

STN[®]

THE CHOICE OF PATENT EXPERTS[™]



A Closer Look at Chemical Business NewsBase (CBNB) on STN

September 2017



Agenda

- Introduction to CBNB
 - Value-add features
- Common search fields
- Case study
- Summary

What is CBNB?

- The Chemical Business NewsBase database (aka CBNB) collects news affecting the chemical industry, including
 - Company information
 - Products and production
 - Market information
 - Environmental aspects
 - Legal aspects and regulations
- Produced by Elsevier Engineering Information, Inc.

What is CBNB?

- CBNB covers timely information, such as
 - Financial and business data
 - Latest R&D news
 - Government legislation changes
 - Analysis of economic trends
- CBNB is updated daily
- Available on classic STN/STNnext and new STN

Sources for CBNB records

- Non-patent literature from about 150 journals and newspapers, including
 - Newspapers
 - Journals
 - Company and stockbroker reports
 - Press releases
 - Trade literature
 - ...

Sample CBNB record

L7 ANSWER 1 OF 1 CBNB COPYRIGHT 2017 EI on STN
AN 33(36):31428 CBNB Full-text
TI Evonik to acquire JM Huber's silica business.
SO SpecialChem Plastics and Elastomers Formulation (5 Sep 2017), (100-199 words)
Availability: Website: <http://www.specialchem4polymers.com>
DT Press Release; (Paragraph)
LA English
PY 2017
AB Evonik will complete the acquisition of US company JM Huber Corporation's silica business for \$630 M, as planned, in 2H 2017. The transaction closed on 1 Sep 2017 after approval by the relevant authorities. Contributions from the new business will therefore be included in Evonik's sales and earnings. The newly acquired business will be integrated into the Resource Efficiency Segment. The intensive planning work that has been done for the integration over the past few months will be put into action straight away. Original Source: BASF, 2017. Found on website: <http://www.specialchem4polymers.com>.
CC MS-19
Speciality chemicals
CO Evonik Industries; JM Huber
GT 2101: USA
CT mergers and acquisitions
CN silica
RN 7631-86-9
SIC 28195 Silicon and Inorganic Compounds



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Value-added features in CBNB

- Controlled indexing for
 - Company names
 - Chemical names
 - CAS Registry Numbers[®]
 - Classification codes
 - Standard Industrial Codes (SICs)
- Abstract

Company names in CBNB

=> E BASF/CO 25

| | | |
|-----|-------|-------------------------------|
| E1 | 3 | BASES/CO |
| E2 | 1 | BASE_LINE/CO |
| E3 | 39514 | --> BASF/CO |
| E4 | 16 | BASF (CHINA)/CO |
| E5 | 1 | BASF (INDIA)/CO |
| E6 | 2 | BASF (SCHWEIZ)/CO |
| E7 | 1 | BASF (SHANGHAI)/CO |
| E8 | 5 | BASF (THAI)/CO |
| E9 | 1 | BASF (US)/CO |
| E10 | 1 | BASF - COGNIS/CO |
| E11 | 7 | BASF 3D PRINTING SOLUTIONS/CO |
| E12 | 1 | BASF AFRICA/CO |

| | | |
|-----|-----|-----------------------------------|
| E13 | 2 | BASF AG/CO |
| E14 | 2 | BASF AGGENETICS/CO |
| E15 | 3 | BASF AGRI-PRODUCTION/CO |
| E16 | 15 | BASF AGRICULTURAL PRODUCTS/CO |
| E17 | 1 | BASF AGRICULTURAL SPECIALITIES/CO |
| E18 | 135 | BASF AGRO/CO |
| E19 | 2 | BASF AGRO FRANCE/CO |
| E20 | 1 | BASF AGRO RESEARCH/CO |
| E21 | 1 | BASF AGRO SOLUTIONS/CO |
| E22 | 1 | BASF AGROCHEMICAL PRODUCTS/CO |
| E23 | 2 | BASF AKTIENGESELLSCHAFT/CO |
| E24 | 3 | BASF AKZO NOBEL/CO |
| E25 | 15 | BASF AMERICA/CO |
| | | ... |

Company names in CBNB (cont.)

=> **S E3**

L1 39514 BASF/CO

=> **S E4**

L2 16 "BASF (CHINA)"/CO

=> **S E4 AND E3**

16 "BASF (CHINA)"/CO

39514 BASF/CO

L3 16 "BASF (CHINA)"/CO AND BASF/CO

Note: The CO field is word and phrase parsed, so searching BASF in the CO field will capture any CO term that includes the word BASF.

Company Name field vs. Basic Index text search

=> **S BASF**

45340 BASF

134 BASFS

L4 45342 BASF (BASF OR BASFS)

=> **S L1 NOT L4**

L5 0 L1 NOT L4

=> **S L4 NOT L1**

L6 5828 L4 NOT L1

Note: L1 = S BASF/CO. Every record with BASF in the Company Name field (CO) is captured with a free text search as well as other records that mention BASF but don't have BASF in the CO field.

Company Name field vs. Basic Index text search (cont.)

=> **D CO KWIC 1-3**

L6 ANSWER 1 OF 5828 CBNB COPYRIGHT 2017 EI on STN

CO Evonik Industries; JM Huber

AB. . . has been done for the integration over the past few months will be put into action straight away. Original Source: **BASF**, 2017. Found on website: <http://www.specialchem4polymers.com>.

L6 ANSWER 2 OF 5828 CBNB COPYRIGHT 2017 EI on STN

CO DuPont; Dow Chemical; DowDuPont

AB. . . as the stock market closes on 31 Aug 2017. The new firm would be the biggest chemical company worldwide after **BASF**, with a market value of \$150 bn. The combined entity will split into three independent firms within 18 months, focusing. . .

L6 ANSWER 3 OF 5828 CBNB COPYRIGHT 2017 EI on STN

TI Butanediol market 2017-2021 demand, trends, growth and manufacturers **BASF**, Dairen Chemical, LyondellBasell, Ashland report say a new research report at ReportsnReports.

Chemical names in CBNB

=> E SILICA/CN 25

| | | |
|-----|------|-------------------------------------|
| E1 | 4 | SILGARD/CN |
| E2 | 2 | SILIBININ/CN |
| E3 | 2527 | --> SILICA/CN |
| E4 | 6 | SILICA AEROGEL/CN |
| E5 | 1 | SILICA CATALYSTS/CN |
| E6 | 638 | SILICA COLLOIDAL/CN |
| E7 | 1 | SILICA DUST/CN |
| E8 | 14 | SILICA FIBRE/CN |
| E9 | 192 | SILICA GEL/CN |
| E10 | 165 | SILICA PRODUCTS/CN |
| E11 | 1 | SILICA ROCK/CN |
| E12 | 1 | SILICA RUBBER CARBON COMPOUND/CN |

| | | |
|-----|-----|-------------------------|
| E13 | 226 | SILICA SAND/CN |
| E14 | 1 | SILICA SAND PRODUCTS/CN |
| E15 | 1 | SILICA SILYLATE/CN |
| E16 | 1 | SILICA SOL/CN |
| E17 | 1 | SILICA SOLS/CN |
| E18 | 6 | SILICA WHITE/CN |
| E19 | 4 | SILICAS/CN |
| E20 | 1 | SILICATE PAINTS/CN |
| E21 | 1 | SILICATE PHOSPHOR/CN |
| E22 | 1 | SILICATE URETHANE/CN |
| E23 | 397 | SILICATES/CN |
| E24 | 1 | SILICENE/CN |
| E25 | 134 | SILICIC ACID/CN |

Chemical names in CBNB (cont.)

=> S E3

| | | |
|----|------|------------------------------------|
| | 2527 | SILICA/CN |
| | 4 | SILICAS/CN |
| L7 | 2531 | SILICA/CN ((SILICA OR SILICAS)/CN) |

=> S E4

| | | |
|----|---|---------------------|
| L8 | 6 | "SILICA AEROGEL"/CN |
|----|---|---------------------|

=> S E3 AND E4

| | | |
|----|------|-----------------------------------|
| | 2527 | SILICA/CN |
| | 4 | SILICAS/CN |
| | 2531 | SILICA/CN |
| | | ((SILICA OR SILICAS)/CN) |
| | 6 | "SILICA AEROGEL"/CN |
| L9 | 0 | SILICA/CN AND "SILICA AEROGEL"/CN |

Note: The CN field is phrase parsed only, so searching silica in the CN field will not capture any term that includes silica but has additional words in the chemical name. Think of CN as the 'complete name.'

Chemical Name field vs. Basic Index text search

=> **S SILICA**

6558 SILICA

1171 SILICAS

L10 6819 SILICA (SILICA OR SILICAS)

=> **S SILICA/CN**

2527 SILICA/CN

4 SILICAS/CN

L11 2531 SILICA/CN ((SILICA OR SILICAS)/CN)

=> **S L11 NOT L10**

L12 0 L11 NOT L10

=> **S L10 NOT L11**

L13 4288 L10 NOT L11

Chemical Name field vs. Basic Index text search (cont.)

=> **D KWIC 1-2**

L10 ANSWER 1 OF 4288 CBNB COPYRIGHT 2017 EI on STN

TI Cabot builds new world-class plant for fumed **silica**

AB US chemicals company Cabot Corporation is constructing a new global-scale CAB-O-SIL fumed **silica** facility in the US. Expected to become online in 2020, the new facility will be adjacent to its partner Dow. . .

CN **silica colloidal**

L10 ANSWER 2 OF 4288 CBNB COPYRIGHT 2017 EI on STN

AB Evonik will invest several tens of millions of euros to construct an additional complex for its pyrogenic **silica** production at its site in Antwerp, Belgium. Operations at the new complex will begin in summer-2019. According to Evonik, the world's pyrogenic **silica** market is rising at an average of 4%/y. The project will allow Evonik to support the integration of its European **silica** and silane products and to boost its production in Europe and for certain export markets. Original Source: Chimie Pharma Hebdo, . . .

CN **silica colloidal**; silane; **silica products**

Sample CBNB record

L7 ANSWER 1 OF 1 CBNB COPYRIGHT 2017 EI on STN
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LA English
PY 2017
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CC MS-19
Speciality chemicals
CO Evonik Industries; JM Huber
GT 2101: USA
CT mergers and acquisitions
CN silica
RN **7631-86-9**
SIC 28195 Silicon and Inorganic Compounds

CAS Registry Numbers in CBNB

=> **S 7631-86-9/RN**

L14 0 7631-86-9/RN

=> **E 7631-86-9/RN**

**** START OF FIELD ****

E3 0 --> 7631-86-9/RN

**** END OF FIELD ****

Note: There is no RN search field in CBNB. Search CAS Registry Numbers in the basic index.

=> **E 7631-86-9**

E1 1 7630953/BI

E2 7 7631/BI

E3 3497 --> 7631-86-9/BI

E4 33 7631-90-5/BI

E5 189 7631-99-4/BI

E6 1 7631090/BI

E7 96 763113-22-0/BI

E8 4 763180/BI

E9 1 7631A/BI

E10 9 7632/BI

E11 142 7632-00-0/BI

E12 116 7632-05-5/BI

=> **S E3**

L15 3497 7631-86-9/BI

Basic Index Search in CBNB

- Title
- Abstract
- Classification code
- Corporate name
- Geographical term
- Controlled term
- Chemical name
- CAS Registry Numbers



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CBNB Case Study

Search Question:

Search for law suits between BASF and Umicore pertaining to lithium ion batteries containing Nickel-Manganese-Cobalt (NMC) cathode material. Identify the relevant patents and get further information on BASF's activities in that field.

Search Strategy in CBNB for getting an overview

- Search BASF and Umicore in the /CO field
- Search keywords for battery concepts
- Use CBNB Classification Codes (/CC) to limit search to legal proceedings
 - LEGAL ASPECTS
 - PERMITS AND PATENTS

BASF vs. Umicore Battery Search using STNext

=> S BASF/CO AND UMICORE/CO

| | | |
|-----|-------|------------------------|
| | 39514 | BASF/CO |
| | 260 | UMICORE/CO |
| L16 | 31 | BASF/CO AND UMICORE/CO |

=> S NICKEL MANGANESE COBALT AND LITHIUM ION BATTER?

| | | |
|-----|------|---|
| | 7069 | NICKEL |
| | 19 | NICKELS |
| | 7070 | NICKEL (NICKEL OR NICKELS) |
| ... | | |
| | 2171 | LITHIUM ION BATTER? (LITHIUM(W)ION(W)BATTER?) |
| L17 | 16 | NICKEL MANGANESE COBALT AND LITHIUM ION BATTER? |

BASF vs. Umicore Battery Search using STNext (cont.)

=> **S LEGAL ASPECTS/CC OR PERMITS AND PATENTS/CC**

40571 LEGAL/CC

40571 ASPECTS/CC

40571 LEGAL ASPECTS/CC ((LEGAL(S)ASPECTS)/CC)

154659 PERMITS

151321 PATENTS/CC

L18 183902 LEGAL ASPECTS/CC OR PERMITS AND PATENTS/CC

=> **S L16 AND L17 AND L18**

L19 6 L16 AND L17 AND L18

=> **D KWIC 1-2**

BASF vs. Umicore Battery Search (cont.)

L19 ANSWER 1 OF 6 CBNB COPYRIGHT 2017 EI on STN

AB. . . lawsuit in Delaware against Umicore for the production, use, distribution and marketing of cathodic materials. The materials are based on nickel-manganese-cobalt utilized for lithium-ion batteries in the US. Original Source: Chimie Pharma Hebdo, Website:

<http://www.industrie.com/chimie/>, Copyright ETAI Information 2017.

CC MS-15; LA-00; LA-40 Electronics industry; Legal aspects; Permits and patents

CO BASF; Umicore

L19 ANSWER 2 OF 6 CBNB COPYRIGHT 2017 EI on STN

AB Umicore, Argonne National Laboratory, and BASF have agreed to settle a patent dispute over the nickel-manganese-cobalt (NMC) cathode materials used in lithium-ion batteries. Argonne and BASF have allowed Umicore a license to produce and market NMC materials in the US. The NMC, which. . .

CC MS-15; LA-00; LA-40 Electronics industry; Legal aspects; Permits and patents

CO Umicore; BASF

Search Strategies in CBNB and INPAFAMDB for more information

- Spotting patent numbers of infringed patents in CBNB documents
- Search patent numbers in IMPAFAMDB for more information
- Search for other patenting activities of BASF in the field of NMC electrodes in INPAFMADB
- Use information from the patent documents for further searches in CBNB

BASF vs. Umicore: relevant patents in CBNB record

L19 ANSWER 3 OF 6 CBNB COPYRIGHT 2017 EI on STN

AB. . . their pending patent disputes with Umicore. Umicore is now licensed to make, use, sell, offer to sell, distribute and import nickel-manganese-cobalt (NMC) cathode material for lithium ion batteries in the US under BASF's and Argonne's US Patent Nos 6,677,082; 6,680,143; 7,135,252; and 7,468,223. BASF and Argonne are dismissing. . .

CC MS-12; MS-15; LA-00; LA-40

Metals industries; Electronics industry; Legal aspects; Permits and patents

CO BASF; Umicore

BASF vs. Umicore : the relevant patent(s) in INPAFAMDB

=> FIL INPAFAMDB

=> S US6677082/PN OR US7135252/PN OR US7468223/PN

1 US6677082/PN

1 US7135252/PN

1 US7468223/PN

L20 1 US6677082/PN OR US7135252/PN OR US7468223/PN

=> D BIB

BASF vs. Umicore : the relevant patent(s) in INPAFAMDB

L20 ANSWER 1 OF 1 INPAFAMDB COPYRIGHT 2017 EPO/FIZ KA on STN

AN 33318272 INPAFAMDB EDF 20070301 UPFB 20150903 UWF 201647

TI Lithium metal oxide electrodes for lithium cells and batteries.

...

PAS UNIV CHICAGO, US

- UCHICAGO ARGONNE LLC, US

PI US 20020136954 A1 20020926

US 6677082 B2 20040113

US 20020114995 A1 20020822

US 6680143 B2 20040120

US 20040081888 A1 20040429

US 7135252 B2 20061114

US 20060099508 A1 20060511

US 7468223 B2 20081223

BASF patents for particular Battery technology

=> S BASF/PA AND H01M0004/CPC AND NICKEL AND MANGANESE AND COBALT

L21 13 BASF/PA AND H01M0004/CPC AND NICKEL AND MANGANESE AND COBALT

=> ANALYZE AY 1- L21

L22 ANALYZE L21 1- AY : 7 TERMS

=> D 1-

L22 ANALYZE L21 1- AY : 7 TERMS

| TERM # | # OCC | # DOC | % DOC | AY |
|--------|-------|-------|-------|------|
| 1 | 16 | 4 | 30.77 | 2014 |
| 2 | 12 | 5 | 38.46 | 2015 |
| 3 | 12 | 1 | 7.69 | 2009 |
| 4 | 11 | 1 | 7.69 | 2011 |
| 5 | 5 | 1 | 7.69 | 2002 |
| 6 | 2 | 2 | 15.38 | 2016 |
| 7 | 1 | 1 | 7.69 | 2001 |

***** END OF L22***

Back to CBNB: Further information on BASF's activities in NMC battery technology

- What is the ownership of the Argonne technology with respect to BASF?
- What are other activities of BASF?

Ownership of infringed NMC patent – using CBNB

=> **FIL CBNB**

=> **S BASF/CO AND ARGONNE AND (LICENC? OR LICENS?)**

L24 19 BASF/CO AND ARGONNE AND (LICENC? OR LICENS?)

=> **D 19 ALL**

L24 ANSWER 19 OF 19 CBNB COPYRIGHT 2017 EI on STN

AN 25(22):32225 CBNB [Full-text](#)<<LOGINID::20170914>>

TI Argonne's lithium-ion battery technology to be commercialised by BASF.

...

DT Press Release; (Overview)

LA English

PY 2009

AB The US Department of Energy's (DOE) Argonne National Laboratory (Argonne) and BASF, have signed a world-wide licensing agreement to mass produce and market Argonne's patented composite cathode materials to manufacturers of advanced lithium-ion batteries. BASF will conduct further lithium-ion battery material application development...

Other activities of BASF in NMC battery technology

=> **FIL CBNB**

=> **S (BASF NOT UMICORE)/CO AND (ELECTRODE? OR CATHODE?) AND (NICKEL AND MANGANESE AND COBALT)**

...

L25 21 (BASF NOT UMICORE)/CO AND (ELECTRODE? OR CATHODE?) AND (NICKEL AND MANGANESE AND COBALT)

=> **D ALL 4**

L25 ANSWER 4 OF 21 CBNB COPYRIGHT 2017 EI on STN

TI BASF and TODA KOGYO CORP close agreement for joint venture specializing in cathode materials for lithium-ion batteries.

...

PY 2015

AB On 24 Feb 2015, BASF and TODA KOGYO CORP formally established "BASF TODA Battery Materials LLC" with the closing of their joint venture agreement announced in Oct 2014. The new company will provide cathode active materials (CAM) for lithium-ion ...

Also other Ownership of infringed NMC patent – using CBNB

=> **D L25 6 KWIC**

L25 ANSWER 6 OF 21 CBNB COPYRIGHT 2017 EI on STN

TI BASF begins commercial production of lithium iron phosphate cathode materials in Germany.

AB BASF has started producing lithium iron phosphate or lithium ferrophosphate (LFP) cathode materials in Weimar, Germany, utilizing LFP precursors from its headquarters site in Ludwigshafen. The rotary kiln technology and systems firm. . . facility under BASF's control and supervision. LFP materials are used to manufacture lithium-ion batteries (LiBs). The firm's LiB offerings include nickel cobalt manganese (NCM) produced at its Elyria, OH, US, site. The company's HED LFP is produced using a proprietary method developed by. . .

CO BASF; Clariant; LiFePO₄+C Licensing

CN lithium iron phosphate; lithium ion; batteries; nickel; cobalt; manganese

Analyzing in CBNB documents on NMC battery technology

=> **D L25 6 KWIC**

L25 ANSWER 6 OF 21 CBNB COPYRIGHT 2017 EI on STN

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CO BASF; Clariant; LiFePO₄+C Licensing

CN lithium iron phosphate; lithium ion; batteries; nickel; cobalt; manganese

CBNB gives trend information

- In which countries does NMC battery technology play a role?
- Is this technology still of interest?

Analyzing Documents on NMC technology

=> **FIL CBNB**

=> **S (ELECTRODE? OR CATHODE?) AND ((NICKEL AND MANGANESE AND COBALT) OR NMC)**

L26 80 (ELECTRODE? OR CATHODE?) AND ((NICKEL AND MANGANESE AND COBALT)OR NMC)

=> **ANALYZE GT PY 1- L26**

L27 ANALYZE L26 1- GT PY : 23 TERMS

Analyzing Documents on NMC technology

=> D 1- GT

L27 ANALYZE L26 1- GT PY : 23 TERMS

| TERM # | # OCC | # DOC | % DOC | GT PY |
|--------|-------|-------|-------|-------------|
| 1 | 35 | 35 | 43.75 | JAPAN |
| 2 | 25 | 25 | 31.25 | USA |
| 9 | 6 | 6 | 7.50 | GERMANY |
| 10 | 5 | 5 | 6.25 | SOUTH KOREA |
| 12 | 4 | 4 | 5.00 | WORLD |
| 15 | 2 | 2 | 2.50 | CHINA |
| 19 | 1 | 1 | 1.25 | ASIA |
| 20 | 1 | 1 | 1.25 | BELGIUM |
| 21 | 1 | 1 | 1.25 | NETHERLANDS |

Analyzing Documents on NMC technology

=> D 1- PY

L27 ANALYZE L26 1- GT PY : 23 TERMS

| TERM # | # OCC | # DOC | % DOC | GT PY |
|--------|-------|-------|-------|-------|
| 3 | 15 | 15 | 18.75 | 2010 |
| 4 | 11 | 11 | 13.75 | 2016 |
| 5 | 10 | 10 | 12.50 | 2012 |
| 6 | 8 | 8 | 10.00 | 2009 |
| 7 | 8 | 8 | 10.00 | 2014 |
| 8 | 8 | 8 | 10.00 | 2015 |
| 11 | 5 | 5 | 6.25 | 2017 |
| 13 | 4 | 4 | 5.00 | 2008 |
| 14 | 3 | 3 | 3.75 | 2011 |

Summary

- CBNB is an important database when looking for market information
- CBNB is a very timely, up-to-date database
- CBNB can be used to make important company decisions, including licensing, potential partners, industry trends, etc.



For more information ...

CAS

help@cas.org

Support and Training:

www.cas.org

FIZ Karlsruhe

helpdesk@fiz-karlsruhe.de

Support and Training:

www.stn-international.de