



Chemistry in Derwent World Patents Index[®] (DWPI)

October 2009



THOMSON REUTERS

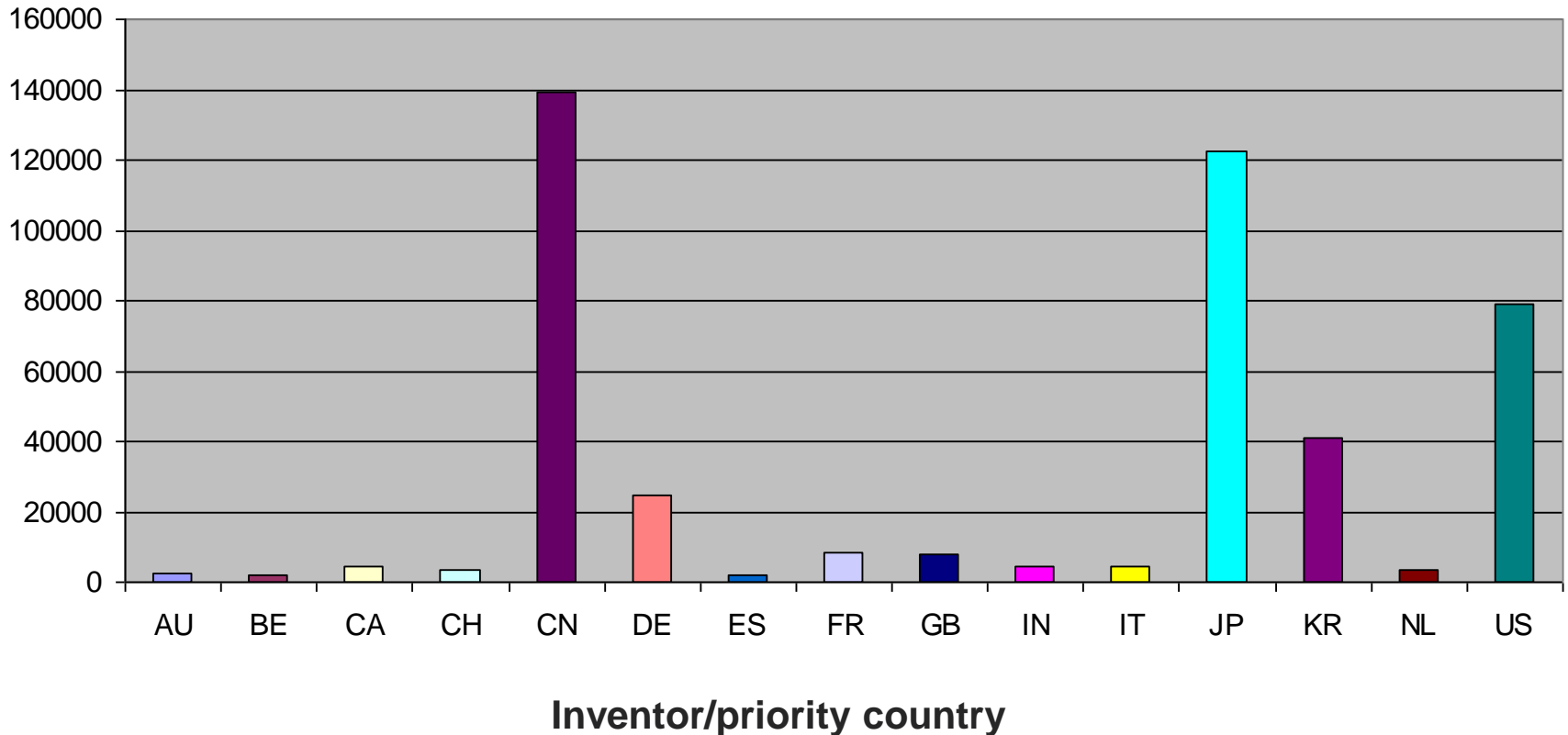
Overview

- Chemistry coverage in patents
- Content of *Derwent World Patents Index (DWPI)*
- *DWPI* Chemistry Indexing systems

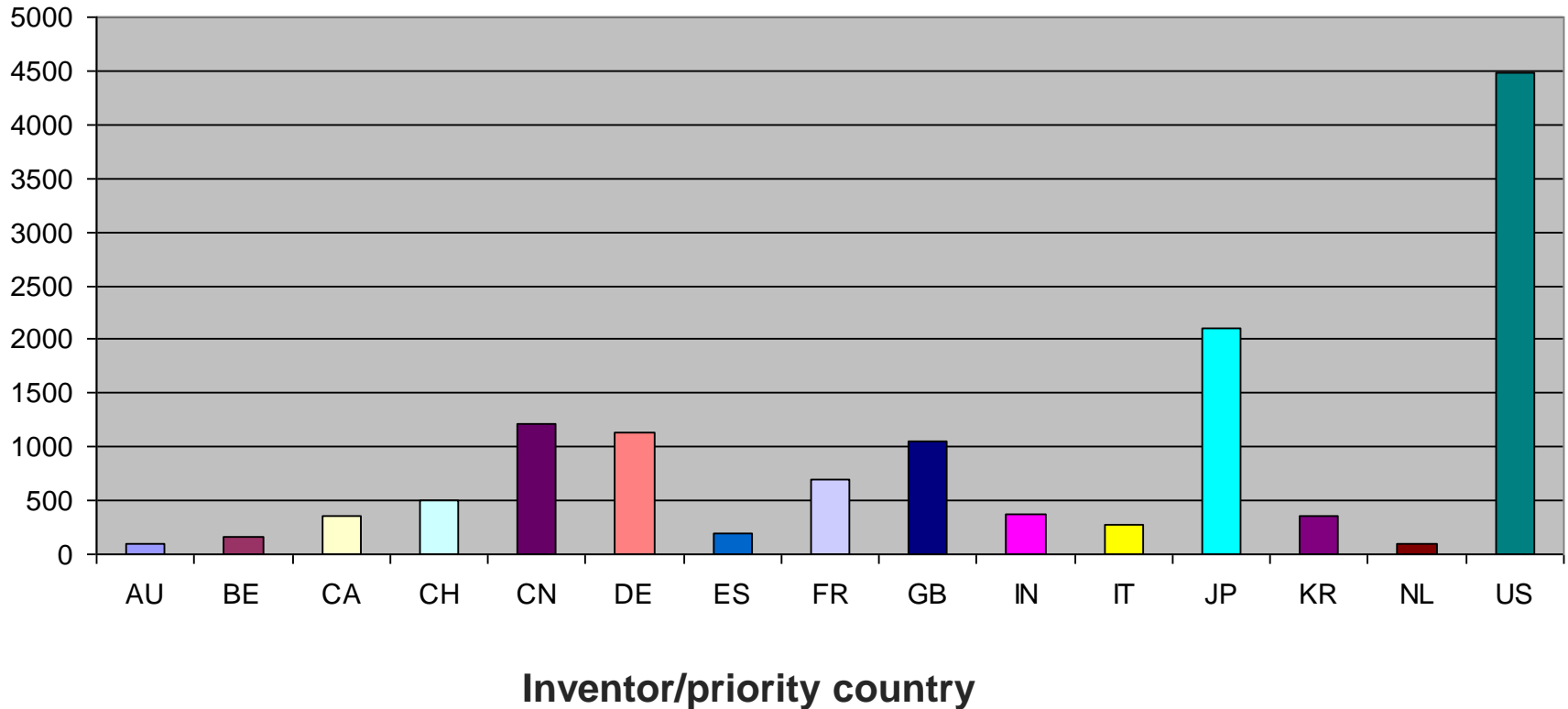
Chemical industry patent statistics for 2008

Technology area	Patents
Polymers	219,181
Pharmaceuticals	79,814
Agrochemicals	12,557
Biotechnology	85,167
General chemicals	42,386
Dyes, fabrics, paper	29,132
Printing, coating & photographic	24,307
Petroleum	20,109
Chemical Engineering	33,630
Nucleonics, explosives	3,936
Refractories, glass, ceramics	93,970
Metallurgy	30,789
Catalysts	7,642

Chemical industry patents 2008



'New molecule' patents 2008



DWPI – a unique resource

- **Coverage** of 41 authorities provides comprehensive geographic coverage of a company's portfolio
- **Access** to 18.25 million inventions and 39.7 million individual patents
- **One record per invention** in *DWPI* with **comprehensive patent family** outlining global protection of the invention
- **Value-add titles and abstracts** written by degree qualified engineers and scientists
- **Unique indexing systems** consistently applied that categorizes inventions and assists in retrieval (*DWPI* Manual Codes and deep indexing)
- **Fully indexed** value-add records loaded to *DWPI* within an average of 13 days of patent publication



(12) 按照专利合作条约所公布的国际申请

(19) 世界知识产权组织
国际局



(43) 国际公布日
2007年8月9日 (09.08.2007)

(10) 国际公布号
WO 2007/087741 A1

(51) 国际专利分类号:
C08F 2/38 (2006.01) C08F 36/06 (2006.01)
C08F 36/04 (2006.01) C08F 36/08 (2006.01)

房山区燕山凤凰亭路15号, Beijing 102500 (CN)。闫冰(YAN, Bing) [CN/CN]; 中国北京市房山区燕山凤凰亭路15号, Beijing 102500 (CN)。张杰(ZHANG, Jie) [CN/CN]; 中国北京市房山区燕山凤凰亭路15号, Beijing 102500 (CN)。赵霞(ZHAO, Xia) [CN/CN]; 中国北京市房山区燕山凤凰亭路15号, Beijing 102500 (CN)。王雪(WANG, Xue) [CN/CN]; 中国北京市房山区燕山凤凰亭路15号, Beijing 102500 (CN)。

(21) 国际申请号: PCT/CN2007/000226

(22) 国际申请日: 2007年1月22日 (22.01.2007)

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(26) 公布语言: 中文

(30) 优先权:
200610002311.7
2006年1月26日

(74) 代理人: 中国国际贸易促进委员会专利商标事务所 (CCPIT PATENT AND TRADEMARK LAW OFFICE), 中国北京市东城区广外大街9号五通源北楼

WO 2007/087741

PCT/CN2007/000226

权利要求

- 一种共轭二烯烃均聚工艺中的凝胶抑制方法, 其特征在于: 在共轭二烯烃均聚工艺中采用凝胶抑制剂, 该凝胶抑制剂为以其总重量计包含 5-27% 重量的 1, 2-丁二烯的烃类混合物。
- 根据权利要求 1 的方法, 其中所述的凝胶抑制剂选自以下组中的物质: 碳四抽余物、碳四抽余物的加氢产物、具有与碳四抽余物及其加氢产物相同组成的烃类混合物、及其任意组合。
- 根据权利要求 2 的方法, 其中所述的凝胶抑制剂以其总重量计 1, 2-丁二烯含量为 5% 重量至 25% 重量; 其中所述的加氢产物以其总重量计炔烃含量低于 0.1% 重量。
- 根据权利要求 1 或 2 的方法, 其中所述的凝胶抑制剂, 以其总重量计, 包含以下组分:

组分	含量, 重量%
顺、反丁烯-2	65~85
正、异丁烯	1~5
C3-C5 烷烃	2~10
1, 3-丁二烯	5~10
1, 2-丁二烯	5~27
C3-C5 炔烃	0~2, 和
C3 和 C5 烯烃	0~2.

- 根据权利要求 1 或 2 的方法, 其中所述的共轭二烯烃均聚工艺为钕系阴离子溶液聚合, 优选所述的溶液聚合包括如下步骤: 在惰性气体环境下采用有机钕为引发剂, 路易斯碱为添加剂, 加入所述凝胶抑制剂和反应单体, 在溶剂中进行共轭二烯烃均聚反应。

(71) 申请人 (对除美国外的所有指定国): 中国石油化工有限公司 (CHINA PETROCHEMICAL CORPORATION) [CN/CN]; 中国北京市房山区燕新东街甲6号, Beijing 100029

(72) 发明人: 及

(75) 发明人/申请人 (仅对美国):
Aimin) [CN/CN]; 中国北京市房山区燕新东街甲6号, Beijing 102500 (CN)。王世朝 [CN/CN]; 中国北京市房山区燕山凤凰亭路15号, Beijing 102500 (CN)。李传清(LI, Chu) [CN/CN]; 中国北京市房山区燕山凤凰亭路15号, Beijing 102500 (CN)。李伟(LI, Wei) [CN/CN]; 中国北京市房山区燕山凤凰亭路15号, Beijing 102500 (CN)。刘慧玲(LIU, Hailing) [CN/CN]; 中国北京市房山区燕山凤凰亭路15号, Beijing 102500 (CN)。孙文娟 [CN/CN]; 中国北京市房山区燕山凤凰亭路15号, Beijing 102500 (CN)。周微频 [CN/CN]; 中国北京市房山区燕山凤凰亭路15号, Beijing 102500 (CN)。于国柱(YU, Guozhu) [CN/CN]; 中国北京市房山区燕山凤凰亭路15号, Beijing 102500 (CN)。栾贵铨(LUAN, Guixian) [CN/CN]

(54) Title: A METHOD OF GEL INHIBITION PROCESS OF CONJUGATED DIENE

(54) 发明名称: 一种共轭二烯烃均聚

(57) Abstract: A method of gel inhibition is disclosed. Particularly, a method of gel inhibition in solution by means of organolithium of hydrocarbons which comprises 5-27% inhibitor is selected from the group consisting of petroleum hydrocarbon, the hydrogenated composition as the said C4 extract or the like.

[19] 中华人民共和国国家知识产权局



[12] 发明专利申请公布说明书

[21] 申请号 200610002311.7

[51] Int. Cl.

C08F 36/04 (2006.01)

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[11] 公开号 CN 101007855A

[22] 申请日 2006.1.26

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[71] 申请人 中国石油化工股份有限公司

地址 100029 北京市朝阳区惠新东街甲6号

[72] 发明人 王世朝 梁爱民 李传清 李伟
刘慧玲 孙文娟 周微频 于国柱
栾贵铨 闫冰 张杰 赵霞
王雪

[74] 专利代理机构 中国国际贸易促进委员会专利商标事务所

代理人 黄淑辉

权利要求书2页 说明书14页

[54] 发明名称

一种共轭二烯烃均聚和共聚合工艺的凝胶抑制方法

[57] 摘要

本发明涉及一种共轭二烯烃均聚和共聚合工艺的凝胶抑制方法, 更具体地说, 涉及一种共轭二烯烃均聚和共聚合的钕系阴离子溶液聚合工艺的凝胶抑制方法。这种凝胶抑制方法采用从石油烃蒸汽裂解或催化裂化副产的混合碳四抽余物、所述抽余物的

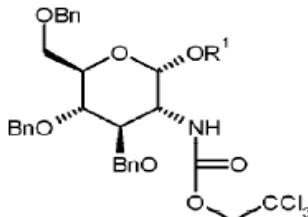
2007/087741 A1

DWPI record on STN

L1 ANSWER 1 OF 1 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 2008-K41888 [62] WPIX
TI AB WO 2007087741 A1 UPAB: 20080930
NOVELTY - Gel formation during polymerization of conjugated dienes is inhibited using gel inhibitors containing 5-27% of hydrocarbon compounds
DC
IN
PA
PI IT UPIT 20080930
16000 07 16000 007
FS Member(0002)
MC
PI CN---101007855 A 20070801 (200862) ZH <--
PLE
TECH TIEN A gel inhibiting method of conjugate dialkene homopolymerization and copolymerization technology
PRAI PA (CHPE-N) CHINA PETROLEUM CHEM IND CO LTD
IPCI ABEN The invention claims a gel inhibiting method of conjugate dialkene homopolymerization and copolymerization technology, in detail, a gel inhibiting method of conjugate dialkene homopolymerization and
EPC ...
CLMEN [CLAIM 1] A gel inhibiting method of conjugate dialkene polymerization technology, in this technology, using following substances as gel inhibitor, C4 raffinate, hydrogenated product of the raffinate, free combination of the raffinate.
... [CLAIM 2] The method according to claim 1, wherein, counting total mass of the C4 raffinate, the content of 1, 2-butadiene is not below 5% mass, the preference is 5-25% mass; wherein, counting total mass of the
... [CLAIM 13] The method according to claim 4, wherein, the polymerization temperature is 0-150 centigrade degree, and the polymerization pressure is 0.1-0.8Mpa gage pressure.

Chinese title/abstract/claims translated to English

DWPI Documentation Abstract Journal example

<p>2009-B46340/16 B03 C02 NOGK 2007.06.21 ZH NOGUCHI KENKYUSHO *JP 2009001517-A 2007.06.21 2007-163393(+2007JP-163393) (2009.01.08) C07B 61/00, C07H 15/00, 15/04 Novel trichloroethyl oxycarbonyl-ized (α)-galactosaminide derivative used as raw material for manufacture of glycopeptide and mucin-type glycoprotein used in pharmaceuticals, agrochemicals and reagent (Jpn) C2009B46340 Addnl. Data: YAMANOI T, ODA Y</p>	<p>B(7-A2B) C(7-A2B) C0032</p>
<p>NOVELTY A trichloroethyl oxycarbonyl-ized (α)-galactosaminide derivative (1) is new.</p> <p>DETAILED DESCRIPTION A trichloroethyl oxycarbonyl-ized (?) -galactosaminide derivative of formula (1) is new. Bn = benzyl; and R¹OH = a 1-30C saturated or unsaturated alcohol; an amino acid alcohol selected from tyrosine, serine or threonine; or a mono-, di- or tri-saccharide alcohol composed of glucose, mannose, galactose, N-acetyl-glucosamine, glucosamine, fucose and/or</p>	<p>N-acetylneuramic acid residues.</p>  <p>(1)</p> <p>USE Novel trichloroethyl oxycarbonyl-ized (α)-galactosaminide derivative is used as raw material for manufacture of glycopeptide and JP 2009001517-A+</p>
<p>mucin-type glycoprotein used in pharmaceuticals, agrochemicals and reagent.</p> <p>ADVANTAGE The trichloroethyl oxycarbonyl-ized (α)-galactosaminide derivative has excellent stereoselectivity.</p> <p>SPECIFIC COMPOUNDS (2S,3R)-2-benzyloxy carbonylamino-3-O-(3,4,6-tri-O-benzyl-2-(2,2,2-trichloro ethoxy carbonylamino)-2-deoxy-(?) -D-galactopyranosyl) butanoic acid benzyl and (2S)-2-benzyloxy carbonylamino-3-O-(3,4,6-tri-O-benzyl-2-(2,2,2-trichloro ethoxy carbonylamino)-2-deoxy-(?) -D-galactopyranosyl) propanoic acid benzyl are disclosed as trichloroethyl oxycarbonyl-ized (?) -galactosaminide derivative.</p> <p>EXAMPLE (2S,3R)-2-benzyloxy carbonylamino-3-hydroxy glutanoic acid benzyl (59.6 mg/0.2 mmol), 3,4,6-tri-O-benzyl-2-(2,2,2-trichloroethoxy carbonyl amino)-2-deoxy-(α)-D-galactopyranosyl acetate (138.2 mg/0.2 mmol), ytterbium (III) triflate (108.7 mg/0.2 mmol) and dichloromethane (3 ml) were stirred with boron trifluoride</p>	<p>diethylether complex (0.7 μl/0.0055 mmol) at 0° C for 21 hours under argon gas atmosphere, and sodium bicarbonate was added to quench the reaction. The organic layer was extracted and dried to obtain white crystals of (2S,3R)-2-benzyloxy carbonylamino-3-O-(3,4,6-tri-O-benzyl-2-(2,2,2-trichloro ethoxy carbonylamino)-2-deoxy-(α)-D-galactopyranosyl) butanoic acid benzyl in yield of 86%.</p> <p>TECHNOLOGY FOCUS Organic Chemistry - Preparation (claimed): A 3,4,6-tri-O-benzyl-2-(2,2,2-trichloroethoxycarbonylamino)-2-deoxy-(α)-D-galactopyranosyl acetate and alcohol are reacted in presence of boron trifluoride diethyl ether complex and ytterbium (III) triflate to obtain trichloroethyl oxycarbonyl-ized (α)-galactosaminide derivative. Preferred Derivative: The trichloroethyl oxycarbonyl-ized (α)-galactosaminide derivative is preferably of formulae (2 or 3). R² = H or carboxy protecting group; R³ = H or amino protecting group; R⁴ = H or methyl; and Cbz = benzyloxy carbonyl.</p> <p> JP 2009001517-A+1</p>



DWPI Title and abstract

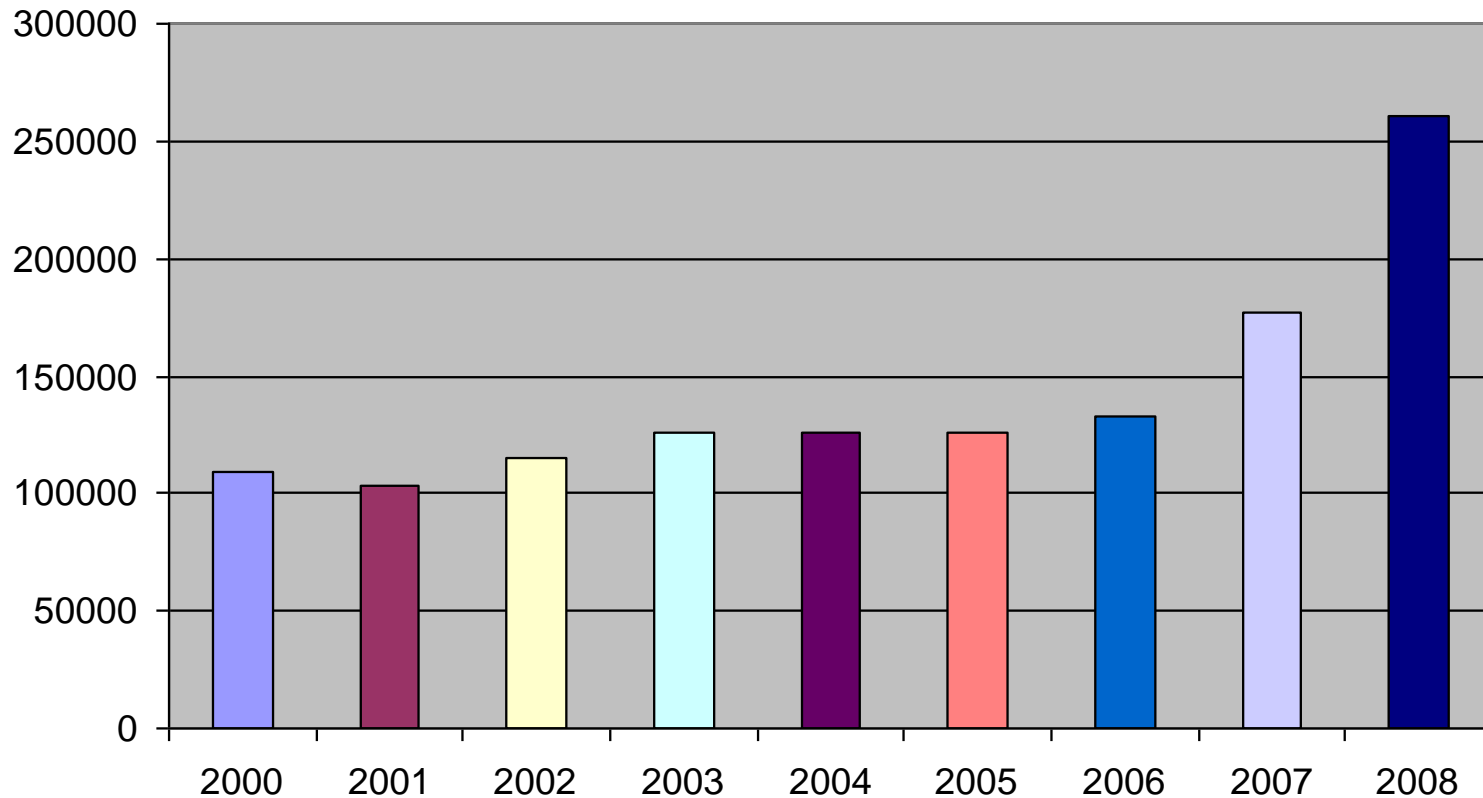
- Facilitates a fast understanding of the key parts of the patent
- English language regardless of source language
 - ~70% of basics are non- English language
- Written by graduates skilled in the technology area
- Abstract is based on the content of the claims, with reference to other sections of the patent
- Use and Advantage clearly stated (these are often buried within the patent)
- Chemical formulae and drawings included



DWPI – Deep Indexing/Manual Coding

- Added to *DWPI* to enable comprehensive retrieval
- *DWPI* Indexing systems applied:
 - Manual Coding
 - DCR Indexing
 - Markush Indexing
 - Fragmentation Coding
 - Polymer Indexing

DWPI records with deep indexing 2000-2008



Reflects large increase in records indexed from China & Korea

DWPI Indexing – Manual Codes

- Indexes novel technical aspects of the invention, as well as applications
- Hierarchical, giving more detail as the code gets longer (up to seven levels)
- Intellectually applied by subject specialists
- Updated yearly by technology specialists based on technology trends and customer feedback
- Produces unique relevant hits when compared to text-searching and IPC's

U11-C04G	[1992]
Ion beam lithography for semiconductor mfr. (H01L-021/027)	
U11-C04G1	[1992]
Apparatus and method for ion beam lithography (H01J-037/30, H01L-021/027) For control and focusing aspects see also U11-C04A6 and U11-C04C2 respectively. See V05-F codes for novel details of apparatus and methods of apparatus monitoring, operation and control..	
U11-C04G2	[1992]
Masks for ion beam lithography (H01L-021/027, H01J-037/30) (U11-C04A4) Also see V05-F codes for novel ion beam lithography masks. <i>stencil mask</i>	
U11-C04H	[1992]
X-ray lithography for semiconductor mfr. (H01L-021/027) <i>Roentgen</i>	
U11-C04H1	[1992]
Apparatus and method for X-ray lithography (H01L-021/027, H01J-035) (U11-C04C, U11-C04C1) Includes exposure using X-ray, soft X-ray and ionising ultraviolet radiation (for exposure using non-ionising ultraviolet radiation e.g. DUV see U11-C04E codes). For control and confinement aspects see also U11-C04A6 and U11-C04C2 respectively. See V05-E and V05-F codes for novel details of apparatus and methods of monitoring, operation and control. <i>extreme ultraviolet, EUV</i>	
U11-C04H2	[1992]
X-ray masks (H01L-021/027) (U11-C04A3) Also see V05-E08 codes and V05-F codes for novel X-ray, soft X-ray and EUV lithography masks.	
U11-C04J	[2005]
Imprint lithography for semiconductor mfr. (H01L-021, B41M-003) Includes use of stamps and presses to form pattern.	

DWPI deep indexing systems

- **DWPI Chemistry Resource (DCR)**
 - Structure searchable specific compound database
- **Merged Markush Service (MMS)**
 - Structure searchable database for Markush and specific compounds
- **Chemical Fragmentation coding**
 - Structural indexing for pharmaceutical and general chemical patents
 - Covers specific compounds and Markush structures from 1963 to date
 - Provides cost-effective chemical searching, there is no structure search charge
 - Indexed in ~1.9 million *DWPI* records
- **Polymer Indexing**
 - Covers all polymer related concepts including properties applications, processing etc. as well as polymer chemistry

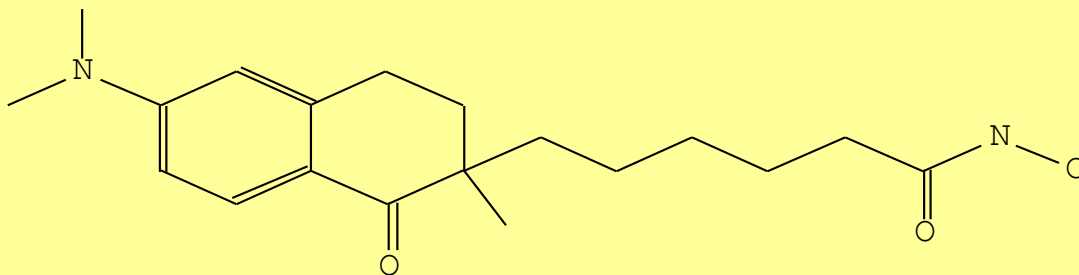
DCR record on STN

L1 ANSWER 1 OF 1 WPIX COPYRIGHT 2009 THOMSON REUTERS ON STN

AN.S DCR-571877

DCSE 571877-0-0-0

CN.S 6-(6-Dimethylamino-2-methyl-1-oxo-1,2,3,4-tetrahydro-naphthalen-2-yl)-
hexanoic acid hydroxyamide



MF C19 H28 N2 O3

SMF C19 H28 N2 O3 *1; TOTAL *1; TYPE *1

MW 332.4466

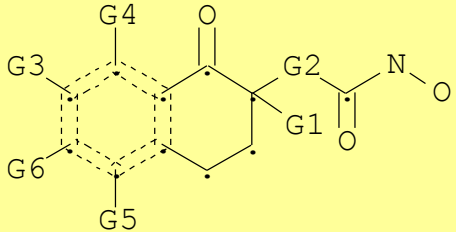
SDCN RA7P3J



Corresponding DWPI patent record

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L1 ANSWER 1 OF 1 WPIX COPYRIGHT 2009 THOMSON REUTERS on STN
AN 2002-518933 [55] WPIX
TI New 1-oxo-1,2,3,4-tetrahydro-naphthalen-2-yl)-alkanoic acid derivatives
   are histone deacetylase inhibitors, useful for treating cancer
DC B03; B05
IN GEORGES G; GROSSMANN A; SATTELKAU T; SCHAEFER W; TIBES U
PA (HOFF-C) HOFFMANN LA ROCHE & CO AG F; (HOFF-C) HOFFMANN LA ROCHE INC;
PI US-20020065282 A1 20020530 (200255)* EN 13[0]
. . .
IT UPIT 20060120
   571872-NEW 571872-PRD; 571877-CL 571877-NEW 571877-PRD
FS CPI
MCN: 0069-16801-N 0069-16801-P 0069-16801-T
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MMS Sample record on Questel

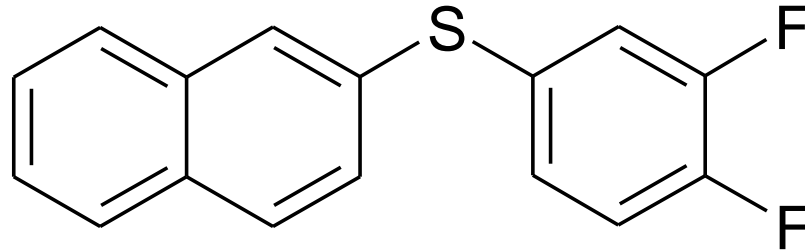
MARKUSH/DARC	1 / 1	CN :0069-16801	MMS
-FG: 0-	-GM: 3/ 6-		AV NU CR
		H	
		O	
		N	
		CN	
		HAL	
1O-CHK	1N-CHK	CHK	ARY
1O-ARY	1N-CHK	1F	HEA
1O-CHK-ARY	1N-CO1-CHK	F	HEF
		1N	1N
			1N
CHK3=C1-4.			

DWPI Polymer Indexing

- Code-based deep indexing system designed for ***all polymers and related concepts***
 - including polymers, additives, processing, applications etc.
- Comprehensive hierarchies allows easy specific or generic searching
 - e.g. a search for the code P1150 (polyolefin) retrieves all generic references, ***plus all specifics from the hierarchy, e.g. P1161 (polyethylene)***

P1150	Polyolefin		
P1161	NT	Polyethylene	"Homopolymer of ethylene"
P1172	NT	Low density polyethylene	"Homopolymer of ethylene with density 0.918 - 0.932 g/cc"
	UF	LDPE	
P1183	NT	Medium density polyethylene	"Homopolymer of ethylene with density 0.926 - 0.940 g/cc"
	UF	MDPE	
P1194	NT	High density polyethylene	"Homopolymer of ethylene with density > 0.940 g/cc"

Fragmentation codes example



- This molecule is indexed with these fragmentation codes:

G111 - benzene (with other carbocycle)

G221 - naphthalene

H594 - aromatic thioether

H601 - fluorine

M532 - 2 aromatic ring systems

M142 - rings linked by sulphur

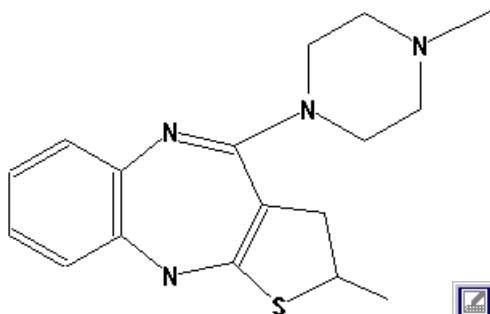
H642 - 2 halogens bonded to aromatic rings

etc.



Topfrag software

- This enables the user to create a structure diagram and convert this to a full time-ranged search strategy for *DWPI* fragmentation codes
- Availability:
 - Markush TOPFRAG software from Thomson Reuters
 - as part of STN Express
 - structure plug-in for STN on the web



draw a structure

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SET PAGELENGTH SCROLL
S ("E850"(P)F553(P)H121(P)H181(P)H202(P)M240(P)M412)/M0,M2,M3,M4
S L1(P)(M511(P)M521(P)M530(P)M540)/M2,M3,M4
S L2(P)(M211(P)M281(P)M320(P)(M270 OR M273))/M2,M3,M4
S L3(P)46639/RIN
S L4(P)(D011(P)D012(P)F011(P)F014)/M2,M3,M4
S (L1(P)M900/M0) OR (L2(P)M901/M2,M3,M4) OR (L4(P)M902/M2,M3,M4)
S L6 OR L5
S L7(NOTP)(H3 OR H4 OR H5 OR H6 OR H7 OR H8 OR H9 OR J0 OR J1 OR J2)/M2,M3,M4
S L8(NOTP)(J3 OR J4 OR J5 OR J6 OR J9 OR K1 OR K2 OR K3 OR K4 OR K5)/M2,M3,M4
S L9(NOTP)(K6 OR K7 OR K8 OR K9 OR "L1" OR "L2" OR "L3" OR "L4" OR "L5")/M2,M3,M4
S L10(NOTP)("L6" OR "L7" OR "L8" OR M1)/M2,M3,M4

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N C H O S N P Cl Br F

generate search
strategy for selected
online host

DWPI Delivery Channels

- Online hosts
 - STN: DWPI plus specifics structure search via DCR
 - Questel: DWPI plus specifics and Markush structure search via MMS
 - Dialog: DWPI plus specifics structure search via DCR
- Thomson Innovation
 - DWPI module; extra value through integration of DWPI with first level patent data
 - CPI Manual Code search available
- Delphion; iEPROS, DII
- Direct DWPI datafeed to the customer



Summary

- Patents contain a large amount of chemical information not available elsewhere
- *DWPI* provides convenient access to this information
 - Searchable by structure, text or codes
 - High quality English language abstracts from worldwide patents