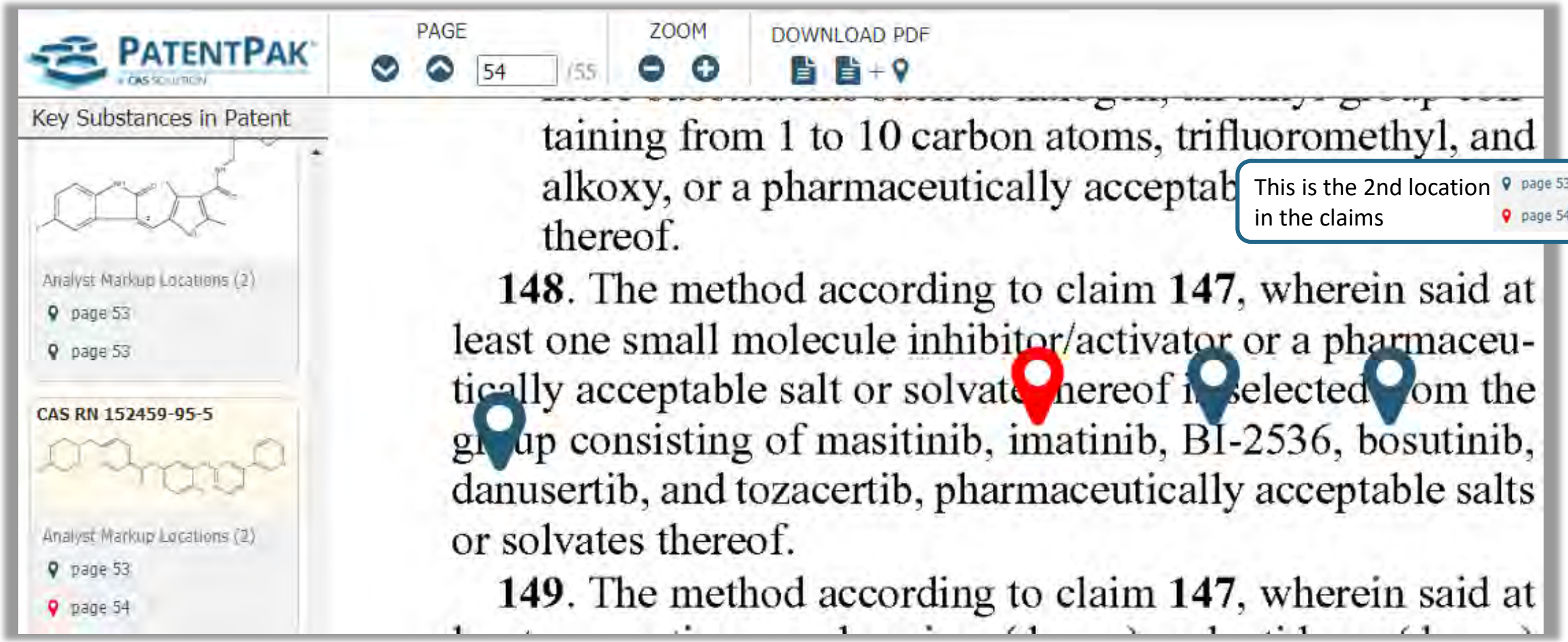
This describes a group of compounds, e.g. Imatinib!

6-12 mg/kg/day. Bodyweight is explicitely mentioned in this patent claim.

PatentPak links are available

If the US basic was indexed, **hitppak** links to the specific patent location of your substance hit

PatentPak shows the detailed location of the imatinib substance hit



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- **Use Case: Claimed dosage information**
  - US Patent full text files
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Expand search to DWPI: Structure search + NPS

```
=> FIL WPINDEX

=> S L1 FAM FULL

L8            78 SEA FAM FUL L1

=> S L8/DCR

L9          2774 L8/DCR
```

The workflow on this slide shows a **structure search** in combination with NPS (as shown for USPATFULL).

2774 patent family records in DWPI (L9) having Glivec/Gleevac indexed

Expand search to DWPI: Structure search + NPS

```
=> FIL WPINDEX

=> S L1 FAM FULL

L8            78 SEA FAM FUL L1

=> S L8/DCR

L9          2774 L8/DCR

=> S L9 AND (1-50 MG/KG/DOS (S) (ADMINIST? OR DOS?)/BI,BIEX)

L10          329 L9 AND (0.1-30 MG/KG/DOS (S) (ADMINIST? OR DOS?)/BI,BIEX,CLM)

=> D TI HIT

L10  ANSWER 1 OF 329  WPIX COPYRIGHT 2020   CLARIVATE ANALYTICS on STN
TI   Pharmaceutical composition useful for treating breast cancer, colorectal
     cancer, gastric cancer, lung cancer, pancreatic cancer, kidney cancer or
     ovarian cancer, comprises antibody-drug conjugate and kinase inhibitor
ABEX  ADMINISTRATION - The pharmaceutical composition in the form of aqueous
     injection, is administered by infusion intravenously, intracutaneously,
     subcutaneously, intramuscularly, or intraperitoneally, preferably
     intravenously at a dose of 0.001-100 mg/kg, preferably 8 mg/kg.
IT   UPIT 20200714
     ...
     1833154-USE; 2298889-CL 2298889-USE; 1494179-CL 1494179-USE; 123715-CL
     123715-USE; 970635-CL 970635-USE; 1074063-CL 1074063-USE; 2385244-CL
     ...
```

The workflow on this slide shows a **structure search** in combination with NPS (as shown for USPATFULL).

Beware of records where the dosage refers to other drugs than Glivec!

The Imatinib DCR-Number is DCR-123715.

Display records with D HIT, D KWIC or in your preferred display format.

Expand search to DWPI: chemical name + NPS

```
=> FIL WPINDEX

=>  S (GLIVEC OR GLIVAC OR GLEEVEC OR GLEEVAC OR (IMATINIB MES!LAT#) OR MITINAB
OR VEENAT OR (ST 571) OR ST571 OR ST-571 OR (STI 571) OR STI571 OR STI571 OR
57148B?) OR CGP57148B? OR CGP-57148B?)/BI,BIEX

L11        1668

=> S L11 AND 1-50MG/KG/DOS (S) (DOSAGE OR ADMINIST?)/BI,BIEX
     (S) (DAY OR DAILY)/BI,BIEX
L12          41
```

The workflow on this slide shows a **chemical name search** in combination with NPS (as shown for USPATFULL).

Search tip: Adding the Basic Index Extension (/BIEX) which includes the DWPI claims field (/CLM) may retrieve additional relevant results.

Expand search to DWPI: chemical name + NPS

```
=> FIL WPINDEX

=>  S (GLIVEC OR GLIVAC OR GLEEVEC OR GLEEVAC OR (IMATINIB MES!LAT#) OR MITINAB
OR VEENAT OR (ST 571) OR ST571 OR ST-571 OR (STI 571) OR STI571 OR STI571 OR
57148B?) OR CGP57148B? OR CGP-57148B?)/BI,BIEX

L11       1668

=> S L11 AND 1-50MG/KG/DOS (S) (DOSAGE OR ADMINIST?)/BI,BIEX
     (S) (DAY OR DAILY)/BI,BIEX
L12          41

=> S L11 (L) 1-50MG/KG/DOS (S) (DOSAGE OR ADMINIST?)/BI,BIEX
     (S) (DAY OR DAILY)/BI,BIEX
L13          37

=> S L11 (P) 1-50MG/KG/DOS (S) (DOSAGE OR ADMINIST?)/BI,BIEX
     (S) (DAY OR DAILY)/BI,BIEX
L14           7

=> S L11 (S) 1-50MG/KG/DOS (S) (DOSAGE OR ADMINIST?)/BI,BIEX
     (S) (DAY OR DAILY)/BI,BIEX
L15           5

=> S L11 (10A) 1-50MG/KG/DOS (10A) (DOSAGE OR ADMINIST?)/BI,BIEX
     (10A) (DAY OR DAILY)/BI,BIEX
L16           1
```

Distance drug name to NPS

The workflow on this slide shows a **chemical name search** in combination with NPS (as shown for USPATFULL).

Search tip: Adding the Basic Index Extension (/BIEX) which includes the DWPI claims field (/CLM) may retrieve additional relevant results.

Next steps: Continue in full text patent databases with chemical names and NPS.

Agenda

- Introduction and numeric retrieval
- Use Case: Claimed dosage information
  - US Full Texts
  - DWPI and further full text databases
- **Summary**

Key takeaways

- **NPS is a powerful tool** to find occurences of numeric values of up to **59 physico-chemical** properties in English language text fields
- **Automatic unit normalization makes** sure search units are independent from actual units used in publications
- STN's numeric search options provide **flexibility**, i.e. allow for exact value and range searching
- It is enhanced constantly, **please let us know** if you discover further properties you'd like to search on STNext

Contact Us

CAS **help@cas.org**
www.cas.org

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STNext®

FIZ Karlsruhe
Leibniz Institute for Information Infrastructure

CAS®
A DIVISION OF THE
AMERICAN CHEMICAL SOCIETY

Search tip 1 Specify unit in your query (1/2)

```
=> FIL USPATFULL
=> S (ALUMINA OR ((ALUMINIUM OR ALUMINIUM) (W) OXID#)) AND SURFACE AREA

L1      132766
```

Find patents describing aluminia with a surface area of 300-400 m2/g

Search tip 1 Specify unit in your query (1/2)

```
=> FIL USPATFULL
=> S (ALUMINA OR ((ALUMINIUM OR ALUMINIUM) (W) OXID#)) AND SURFACE AREA

L1      132766

=> S (ALUMINA OR ((ALUMINIUM OR ALUMINIUM) (W) OXID#)) (10W) 300-400 M**2/G /SSAM

L2          310 (ALUMINA OR ((ALUMINIUM OR ALUMINIUM) (W) OXID#)) (10W) 300-400
                M**2/G /SSAM
```

Easy to use: Specify the unit in your query and you do not need to look up the default unit.

List all properties with HELP NPS

Basic rules, exemplary:			
	CMOL	Mol/Liter	MOL/L
	DV	Pascal * Second	PA*S
	SAR	Square Meter	M**2
	°F and °C	can be used if specified or SET[1]	F or C

[1]Kelvin is default unit for TEMP

Search tip 1 Specify unit in your query (1/2)

```
=> FIL USPATFULL
=> S (ALUMINA OR ((ALUMINIUM OR ALUMINIUM) (W) OXID#)) AND SURFACE AREA

L1      132766

=> S (ALUMINA OR ((ALUMINIUM OR ALUMINIUM) (W) OXID#)) (10W) 300-400 M**2/G /SSAM

L2          310 (ALUMINA OR ((ALUMINIUM OR ALUMINIUM) (W) OXID#)) (10W) 300-400
                M**2/G /SSAM

=> D UNIT SSAM

SSAM                DEFAULT:    M**2/KG
SSAM                CURRENT:    M**2/KG
```

If unit is not specified in query, check default unit and posting:

Type D UNIT SSAM or HELP NPS to see the default unit(s).

The base unit for SSAM is m2/kg.

Base units need **not** be specified. Default units can be changed: **HELP SET UNIT**

Search tip 1 Specify unit in your query (1/2)

```
=> FIL USPATFULL
=> S (ALUMINA OR ((ALUMINIUM OR ALUMINIUM) (W) OXID#)) AND SURFACE AREA

L1      132766

=> S (ALUMINA OR ((ALUMINIUM OR ALUMINIUM) (W) OXID#)) (10W) 300-400 M**2/G /SSAM

L2          310 (ALUMINA OR ((ALUMINIUM OR ALUMINIUM) (W) OXID#)) (10W) 300-400
                M**2/G /SSAM

=> D UNIT SSAM

SSAM                DEFAULT:    M**2/KG
SSAM                CURRENT:    M**2/KG

=> S (ALUMINA OR ((ALUMINIUM OR ALUMINIUM) (W) OXID#)) (10W) 300000-400000/SSAM

L3          310 (ALUMINA OR ((ALUMINIUM OR ALUMINIUM) (W) OXID#)) (10W) 300000
                M**2/KG - 400000 M**2/KG /SSAM
```

If unit is not specified in query, check default unit and posting:

Search tip 1 Specify unit in your query (2/2)

```
=> D L2 1-10 KWIC=10

L2   ANSWER 1 OF 310  USPATFULL on STN
DETD   .  .  .  Mo:S ratio of sulfur to molybdenum, e.g. MoS.sub.2 supported on
       alumina, e g. activated alumina having a surface area of about 300
       square meters per gram or more, or silica gel, activated.  .  .

L2   ANSWER 2 OF 310  USPATFULL on STN
DETD   .  .  .  440 m2/g. In other embodiments, the porous support can compri
       alumina with a specific area of at least 260 m2/g. US Patent
       Application Publication 2016/0257583, Para. [0014].

L2   ANSWER 3 OF 310  USPATFULL on STN
DETD   .  .  .  of its pore distribution. The specific surface area of the
       alumina from which the support is prepared is generally between 50
       m2/g and 500 m2/g, preferably between 100 m2/g and 300.  .  .
...

L2   ANSWER 9 OF 310  USPATFULL on STN
CLM    What is claimed is:
 .  .  .  5. The catalyst according to claim 1, wherein the amorphous
       silica-alumina has the following properties: specific surface area of
       240-450 m2/g, pore volume of 0.4-0.9 mL/g.

L2   ANSWER 10 OF 310  USPATFULL on STN
SUMM   .  .  .  area of 5 to 50 square meters per gram to alumina monohydrate
       which having a surface area of more than 200 square meters per gram by
       ...
```

Exclude indexed open ranges (.EX), as this may help focus the search:

=> S … 300-400 M**2/G /SSAM**.EX**

Search tip 2 Search for the presence of a property

```
=> FIL FRFULL

=> S (LIPOSOM? OR (LIPID? (W) VESICL?)) (5A) LEN/PHP

L1        117 (LIPOSOM? OR (LIPID? (W) VESICL?)) (5A) LEN/PHP
```

Searching for a property in the **Physical Properties** (**/PHP**) field finds all property values and highlights them.

Search tip 2 Search for the presence of a property

```
=> FIL FRFULL

=> S (LIPOSOM? OR (LIPID? (W) VESICL?)) (5A) LEN/PHP

L1          117 (LIPOSOM? OR (LIPID? (W) VESICL?)) (5A) LEN/PHP

=> D 1-2 KWIC=20

L1     ANSWER 1 OF 117 FRFULL COPYRIGHT 2020 LNU on STN.
CLMEN  4. Dental cement according to one of the preceding claims, wherein the
       liposomes have a size of between 20 nm and 8000 nm.

CLMEN.  .  .
       method of preparing a dental cement as defined in one of claims 1 to 5
       comprising: with] the preparation of liposomes whose size is between
       20 nm and to 8000 nm, b.] the mixture of said liposomes with a dental
       cement in an amount of from.  .  .

L1     ANSWER 2 OF 117 FRFULL COPYRIGHT 2020 LNU on STN.
CLMEN  51. The method of any of claims 1 to 50, wherein the average size of the
       liposomes is from 95 to 120 nm.

DETDEN .  .  .
       liposome size shall be within the range of 50 nm to 200 nm, 60 nm to 180
       nm specially, as 70 to 165 nm. Optimally, the liposomes should be
       stable and have a diameter de 100 nm for permit sterilization by
       filtration practice.
```

Searching for a property in the **Physical Properties** (**/PHP**) field finds all property values and highlights them.

Search tip 3 Option: exclude indexed open ranges

```
=> FIL KRFULL

=> S 97-103 C/TEMP(3A)(MELTING(W)POINT OR MP)

L1       12714 97-103 C/TEMP(3A)(MELTING(W)POINT OR MP)

=> D 1-20 KWIC=6

L1     ANSWER 1 OF 12714 KRFULL COPYRIGHT 2020 LNU on STN.

DETD   (B-1) The melting point Tm is 110 °C or less, or a melting.

L1     ANSWER 6 OF 12714 KRFULL COPYRIGHT 2020 LNU on STN.

DETD .  .  . The polyester polyol has a melting point above about 40
       °C, even more preferably at.  .  .

L1     ANSWER 14 OF 12714 KRFULL COPYRIGHT 2020 LNU on STN.

DETD .  .  . high melting point component has a melting point of about 250
       °C or less as a conventional.  .  .

L1     ANSWER 16 OF 12714 KRFULL COPYRIGHT 2020 LNU on STN.

DETD   Is a wax having a melting point 40 °C or more, preferably
```

These answers might contain hits outside the area of interest.

Search tip 3 Option: exclude indexed open ranges

```
=> FIL KRFULL
=> S 97-103 C/TEMP(3A)(MELTING(W)POINT OR MP)
L1       12714 97-103 C/TEMP(3A)(MELTING(W)POINT OR MP)

=> S 97-103 C/TEMP.EX(3A)(MELTING(W)POINT OR MP)

L2        9681 97-103 C/TEMP.EX(3A)(MELTING(W)POINT OR MP)

=> D KWIC=4

L2     ANSWER 1 OF 9681 KRFULL COPYRIGHT 2020 LNU on STN.

DETD .  .  . fiber having an average melting point of 100 °C - 150 °C, which.  .  .
```

OPTION 1

Exclude indexed open ranges (.EX);
specific values and closed ranges retrieved

Search tip 3 Option: exclude indexed open ranges

```
=> FIL KRFULL
=> S 97-103 C/TEMP(3A)(MELTING(W)POINT OR MP)
L1       12714 97-103 C/TEMP(3A)(MELTING(W)POINT OR MP)

=> S 97-103 C/TEMP.EX(3A)(MELTING(W)POINT OR MP)

L2        9681 97-103 C/TEMP.EX(3A)(MELTING(W)POINT OR MP)

=> D KWIC=4

L2     ANSWER 1 OF 9681 KRFULL COPYRIGHT 2020 LNU on STN.

DETD .  .  . fiber having an average melting point of 100 °C - 150 °C, which.  .  .

=> S (97-103 C/TEMP) (NOT)(TEMP<97C OR TEMP>103C)(3A)(MELTING(W)POINT OR MP)

L3        4709 (97-103 C/TEMP) (NOTT)(TEMP<97C OR TEMP>103C)(3A)(MELTING(W)POIN
               T OR MP)

=> D KWIC=4

L3     ANSWER 1 OF 4709 KRFULL COPYRIGHT 2020 LNU on STN.

DETD .  .  .  butene-propylene copolymer (melting point 100 °C).
```

OPTION 2

Define the area of interest by subtracting all indexed properties outside the specified limit