



ACS National Meeting – Division of Chemical Information

What are Chemists Looking for?
An Analysis of Search Engine Queries

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ChemIndustry.com

Portals on the Internet

- Post-browser Internet development centered on general interest portals – *Yahoo, Netscape etc.*
- Internet search was the primary feature
- Later additions: news, weather, stocks, travel etc.
- Technical portals serving chemistry and other communities follow the same pattern



[Introducing
Yahoo! Japan](#)

ONLY A
FEW DAYS
LEFT

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[Web Launch](#)

Search

[Options](#)

- **[Arts](#)**
[Humanities](#), [Photography](#), [Architecture](#), ...
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[Directory](#), [Investments](#), [Classifieds](#), [Taxes](#), ...
- **[Computers and Internet \[Xtra!\]](#)**
[Internet](#), [WWW](#), [Software](#), [Multimedia](#), ...
- **[Education](#)**
[Universities](#), [K-12](#), [Courses](#), ...
- **[Entertainment \[Xtra!\]](#)**
[TV](#), [Movies](#), [Music](#), [Magazines](#), ...
- **[Government](#)**
[Politics \[Xtra!\]](#), [Agencies](#), [Law](#), [Military](#), ...
- **[Health](#)**
[Medicine](#), [Drugs](#), [Diseases](#), [Fitness](#), ...
- **[News \[Xtra!\]](#)**
[World \[Xtra!\]](#), [Daily](#), [Current Events](#), ...
- **[Recreation](#)**
[Sports \[Xtra!\]](#), [Games](#), [Travel](#), [Autos](#), ...
- **[Reference](#)**
[Libraries](#), [Dictionaries](#), [Phone Numbers](#), ...
- **[Regional](#)**
[Countries](#), [Regions](#), [U.S. States](#), ...
- **[Science](#)**
[CS](#), [Biology](#), [Astronomy](#), [Engineering](#), ...
- **[Social Science](#)**
[Anthropology](#), [Sociology](#), [Economics](#), ...
- **[Society and Culture](#)**
[People](#), [Environment](#), [Religion](#), ...

[Text-Only Yahoo](#) ~ [Contributors](#)



Calendar



Messenger



Check Email

Yahoo! Mail

free email - you@yahoo.com

YAHOO!

All of Yahoo! at a click!
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What's New



Personalize



Help

new! **Y! Education**
create a virtual classroom

 Search [advanced search](#)

new! **Yahoo! Fantasy Football** - sign up today for the 2001 season **new!**

Shop [Auctions](#) · [Autos](#) · [Classifieds](#) · [Shopping](#) · [Travel](#) · [Yellow Pgs](#) · [Maps](#) **Media** [Finance/Quotes](#) · [News](#) · [Sports](#) · [Weather](#)
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Personal [Addr Book](#) · [Briefcase](#) · [Calendar](#) · [My Yahoo!](#) · [PayDirect](#) **Fun** [Games](#) · [Kids](#) · [Movies](#) · [Music](#) · [Radio](#) · [TV](#) [more...](#)

Yahoo! Auctions

 - Bid, buy, or sell anything!**Categories**

· [Antiques](#)
· [Cameras](#)
· [Coins](#)
· [Comic Books](#)

· [Computers](#)
· [Electronics](#)
· [Sports Cards](#)
· [Stamps](#)

Items

· [WWF](#)
· [PlayStation 2](#)
· [MP3 Players](#)
· [Flat Panels](#)

· [Tiger Woods](#)
· [Dale Earnhardt](#)
· [State Quarters](#)
· [Palm Pilots](#)

Got Something to Sell? [Auction it Now!](#)

In the News

· [Retired U.S. Air Force sergeant charged with spying](#)
· [Utah polygamist gets five years](#)
· [Firestone settles Texas lawsuit](#)
· [Microsoft case gets new judge](#)
· [McDonald's sued for game fraud](#)

[more...](#)

Marketplace

· [Y! Shopping](#) - [50% off select items at Godiva](#)
· [Y! Autos](#) - new car pricing, photos, and specs
· [Y! Store](#) - build an online store in 10 minutes
· [Y! Travel](#) - Save up to \$400 on [Disney Vacations!](#)

Broadcast Events

· [Finance Vision](#) - live market news
· 1pm ET [PGA: NEC Invitational](#)

[more...](#)

Inside Yahoo!

· [Movies](#) - [Jay and Silent Bob](#), [Bubble Boy](#), [Ghosts of Mars](#)
· [Make Yahoo! your home page](#)
· [Yahoo!igans!](#) - for kids
· [Y! Photos](#) - post your pix online
· [Y! Games](#) - spades, canasta, chess, dominoes, euchre, hearts

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[Literature](#), [Photography](#)...

Business & Economy

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News & Media

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Social Science

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Americas : [Argentina](#) - [Brazil](#) - [Canada](#) - [Chinese](#) - [Mexico](#) - [Spanish](#)

U.S. Cities : [Atlanta](#) - [Boston](#) - [Chicago](#) - [Dallas/FW](#) - [LA](#) - [NYC](#) - [SF Bay](#) - [Wash. DC](#) - [more...](#)

More Yahoo!'s

Guides : [Autos](#) - [Buzz Index](#) - [Careers](#) - [Health](#) - [Living](#) - [Outdoor](#) - [Pets](#) - [Real Estate](#) - [Yahoo!igans!](#)

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- Comprehensive search and referral service for the chemical industry
- Match suppliers and consumers of goods, services and information
- Industry-specific, professionally edited, multilingual,
- Employ advanced search technology



ChemIndustry and Portals

- We are a search engine, not a portal
- We provide search services to chemistry portals
- We help users find portals.... 661 chemistry portals currently listed in our database
- Portals aggregate communities by subject, region, job function



welcome >



August 23, 2001

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SEARCH >

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 World of Chemistry (Powered by ChemIndustry.com)

QUICK FIND >

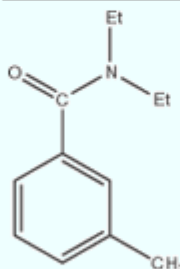
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Welcome to chemistry.org.

MOLECULE OF THE WEEK >



N,N-diethyl-*m*-toluamide (DEET) is the active ingredient in many insect repellents and has a wide spectrum of activity against mosquitoes, ticks, chiggers, deerflies, gnats and fleas.

MARK YOUR CALENDAR >

- **August 20** chemistry.org, version 2 launches. ACS Executive Director [John K. Crum](#) describes the new site.
- **August 26-30** [ACS Fall National Meeting](#) convenes in Chicago, IL.
- **August 31** Deadline for free employer job postings on [JobSpectrum.org](#).

MY-chemistry.org

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HEADLINES >

[Plastic Recycling in Sacramento, Calif., Area Becomes Numbers Game](#)
The Sacramento Bee
Aug 22, 11:50 PM

[Chemical Firms Propose Southeast Houston Rail Line to Create Competition](#)
Houston Chronicle
Aug 22, 09:10 AM

[Chemists report high employment, salary increases in 2001](#)
American Chemical Society News



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美国化学工业网



(英文关键字搜索)

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余姚地区	汕头地区	北京地区
远东地区	顺德地区	燕山石化
香港地区	国内部分厂家	特约行情

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- fds (2001-08-23)
- 辽宁青工对外贸易公司 (2001-08-23)
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[农用化学品及化肥](#) (699 sites)

Viewing sites 1 thru 10

行业 国家和地区 分类

1. [威克高分子化工](#) 生产商 德国

本公司将于2001年4月24-26日参加在德国法兰克福举办的国际纺织和无纺织技术交易会，展位号码TECHTEXTIL01。

URL: <http://www.wacker-polymer-systems.com> in English (Cost to advertiser: \$0.25)

2. [吉尔斯化工](#) 生产商 美国

吉尔斯化工公司生产硫酸钠、硫酸镁和泻盐，主要在美国和加拿大销售。

URL: <http://www.gileschemical.com> in English (Cost to advertiser: \$0.25)

3. [A. H. Marks公司](#) 生产商 英国

A. H. Marks公司是英国最大的一家私人所有的化工生产公司,该公司生产多种专用有机化工产品。

URL: www.ahmarks.com in English in [Categories](#)

23 August 2001

Dangerous Goods
Control Systems
for International
Sea Transport

Internet
Dangerous Goods
Booking System

Need DGSA
Service In
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[Major regulatory meetings related to dangerous goods scheduled for 2001](#)

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[International Organisation](#)
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DG Training

Companies and organisations offering training courses covering the transport of dangerous goods by:
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The EDI Page

[Dangerous goods notification messages and implementation guides](#)
[BAPLIE message](#)
[MOVINS message](#)

Codecheck

FREE IMDG Code compliance check with [Amendment 29](#) and [Amendment 30](#) data

Username:

Password:



[New User](#) Register to obtain your username and password

Want a CODECHECK link from your site? Become a



and add CODECHECK functionality to your website

Search the Web

Search ChemIndustry.com:



The Search Engine of
the Chemical Industry

Google

Go

Search Engines and Directories

- Search Engines use web crawlers to perform full text search of web pages – user can search on a keyword
- Directories use editors to index and categorize web pages – user can “drill down” through categories and browse
- ChemIndustry combines Directory with Search Engine
 - Professional chemists and engineers select and index relevant web sites for inclusion in the database (currently > 45,000)
 - The full text of every page of each site is read and indexed (currently > 5.0 million)

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[chemical names](#)

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PROCESS EQUIPMENT

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Equipment Search

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What's New

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[ChemIndustry.com Top 10](#)

search terms, categories, and

Source of Data

- Data drawn from 12 months of web server log files of www.chemindustry.com
- Currently conduct approximately 20 -25,000 queries per day
- Users:
 - 65% from Industry
 - 13% Academia
 - 3% Government
 - 19% Other

Category Searches

- 43% of searches are category based - aka “drill down” or “category browsing”
- Most Popular Categories (July)
 - Chemical manufacturers
 - Pharmaceuticals, bio-chemicals & intermediates
 - Job banks, recruiting & job seeking
 - Chemical distributors & dealers
 - Periodic tables
 - Polymers, plastics & additive
 - Petrochemicals & hydrocarbons
 - Agrochemicals
 - Chemical names, properties & structures
 - Oil & gas, refineries

Comments on Category Searches

- Popular Categories Reflect:
 - User Interests
 - Referring Affiliates
- ChemIndustry “pushes” users to higher revenue categories
- Traditional non-web functions moving to the web
 - Job banks
 - Buyer’s Guides



Full-text Searches

- 57% of Searches are Full-text Searches
- Most Popular Chemicals (July)
 - Soda Ash
 - Titanium dioxide
 - Citric acid
 - Carbon black
 - Chlorine
 - Red phosphorus
 - Sulfuric acid
 - Sodium hydroxide
 - Ethanol
 - Potassium nitrate



Full-text Searches

- Most Popular Non-chemical Search Terms (July)
 - Jobs
 - MSDS
 - Chemical databases
 - Periodic table
 - Chemical reactions
 - Pumps
 - Chemical engineering
 - Valves
 - Software
 - Process equipment

Keyword Summary

Feb-28-2001

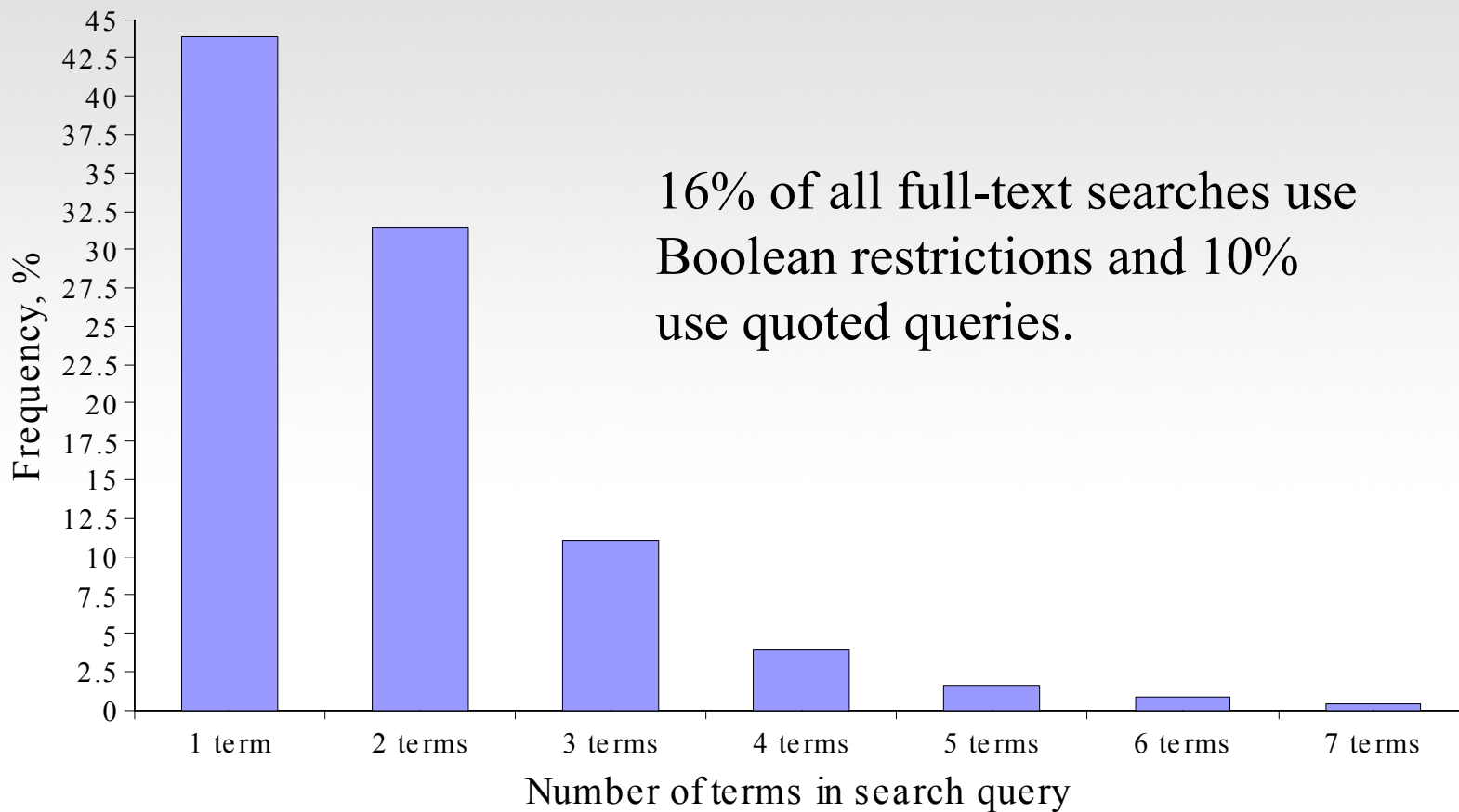
Top 20 Queries @ 10:45 am

Keyword	Number of Queries
"clean in place"	136
rojo de metilo	72
vinylpyridine	43
uvitex ob	40
"enthalpy of formation"	26
soda ash	26
jobs	25
lycra	20
chemical engineer	18
carnauba wax	17
pigment	17
pumps	15
phenol	15
msds	14
ethylene glycol	14
polymers	14
luminescent and pigment	13
fine chemicals	13
pharmaceuticals	13
manufacturing of schedule I controlled substances	12

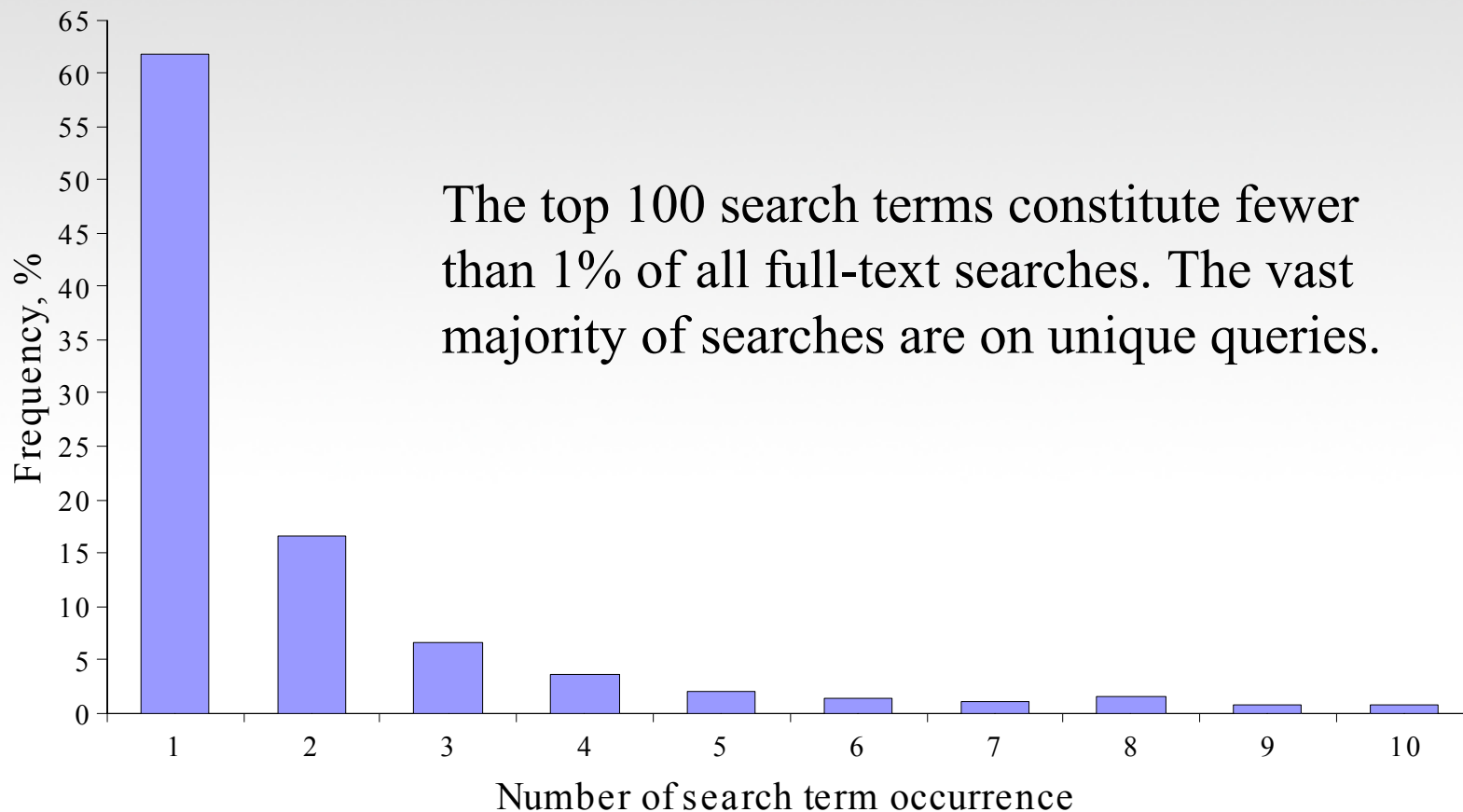
Keyword Summary for Feb-28-2001

transition metal catalysed diboration	1
catalyst	1
+"liquid nitrogen"+safety +storage	1
inorganic chemisty on line	1
ceramics	1
chemical alternatives	1
DXM	1
cuhem	1
(S)-acetyl-aminomethyl-oxirane	1
bolsa	1
chemical reactions	1
butylhydroxytoluole	1
+dnase +usb	1
process engineer	1
oxyvinyls	1
polyol*manufacturer*	1
reverse osmosis	1
luminescent+europium	1
corning Megapure	1
orbis	1

Frequency of terms



Frequency of occurrences





Comments on Full-text Search

- Users need to browse – 43% category search
- 25% of full text searches are >2 terms
- 30% of multi-term full text searches use some Boolean tools
- “Popular Searches” < 2% of total
 - Top 100 search terms < 1% of total full text search
- Need to educate

Conclusion

- What are chemists looking for?
 - As many different things as there are chemists!