Final Report
to

California Air Resources Board

Research Division

on

Contract No. 98-310

Investigation of Low Reactivity Solvents

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Disclaimer-

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This report was submitted in partial fulfillment of ARB Contracts Number 98-310***, Investigation of Low Reactivity Solvents for Consumer Products***, by the Cal Poly Foundation under sponsorship of the California Air Resources Board.

ABSTRACT

The contractor prepared a database of solvent properties designed to facilitate the production of alternative lower reactive formulations for consumer products. Solvents for inclusion in the database were selected in accordance with program objectives of the Air Resources Board. Special attention was given to low reactivity solvents, in support of the ARB's reactivity-based regulation for aerosol coatings. Consideration was given to solvents that are representative of those used for products formulated for the California marketplace. Supplemental information on chemical composition was obtained for all solvent and solvent mixtures studied. The database will be accessible on the World Wide Web for use by the public.

In a separate task not related to the database, the contractor obtained detailed species profiles for a number of selected hydrocarbon solvents and solvent mixtures. Analysis of these materials was performed using high-resolution capillary gas chromatography. Detection was by flame ionization detector, and/or mass selective detector, as deemed necessary for identification and quantitation of the components. The analytical methods identified and quantified VOC's present in common hydrocarbon solvents and solvent mixtures used in consumer products. These data will be used to support ARB's ongoing research involving reactivity of solvent mixtures.

Executive Summary

I. Background

Due to its reactivity and role in the formation of photochemical smog, much attention has been directed to the control of tropospheric ozone in California. In recognition of the significance of the pollutant, the ambient standard for ozone in California is more stringent than the federal standard (0.09 vs. 0.12 PPM, hourly average). In 1992, 11 of the 14 air basins in California reported ozone concentrations in excess of the California Ambient Air Quality Standard[1]. The California Air Resources Board has developed control strategies for ozone based on computer models which simulate the production of ozone within a given receptor grid. One such model, the Urban Airshed Model (UAM)[2], accounts for the ozone forming potential originating from a host of hydrocarbon emissions of varying reactivity. The model allows the impact of various control strategies to be observed. The success of the model depends on having accurate data for both the total amount of material in a given source category (obtained from the emission inventory), as well as detailed composition information for each hydrocarbon in a given source. These "organic gas species profiles" must be continuously updated to reflect changes in hydrocarbon and oxygenate use patterns within the state.

Emissions of Volatile Organic Compounds (VOC) from consumer products in California amount to about 100,000 tons per year[3]. There is an enormous diversity in the types of products listed in the consumer products categories. A number of different solvents are contained in these multiple products. Having a single source for key physical properties of the many solvents used for these products would encourage exploring replacement of solvents of high photoreactivity with new solvents, of lower reactivity. The database produced in this study contains information about physical, chemical, and solvency parameters for a large number of solvents.

Many of the common solvents used in consumer products are actually complex mixtures of multiple components. One example of such a common solvent is “mineral spirits”, produced in a number of grades, differentiated by distillation ranges and aromatic character. This study investigated such solvent mixtures, and obtained true species profiles for them. These species profiles may be useful for the emission inventory and to some extent as a validation of the maximum incremental reactivity (MIR) hydrocarbon solvent bins developed by ARB staff.

References

1. California Air Resources Board, Annual Summary of Air Quality Data, Vol. XXIV (1992)

2. Systems Applications International, Description of the Urban Airshed Model, February, 1993

3. 2000 ARB Consumer Products Emissions Inventory Assessment

II. Methods

The contractor prepared a plan designed to produce a database of physical and chemical data for representative solvents. Following a review of solvent usage patterns in California, including results from the most recent ARB survey of consumer solvents, a list of about 100 solvents was identified for inclusion in the database. Following discussion with ARB, the final list of solvents was expanded to include about 150 solvents and solvent mixtures. Once the list of candidate solvents was prepared, a list of significant solvent properties was developed. Physico-chemical properties of solvents that would be important for potential solvent substitution were studied.

The database design was prototyped in a number of forms. Discussion with ARB staff raised the issue of database maintenance. Ultimately, the decision was made to produce a database composed of static HTML pages, linked together with appropriate navigational menus. The majority of the database pages were prepared starting from Excel spreadsheets, with final editing and composition performed within FrontPage.

As a separate task, the Contractor developed a plan for characterizing the composition of solvent emissions from a number of selected solvents and solvent mixtures. Following solvent selection, 43 samples were analyzed for species profile. Suitable extracts of the solvents and solvent mixtures were injected into a gas chromatograph, equipped with a high-resolution capillary column and flame ionization detector (GC-FID). A separate aliquot of each sample was analyzed by separate gas chromatograph, equipped with a mass selective detector (GC-MS). The GC-MS system aided in the identification of any GC peaks not identified in the normal GC-FID analysis. Any peak not identified as a specific isomer by either analytical technique was quantitated and reported by carbon number as "*other*". In addition, a summary of hydrocarbon components was provided for each sample. This included categories for percentage composition by normal paraffins, isoparaffins, cyclic paraffins, and aromatics. Unidentified paraffin isomers were placed into an "unidentified paraffins" category.

Sampling and analysis methods were selected from those used in previous ARB studies (Species profiles for Architectural and Industrial Coatings, and Improvement of Species Profiles for Aerosol Coatings, Censullo, Jones and Wills)

III. Results

The methods used in this study produced a database of important physico-chemical properties for a large number of solvents. In addition, detailed species profiles for forty-two solvents were obtained. For many of the samples, virtually all organic components were identified, and quantitated, producing what can be described as "total organic compound (TOC) speciation. A number of novel analytical techniques were used in the characterization of the complex solvent mixtures investigated.

Conclusions

The database produced in this study was intended to encourage and facilitate exploration of substitution of lower reactive solvents for the higher reactive solvents used in consumer products. Additionally, the composition of emissions from a number of common solvents was examined in detail. The procedures in this study produced highly detailed species profiles of selected hydrocarbon mixtures.

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I. Introduction

A. Statement of the Problem

Due to its reactivity and role in the formation of photochemical smog, much attention has been directed to the control of tropospheric ozone in California. In recognition of the significance of the pollutant, the ambient standard for ozone in California is more stringent than the federal standard (0.09 vs. 0.12 PPM, hourly average). In 1992, 11 of the 14 air basins in California reported ozone concentrations in excess of the California Ambient Air Quality Standard[1]. The California Air Resources Board has developed control strategies for ozone based on computer models which simulate the production of ozone within a given receptor grid. One such model, the Urban Airshed Model (UAM)[2], accounts for the ozone forming potential originating from a host of hydrocarbon emissions of varying reactivity. The model allows the impact of various control strategies to be observed. The success of the model depends on having accurate data for both the total amount of material in a given source category (obtained from the emission inventory), as well as detailed composition information for each hydrocarbon in a given source. These "organic gas species profiles" must be continuously updated to reflect changes in hydrocarbon and oxygenate use patterns within the state.

Emissions of Volatile Organic Compounds (VOC) from consumer products in California amount to about 120,000 tons per year[3]. There is an enormous diversity in the types of products listed in the consumer products categories. A number of different solvents are contained in these multiple products. Having a single source for key physical properties of the many solvents used for these products would encourage exploring replacement of solvents of high photoreactivity with new solvents, of lower reactivity. The database produced in this study contains information about physical, chemical, and solvency parameters for a large number of solvents.

Many of the common solvents used in consumer products are actually complex mixtures of multiple components. One example of such a common solvent is “mineral spirits”, produced in a number of grades, differentiated by distillation ranges and aromatic character. This study investigated such solvent mixtures, and obtained true species profiles for them. These species profiles may be helpful for assignment of maximum incremental reactivity (MIR) scales to these mixtures.

References

1. California Air Resources Board, Annual Summary of Air Quality Data, Vol. XXIV (1992)

2. Systems Applications International, Description of the Urban Airshed Model, February, 1993

3. Survey of Emissions from Solvent Use - Volume I: Aerosol Paints, Final Report to California Air Resources Board, Battelle, September 1994

B. Project Objectives

The overall objectives of the research described in this report may be identified in general terms: to develop a database of properties for solvents used in consumer products, and to develop improved species profiles for total organic compound (TOC) emissions from selected solvents and solvent mixtures. The work plan was divided into three main tasks.

Task 1 – Development of a plan for selecting solvents and their properties for database inclusion
Task 2 -- Obtain literature data for selected solvents, and develop database
Task 3 – Obtain species profiles for selected solvents used in Consumer Products

Pursuant to this overall goal, a number of sub tasks were performed:

- Review information sources detailing usage patterns for solvents used in consumer products
- Identify critical solvents for inclusion in a properties database
- Review all information sources concerning the properties of such solvents
- Design and produce a database of significant solvent properties for selected solvents
- Obtain samples representative of common solvents used in California
- Analyze the collected samples for speciated TOC's

II. Task 1 Activities- Planning

The project kickoff meeting was held at ARB on April 4, 1999. The Principal Investigator (Censullo) and one of the Research Associates (Wills) attended this meeting. We presented our tentative workplan for all phases of the project, with emphasis on Task 1 activities. Copies of the overheads used were distributed to ARB staff at this meeting.

A second meeting was scheduled with the Research on Reactivity Advisory Council (RRAC) on April 15, 1999. The Principal Investigator (Censullo) presented an overview of the activities proposed for the generation of the solvents database, which would be the final deliverable on this project. Questions were fielded from the members of the RRAC, and their concerns, comments and suggestions were reviewed with ARB staff.

The two major sub-tasks of Task 1 were the development of the list of properties for inclusion in the database, and the list of solvents whose properties would be so listed.

A. List of Properties

The list of properties suggested in the original proposal was modified, based on discussions at the 4/15/99 RRAC meeting, and the revised list was sent to the ARB Project Officer for review by the RRAC. Based on discussions with ARB personnel and comments by RRAC, a revised list of properties was prepared, as shown in Table 1. The properties were intended to provide information in four key areas: Physical Properties, Solvency Properties, Photochemical Reactivity, and Regulatory Information.

Table 1 – Solvent Properties

Properties	Basis for Selection; notes
Name, trade name, synonyms	Allows lookup by a number of naming systems
CAS number	Unique reference number; useful for links to other databases
Formula, molecular weight	Provides basic chemical information; not applicable for mixtures
Structure	Shows graphical structure; not applicable for mixtures
Chemical Class	Allows comparison with other chemically related substances
MP, BP	Provides information for storage/shipping conditions
Vapor pressure (at reference temperature)	Gives an estimate of volatility
Evaporation rate (relative to butyl acetate)	A practical measure of volatility
Flash point	Significant for safe handling
Specific Gravity	Allows conversion between mass and volume
Viscosity	Provides an insight into pouring/mixing characteristics
Henry's law constant	Describes partitioning from aqueous phase into vapor
Solubility in water	Important for formulation compatibility and disposal
Log K_{ow}	Gives information about partitioning between aqueous environment and biomass
Kauri-butanol number	Not applicable for all solvent classes
Hildebrand parameter	Widely used to allow comparisons of solvency abilities
k_{OH}	Rate constant with hydroxyl radical, a scavenger for atmospheric VOCs
MIR	A measure of photochemical reactivity
Toxic Air Contaminant	Compliance with current regulations

B. List of Solvents

Initial classification of solvents was done by conducting a thorough review of the list of 383 solvents provided from the most recent ARB Consumer Product Survey. The CAS numbers were searched against a number of existing databases, to verify the chemical names and to provide a list of synonyms for each compound. The databases searched were Chemfinder (www.chemfinder.org), ChemExper (www.chemexper.be), NCMS solvent alternatives database (www.solvdb.ncms.org) and DIALOG. For some compounds, additional information was obtained from the USEPA/OPP database (www.cdpr.ca.gov). If duplicate names (or synonyms) were found, the idea was to sum the sales volumes, potentially reducing the number of solvents on the original ARB list. A new column, containing synonyms, was added to the ARB spreadsheet containing the results of the Consumer Product survey. Comments were added to specific cells, reflecting additional information about the sample identification provided by the review of the original information. Numerous instances of incorrect CAS numbers or names were obtained and so indicated on the revised spreadsheet. Based on this analysis, the ranked list was used to prepare the list of 100 solvents for consideration. This tentative list was sorted alphabetically and presented to the RRAC for comments in the beginning of October, 1999. Comments from the RRAC were used to refine the list and presentation of the solvents list. First, a number of product categories were created, to facilitate the arrangement of solvents into classes. The initial classification scheme contained the following classes:

Alcohols (ALC)
Esters (EST)
Exempt(EXMPT)
Glycols (GLY)
Glycol Ethers (GLYE)
Halogenated (HAL)
Hydrocarbons (HYD)
Ketones (KET)
Nitrogen-Containing (NIT)
Propellants (PROP)
Miscellaneous (MISC)

Once the revised list of solvents was sorted into these classes, it became apparent that the hydrocarbon class, with 39 of the top 100 solvents, would bear further study. This will be discussed shortly.

Based on comments from the RRAC, and discussion with ARB, the list of solvents was again modified. Reconciliation of final solvents was aided by an EPA list of consumer product information. The final count of solvents selected for inclusion in the final database expanded to 129 solvents and solvent mixtures.

Specific justification for each added substance is provided below.

In the alcohol category (ALC), we added a number of common alcohols not originally listed in the ARB survey. The list provided by EPA contained an entry for "aliphatic alcohols". The added alcohols are common, specific examples of such compounds.

A similar deficiency was noted in the GLYCOL category. These common substances were indicated in the U.S. EPA consumer products database. We included the most common of these compounds.

In the ESTERS category, a number of common aliphatic acetate esters were included, as higher homologues of those already listed (such as ethyl and butyl acetate). Since dimethyl glutarate was indicated to be of interest, based on information from the ARB consumer product survey, it seemed appropriate to include the other common dibasic esters, dimethyl succinate and dimethyl adipate.

In the KETONES category, ethyl isoamyl ketone, was listed in the ARB survey as one of the top 100 compounds found in consumer products. This compound is not currently manufactured in the United States. Based on other methyl ketones on the list, it is likely that ethyl isoamyl ketone was inadvertently introduced for methyl isoamyl ketone. Our final list includes this latter compound as a substitute for the former.

The ARB Consumer Product Survey results did not contain any of the Exempt solvents. These were added in, for the sake of completeness, since many of these materials are in widespread use already. One new class, the volatile siloxanes, was added into this category.

Before the database was finalized, it was recognized that the Exempt category was not universally applicable to all solvent users. For example, while aerosol coating formulators may treat acetone as an exempt substance, this is not the case for consumer products. Thus, those compounds originally in the Exempt database category were moved to other categories, as appropriate, and the Exempt category was eliminated from the database.

A list of the final 129 substances selected for database inclusion, sorted by class is shown in Appendix A.

C. Hydrocarbon Class Considerations

As mentioned above, the hydrocarbons class contained a significant fraction of all the solvents investigated. Many of the solvents in this class are complex mixtures of petroleum-based products. Solvents in this category are referred to by multiple names, synonyms, and trade names. They are typically characterized by a distillation or boiling point range, as well as general solvency properties. The ARB consumer product survey revealed multiple names for solvents with the same CAS number, and revealed multiple CAS number for solvents with the same name. It became apparent that it was difficult to unambiguously assign unique CAS numbers, or even names to all hydrocarbon solvents in use.

In an attempt to group hydrocarbon solvents believed to be important to the consumer products industry, for presentation in the database, a hydrocarbon solvent classification scheme developed by the American Society for Testing and Materials (ASTM) was investigated. Typical ASTM specifications for common hydrocarbon solvents are shown in Table 3. The ASTM designations provide an objective, operational definition of solvent types, based on boiling point ranges and aromatic character, and are publicly available. In this way, they clearly indicate a unique TYPE of solvent, and avoid the need to refer to trade or common names to describe a hydrocarbon solvent. However, ASTM designations are not consistent with the bin system (Title 17, California Code of Regulations, Article 1, table of Maximum Incremental Reactivity (MIR) Values, section 94701) developed for the California aerosol coatings regulation. A MIR value typically has not been assigned to ASTM specifications. Therefore, recognizing the differences between the classification systems, MIR values are not assigned to hydrocarbon solvents and database entries.

III. Task 2 Activities- Database Production

To obtain data for the selected solvent properties, a number of literature sources, both online and print, were investigated. Table 2 shows the sources used in this study. In the majority of cases, multiple online sources showed good agreement for physical properties. In those cases in which discrepancies arose, printed materials were used to resolve them. Data were entered into an Excel spreadsheet (one page per record), pending final design of the database.

Three different prototypes of the database were designed, to see which would be most suited to the task at hand. ChemFinder (CambridgeSoft) was explored as a logical first choice. It allows the user to search a database by chemical structure (ChemDraw web browser free plug-in). As an additional benefit, formulas and molecular weights are automatically calculated by the program from the chemical structure, verifying these fields. The structures imbedded in the database are fully editable ChemDraw structures. These may be copied, and used as input for other web-based searches.

While this initially seemed like the ideal product for chemical structure based searching (indeed, it appears to be the ONLY product with this capability), it has one severe limitation: its databases can only be accessed by people having ChemFinder installed on their computer. The possibility of opening up the database to public access via web was explored with Cambridge Software Corp. The cost for an open web server license (web-enterprise server), was in the range of tens of thousands of dollars. Following consultation with ARB, this design option was abandoned.

The next candidate was FileMaker Pro. This is a simple, relational database program. It is advertised as being “THE solution for importing Microsoft Office files into a database”. Indeed, a database can be created by simply "dragging and dropping" an Excel file into the program. The program has a built-in facility ("wizard") for creating web-based databases with the same look and feel as the native Windows program. Once again, the issue of accessibility was given considerable weight. With the standard product, a limited number of connections are available (10 unique IP connections per 24 hour period). FileMaker offers an "unlimited" license version for additional cost. Of course, the hosting computer must be running this software. This candidate database was rejected based on that last requirement.

The next option investigated involves the use of Microsoft Access. A working version of this database was constructed. Subsequent discussion with ARB personnel indicated that the ARB server did not readily support ACCESS database maintenance.

At that point, the decision was made to proceed with a “static” database, consisting of HTML pages (one per solvent record), controlled by a number of menu pages. While the relational characteristics of the database were lacking, long-term support, maintenance, and user accessibility were assured.

The home page of the database is depicted in Figure 1. It allows the user to search from pre-defined, pull-down menus by name, CAS number, or chemical class. The pull-downs were implemented in Java Script, facilitated by the use of the J-bots add-in to Front Page. Additionally, a “master list” search option is provided on the home page, to allow the examination of the entire database, and facilitate “browsing”. A portion of this “master list” is shown in Figure 2.

Each record from a corresponding Excel file was brought into FrontPage for HTML editing. At this point, chemical structures for the compounds were prepared using ChemDraw software. Files were saved in native CDX format. They were converted to GIF format and inserted into the HTML page, using FrontPage tools. A sample record is shown in Figure 3.

Table 2- References

reference #	SOURCE	URL
1	NCMS	http://solvdb.ncms.org/
2	ChemFinder	http://www.chemfinder.com
3	Food Testing and Analysis	
4	CRC Handbook	
5	Lange's Handbook	
6	NIST Webbook	http://webbook.nist.gov/chemistry/
7	Charles Tenant	http://www.ctennant.co.uk
8	DuPont	http://www.dupont.com/dymel
27	DuPont	http://www.dupont.com/dymel
9	Arco	http://www.arcochem.com
10	Syracuse Research Corp.	http://esc.syrres.com/interkow/kowdemo.htm
11	Syracuse Research Corp.	http://esc.syrres.com/efdb/Chemfate.htm
12	Aldrich	http://www.sigma-aldrich.com/
13	DOW	http://www.dow.com
14	SRC database	http://esc.syrres.com/interkow/physdemo.htm
15	Industrial Solvents Handbook	
16	BP DataBase	http://www.bpamocochemicals.com/solvents/bpsolve/
17	Eastman Products	http://www.emn.com/Product_Information/EastProdCata.asp
18	Henry's Law Constants	http://www.mpch-mainz.mpg.de/~sander/res/henry.html
19	Merck Ltd.	http://www.merck-ltd.co.uk/Technical_Services/TechTables/kauri.htm
20	OxyChem	OxyChem Data Sheet
21	Lyondell Data Sheet	http://www.lyondell.com/html/FR_products.html
22	DowCorning	Dow Corning MSDS and Data Sheet, http://www.dowcorning.com/
23	Shell	Shell Hydrocarbon Information Sheet, SC: 1056-91
24	Exxon	Exxon Chemical Reference Chart, AS %M 4/90
25	Ashland	Ashland Chemical Solvent Properties Chart and MSDS
26	Ca. Air Resources Board	http://www.arb.ca.gov/consprod/regs/aeropnt.pdf
27	BF Goodrich/Kalama	http://www.kci-freedom.com
28	JT Baker	http://www.jtbaker.com
29	HOY solubility parameters	
30	Merck Ltd.	http:// www.merck.com.au/techsup/techsup_frame.htm
31	Vermont SIRI MSDS index	http://siri.org/msds
32	Chemcentral	http://www.chemcentral.com/literature_physpropchart.html

Table 2 (continued)- References

33	National Toxicology Program	http://ntp-server.niehs.nih.gov/htdocs/Chem_Background/ExecSumm/PGtBE.html
34	Pearl Paints North America	http://www.pearlpaints.com/catalog/solvents/common_solvents.htm
35	Angus Chemical Company	technical data sheet
36	HAPS/SCAQMD	http://www.aqmd.gov/tao/cas/app2.html
37	TACS/CARB	http://www.arb.ca.gov/toxics/cattable.htm
38	ChemTechPub.	Solvent database CD-ROM
39	Condea Vista MSDS and Data Sheet	http://www.CVTechData.com/
40	MG Industries	http://www.mgindustries.com/msds/SubLookup.asp?SubName=19690
41	Fisher Scientific MSDS	http://www.fishersci.com chemicals catalog
42	Hazard MSDS	http://www.hazard.com/
43	ARB	http://arbis.arb.ca.gov/regact/conspro/aerocoat/aerocoat.htm
44	Chevron	Chevron MSDS
45	Concawe	http://www.concawe.be/
46	ASTM	ASTM Specification D 3734-96, Annual Book of ASTM Standards, Vol 06.04
47	ASTM	ASTM Specification D 3735-96, Annual Book of ASTM Standards, Vol 06.04
48	ASTM	ASTM Specification D 235-95, Annual Book of ASTM Standards, Vol 06.04

Figure 1 – Home Page for Database

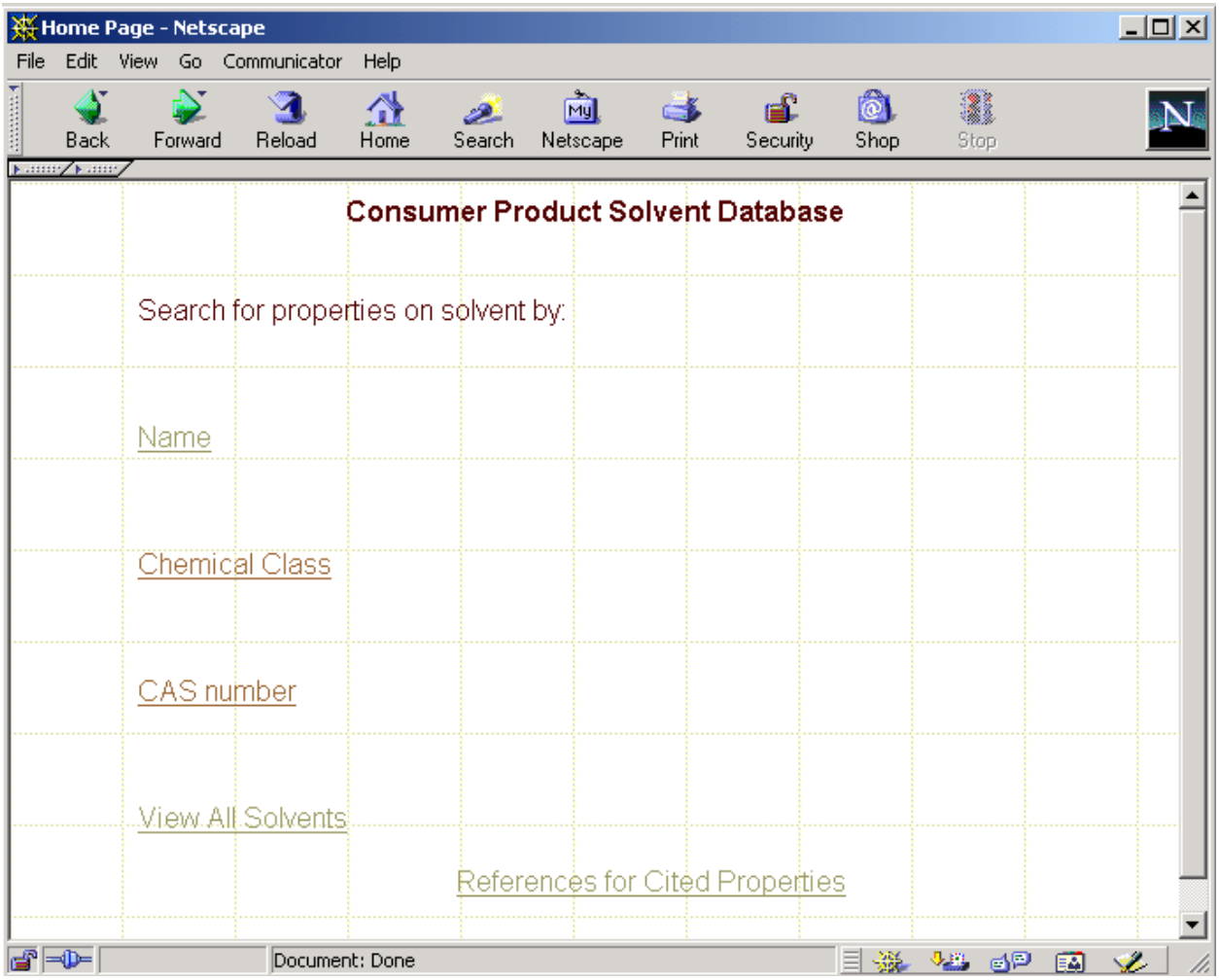


Figure 2 – Database Master List

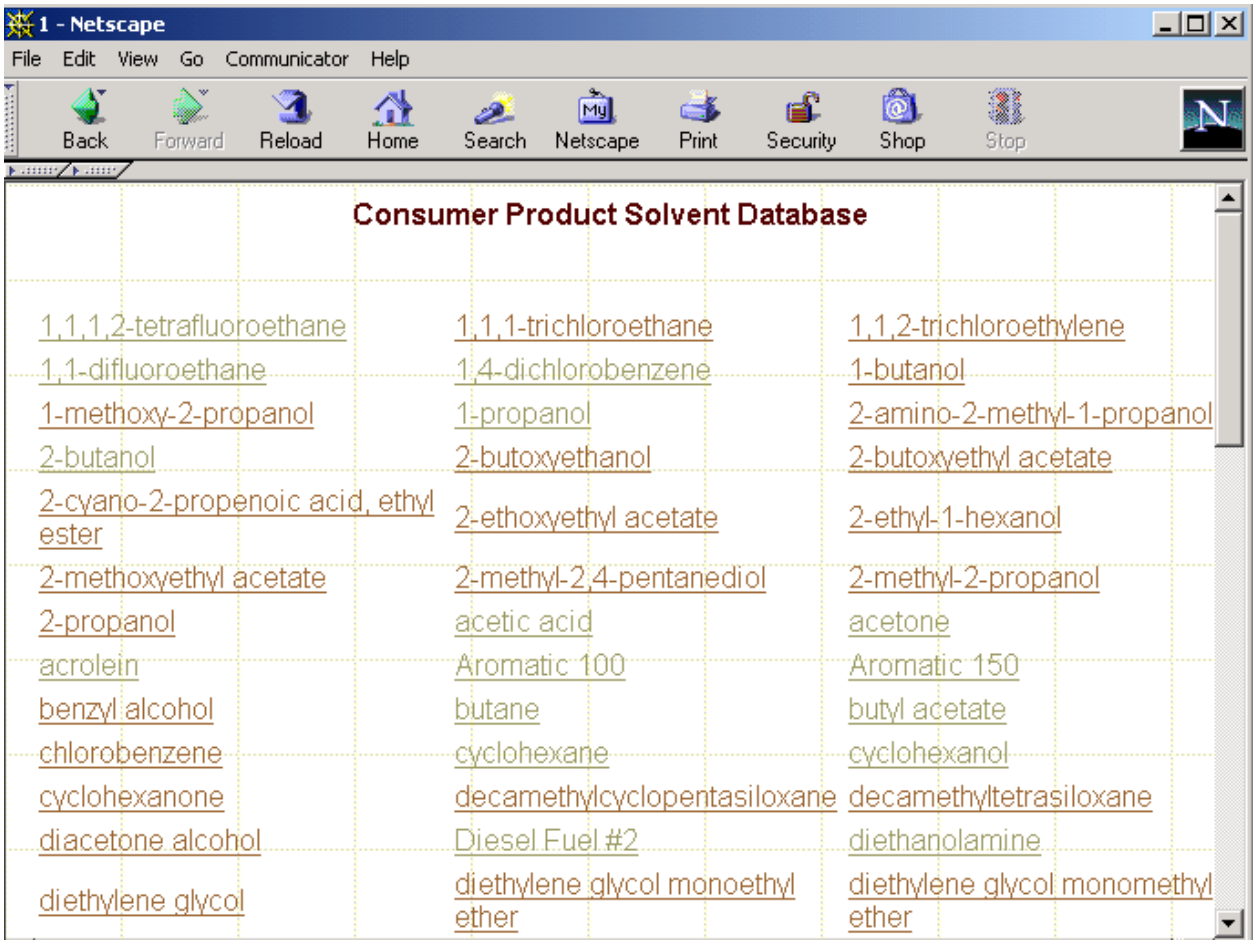
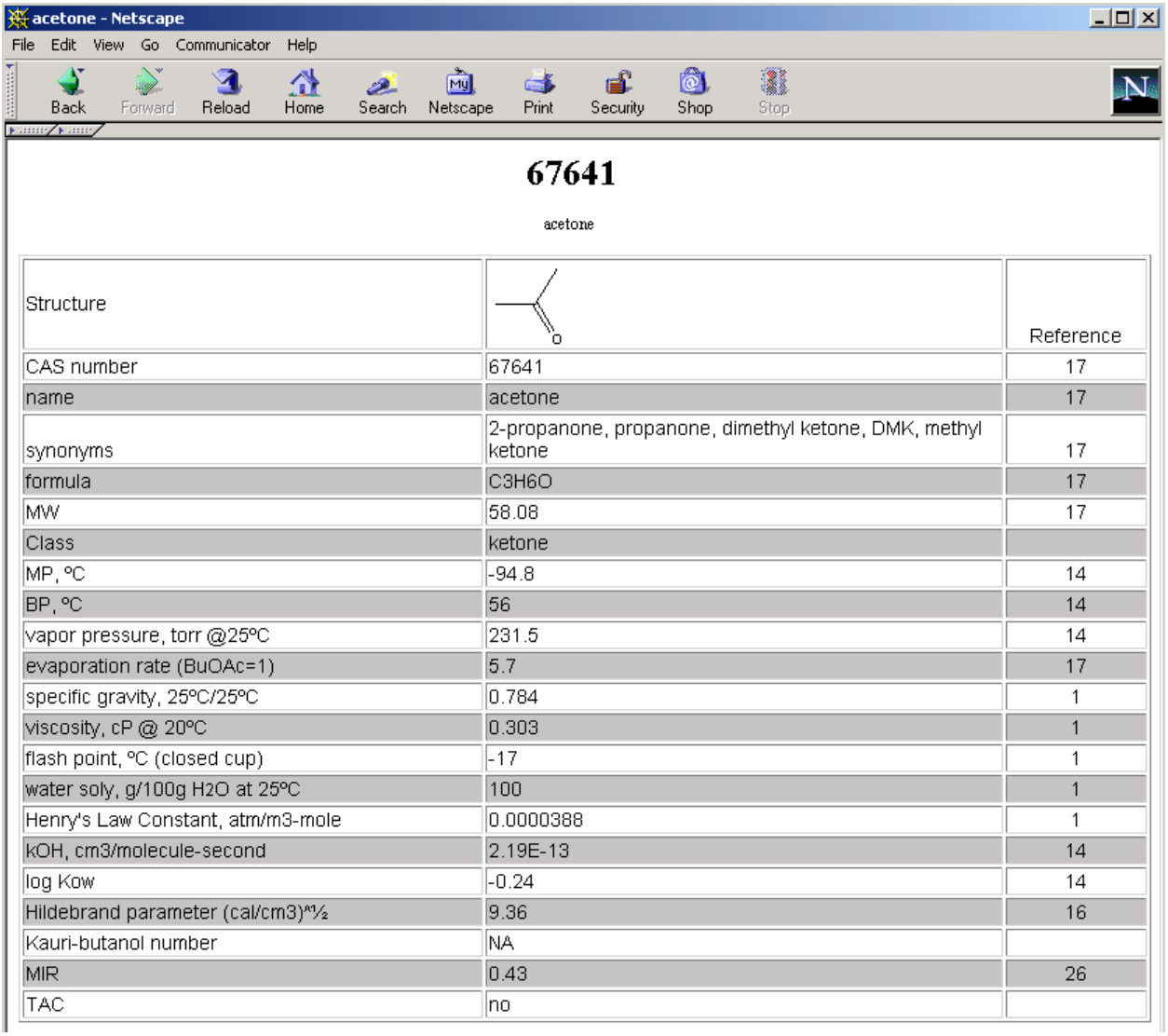


Figure 3- Sample Database Record



67641

acetone

Structure		Reference
CAS number	67641	17
name	acetone	17
synonyms	2-propanone, propanone, dimethyl ketone, DMK, methyl ketone	17
formula	C3H6O	17
MW	58.08	17
Class	ketone	
MP, °C	-94.8	14
BP, °C	56	14
vapor pressure, torr @25°C	231.5	14
evaporation rate (BuOAc=1)	5.7	17
specific gravity, 25°C/25°C	0.784	1
viscosity, cP @ 20°C	0.303	1
flash point, °C (closed cup)	-17	1
water soly, g/100g H2O at 25°C	100	1
Henry's Law Constant, atm/m3-mole	0.0000388	1
kOH, cm3/molecule-second	2.19E-13	14
log Kow	-0.24	14
Hildebrand parameter (cal/cm3)^½	9.36	16
Kauri-butanol number	NA	
MIR	0.43	26
TAC	no	

IV. Task 3 Activities- Species Profiles

A. Sample Selection

A list of solvents and solvent mixtures to be analyzed was submitted to ARB for approval. The final list, consisting of 42 samples, is shown in Table 3. Suitable aliquots of the hydrocarbon solvent mixtures were injected into a gas chromatograph, equipped with a high-resolution capillary column and flame ionization detector (GC-FID). For this study, the use of multiple columns proved helpful in identifying the complex mixtures of hydrocarbons encountered. Additionally, a separate aliquot of each sample was analyzed by a separate gas chromatograph, equipped with a mass selective detector (GC-MS). The GC-MS system aided in the identification of any GC peaks not identified in the normal GC-FID analyses. Many of these consisted of components which were isomers. The number of such isomers is quite large (numbering in the thousands). Not all of these species are available commercially. Therefore, in some cases, the exact isomer corresponding to a certain compound could not be determined. In such cases, the peak was quantitated and reported by carbon number as "*other*" by carbon number.

B. Analytical Methodology

Hydrocarbon mixtures were analyzed by gas chromatography using two different capillary columns: a 60 meter Carbowax^{TM} column and a 100 meter polydimethylsiloxane (PDMS) column. The Carbowax column afforded good separation of aliphatic compounds from aromatic compounds. Aliphatic compounds are not retained well on the more polar CW column and tend to elute well ahead of most aromatic compounds. Detection was by flame ionization (FID). Library peak identities were confirmed by correlating data from a FID run with examination of the mass spectra obtained using a mass selective detector with the same column. Quantitation was performed by the internal standard technique, using response ratios calculated from authentic sample components or surrogates.

The difference in separation achievable on these two columns is illustrated in Figure 4. In the GC trace for the PDMS column (Figure 4, upper), all the components are eluted roughly in order of boiling point, independent of the type of hydrocarbon. The result is a separation in which aliphatic and aromatic components are "intermingled" throughout the chromatogram. The same sample, analyzed on a Carbowax column produced the chromatogram depicted in the lower portion of Figure 4. Note that the aromatic components are well-separated from the aliphatic peaks, facilitating the detection and confirmation of these peaks.

Another set of representative chromatograms is shown in Figure 5. This figure allows comparison of an Aromatic 100 with an Aromatic 150 solvent. The higher boiling point ranges for the Aromatic 150 is clearly reflected in the two chromatograms.

Standard Operating Procedures for the analyses are given in Appendix B.

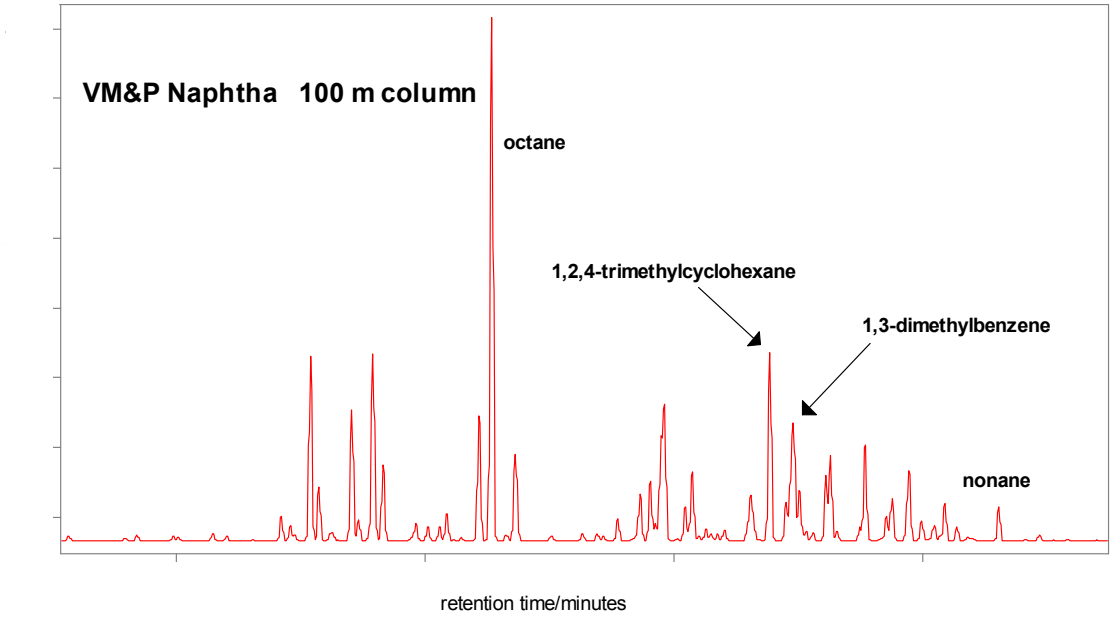
Table 3 – Sample Identification

product name	CalPoly ID	chemical name
VM&P naphtha	CP1	petroleum hydrocarbon naphtha, ASTM Designation: Type I VM&P Naphtha, Regular, 20 vol % max aromatics
300-66 solvent, Mineral Spirits 66	CP2	paraffinic petroleum distillate, ASTM Designation: Type I, Class A Mineral Spirits (8-22% aromatic), Regular; Stoddard Solvent
Light HC solvent	CP3	distillates (petroleum), hydrotreated light, ASTM Designation: Type I, Class C Mineral Spirits (0-2% aromatic); Stoddard Solvent
VM&P naphtha HT	CP4	aliphatic petroleum distillates, ASTM Designation: Type IV VM&P Naphtha, low aromatic, 2 vol % max
Lactol Spirits	CP5	aliphatic hydrocarbon
Mineral Spirits	CP6	solvent naphtha (petroleum), medium aliphatic, ASTM Designation: Type I, Class A Mineral Spirits (8-22% aromatic), Regular; Stoddard Solvent
Aromatic 100	CP7	light aromatic solvent naphtha, 1,2,4-trimethylbenzene, mixed xylenes, cumene, ASTM Designation: High Flash Aromatic Naphtha, Type I
Aromatic 150	CP8	heavy aromatic solvent naphtha, ASTM Designation: High Flash Aromatic Naphtha, Type II
Mineral Spirits	CP10	aliphatic hydrocarbons, ASTM Designation: Type I, Class A Mineral Spirits (8-22% aromatic), Regular; Stoddard Solvent
Mineral Spirits	CP11	aliphatic hydrocarbons, Stoddard type, ASTM Designation: Type IV (Low Dry Point), Class B Mineral Spirits (2-8% aromatic), Rule 66; Stoddard Solvent
Mineral Spirits	CP12	aliphatic hydrocarbons, Stoddard type, ASTM Designation: Type IV (Low Dry Point), Class B Mineral Spirits (2-8% aromatic), Rule 66; Stoddard Solvent
Aromatic 100	CP13	aromatic hydrocarbon, ASTM Designation: High Flash Aromatic Naphtha, Type I
VM&P Naphtha	CP14	aliphatic petroleum distillates, ASTM Designation: Type IV VM&P Naphtha, low aromatic, 2 vol % max
aliphatic petroleum distillates	CP15	aliphatic petroleum distillates, ASTM Designation: Type II (High Flash), Class A Mineral Spirits (8-22% aromatic); Stoddard Solvent
aliphatic petroleum distillates	CP16	aliphatic petroleum distillates, ASTM Designation: Type II (High Flash), Class C Mineral Spirits (0-2% aromatic); Stoddard Solvent
Aromatic 150	CP17	aromatic hydrocarbon, naphthalene, trimethylbenzene, ASTM Designation: High Flash Aromatic Naphtha, Type II
aliphatic petroleum distillates	CP18	aliphatic petroleum distillates, ASTM Designation: Type II (High Flash), Class C Mineral Spirits (0-2% aromatic); Stoddard Solvent
xylene	CP19	aromatic hydrocarbon
Stoddard Solvent	CP20	aliphatic petroleum distillates, ASTM Designation: Type I, Class A Mineral Spirits (8-22% aromatic), Regular; Stoddard Solvent
Aromatic 100	CP21	light aromatic solvent naphtha, ASTM Designation: High Flash Aromatic Naphtha, Type I
Aromatic 150	CP22	heavy aromatic solvent naphtha, ASTM Designation: High Flash Aromatic Naphtha, Type II
VM&P Naphtha	CP23	aliphatic petroleum distillates, ASTM Designation: Type IV

		VM&P Naphtha, low aromatic, 2 vol % max
VM&P Naphtha	CP24	aliphatic petroleum distillates, ASTM Designation: Type IV VM&P Naphtha, low aromatic, 2 vol % max
Mineral Spirits	CP25	aliphatic petroleum distillates, ASTM Designation: Type I, Class A Mineral Spirits (8-22% aromatic), Regular; Stoddard Solvent
Mineral Spirits	CP26	aliphatic petroleum distillates, ASTM Designation: Type I, Class A Mineral Spirits (8-22% aromatic), Regular; Stoddard Solvent
xylene	CP27	aromatic hydrocarbon
light naphtha solvent	CP28	solvent naphtha light aromatic(94%), toluene (6%), benzene (<0.1%)
aliphatic petroleum distillates	CP29	aliphatic petroleum distillates, ASTM Designation: Type IV (Low Dry Point), Class C Mineral Spirits (0-2% aromatic); Stoddard Solvent
VM&P naphtha	CP30	aliphatic petroleum distillates, ASTM Designation: Type I VM&P Naphtha, Regular, 20 vol % max aromatics
Aromatic 100	CP31	aromatic hydrocarbon, xylenes, trimethylbenzene, cumene, ASTM Designation: High Flash Aromatic Naphtha, Type I
Aromatic 150	CP32	aromatic hydrocarbon, naphthalene, trimethylbenzene, ASTM Designation: High Flash Aromatic Naphtha, Type II
Mineral Spirits	CP33	solvent naphtha (petroleum), medium aliphatic, ASTM Designation: Type I, Class C Mineral Spirits (0-2% aromatic); Stoddard Solvent
xylene	CP34	xylene(79-82%), ethylbenzene(18-20%), toluene (0-1%)
VM&P naphtha	CP35	solvent naphtha, light aliphatic, ASTM Designation: Type I VM&P Naphtha, Regular, 20 vol % max aromatics
Aromatic 100	CP36	light aromatic solvent naphtha, 1,2,4-trimethylbenzene, mixed xylenes, cumene, ASTM Designation: High Flash Aromatic Naphtha, Type I
Aromatic 150	CP37	heavy aromatic solvent naphtha, ASTM Designation: High Flash Aromatic Naphtha, Type II
isoparaffinic hydrocarbon	CP38	synthetic isoparaffinic hydrocarbon, ASTM Designation:Type III (Odorless), Class C Mineral Spirits (0-0.25% aromatic); Stoddard Solvent
paraffinic petroleum distillate	CP39	paraffinic petroleum distillate, ASTM Designation: Type I, Class A Mineral Spirits (8-22% aromatic), Regular; Stoddard Solvent
Xylene	CP40	aromatic hydrocarbon
Xylene	CP41	aromatic hydrocarbon
Aromatic 100	CP42	light aromatic solvent naphtha, 1,2,4-trimethylbenzene, mixed xylenes, cumene, ASTM Designation: High Flash Aromatic Naphtha, Type I
Mineral spirits	CP43	aliphatic hydrocarbons, Stoddard type, ASTM Designation: Type IV (Low Dry Point), Class B Mineral Spirits (2-8% aromatic), Rule 66; Stoddard Solvent

Figure 4 - Sample Chromatograms, Illustrating Effect of Column on Separating VM&P components

100m PDMS column



60 m Carbowax column

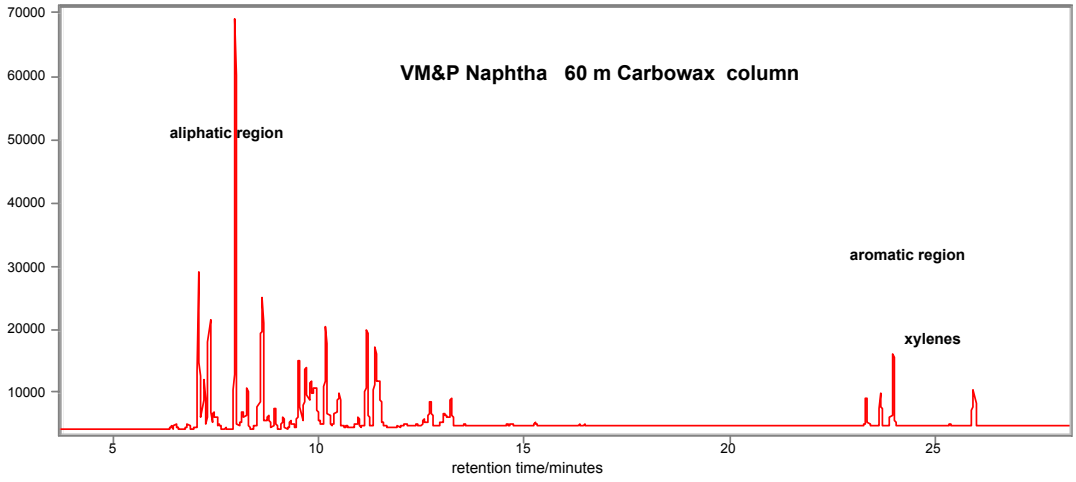
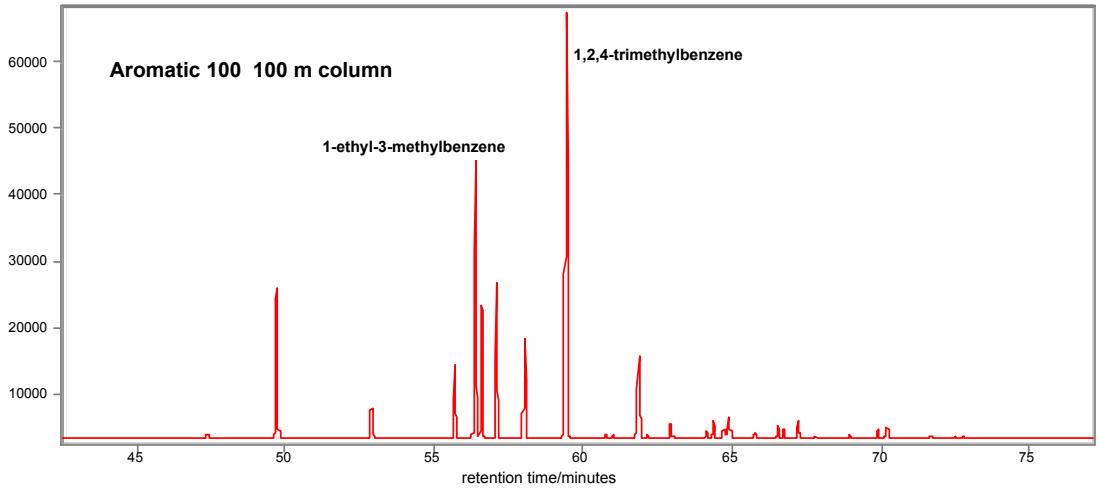
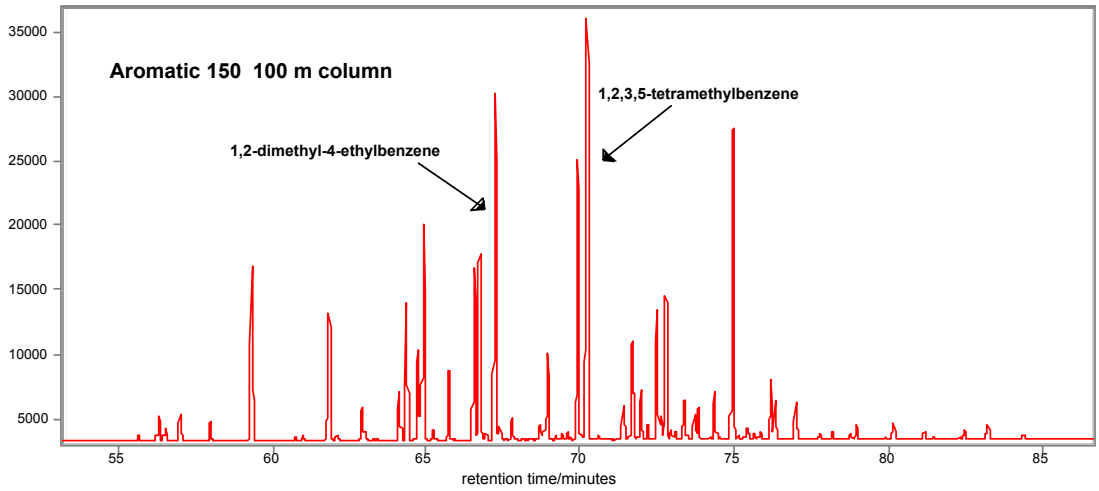


Figure 5 - Sample Chromatograms for Aromatic 100 and Aromatic 150 Solvents





V. Results

Completion of Task 2 activities resulted in the production of the database discussed earlier. The database may be accesed by pointing a web browser to http://www.arb.ca.gov/db/solvents/solvents.htm .

Task 3 activities produced species profiles for 43 samples of hydrocarbon solvents. These results were presented in two formats, consistent with discussions with ARB staff. From the detailed species profiles, "summary" sheets were prepared, based on mass percent by carbon and hydrocarbon type. The format of these summary sheets is shown in Figure 6. For the purposes of these summaries, the hydrocarbons were placed into one of four categories:

- Normal paraffins
- Isoparaffins
- Cyclic paraffins
- Unidentified paraffins
- Aromatics

Results of this form are tabulated in Appendix C.

Detailed species profiles are listed in Appendix D.

Figure 6 – Summary Sheet Format

Product	Distillat'n Range	Carbon Number Distribution, Wt%																Composition, Wt %
		C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	Total	
																		n-PAR
																		i-PAR
																		c-PAR
																		u-PAR
																		AROM

VI. Summary and Conclusions

In this study, a database of physical and chemical properties for common solvents was prepared. It is planned that ARB will make this database available to the public, through its web site. The purpose of this database is to allow rapid evaluation of solvent properties, with an ultimate goal of encouraging the conversion to less reactive solvents, where feasible.

As a second part of this project, the composition of emissions from common solvents was examined in detail. A total of 43 samples were analyzed, and distinct individual species profiles were generated. Virtually all organic components in these samples were identified, producing what can be described as "total organic compound" (TOC) speciation.

To produce these results, a number of analytical methodologies were employed. Samples of solvents were analyzed by a combination of GC-FID and GC-MS, using two GC columns of different polarity. This allowed for the ready identification of aromatic species, even in the presence of a large number of other hydrocarbon constituents.

The procedures in this study produced highly detailed species profiles, with as many as several hundred individual components being identified. For most of the samples, virtually 100% of the total organic mass was identified and quantitated. In the more complex samples, there were some instances in which positive identification of the exact stereoisomer was not possible. In these cases, it was usually possible to determine the number of carbon atoms (based on retention index) and the type of hydrocarbon (aliphatic vs. aromatic). Results for such components were reported on a basis of "other", by carbon number.

These species profiles will be useful in support of ongoing reactivity-based research involving the ozone-forming ability of hydrocarbon solvent mixtures. The detailed compositions provided for common hydrocarbon mixtures should allow the verification of models based on the Maximum Incremental Reacticity (MIR) scale. In addition, they should be helpful in evaluating the suitability of the "Binning" method for hydrocarbon mixtures.

Appendix A – List of Solvents in Database

Alcohols	CAS number
1-butanol	71363
1-propanol	71238
2-butanol	78922
2-ethyl-1-hexanol	104767
2-methyl-2-propanol	75650
2-propanol	67630
benzyl alcohol	100516
cyclohexanol	108930
ethanol	64175
isobutanol	78831
methanol	67561

Esters	
2-butoxyethyl acetate	112072
2-ethoxyethyl acetate	111159
2-methoxyethyl acetate	110496
butyl acetate	123864
dimethyl adipate	627930
dimethyl glutarate	1119400
dimethyl succinate	106650
dipropylene glycol methyl ether acetate	88917220
ethyl acetate	141786
ethyl-3-ethoxypropionate	763699
glyceryl triacetate	102761
isobutyl acetate	110190
isobutyl isobuytrate	97858
isopentyl acetate	123922
isopropyl acetate	108214
methyl acetate	79209
n-amyl acetate	628637
n-propyl acetate	109604
propylene glycol ethyl ether acetate	54839246
propylene glycol methyl ether acetate	108656
t-butyl acetate	540885

Glycols	
2-methyl-2,4-pentanediol	107415
diethylene glycol	111466
dipropylene glycol	111466
ethylene glycol	107211
propylene glycol	57556

Glycol Ethers	
1-methoxy-2-propanol	107982
2-butoxyethanol	111762
diethylene glycol monoethyl ether	111900
diethylene glycol monomethyl ether	111773
diethylene glycol mono-n-butyl ether	112345
dipropylene glycol methyl ether	34590948
dipropylene glycol mono butyl ether	29911282
dipropylene glycol n-butyl ether	29911271
propylene glycol monobutyl ether	5131668
propylene glycol mono-t-butyl ether	57018527
propylene glycol n-propyl ether	1569013

Halogenated	
1,1,1-trichloroethane	71556
1,1,2-trichloroethylene	79016
1,4-dichlorobenzene	106467
chlorobenzene	108907
methylene chloride	75092
monochlorotoluene	25168052
parachlorobenzotrifluoride	98566

Hydrocarbons	
Aromatic 100	
Aromatic 150	
cyclohexane	
diesel Fuel #2	
d-limonene	
ethylbenzene	
heptane	
heptanes	
hexane	
hexanes	
hydrotreated heavy naphthenic distillate	
kerosene	
lactol spirits	
meta-xylene	
methylcyclohexane	
methylcyclopentane	
mineral oil	
Mineral Spirits, Type IA	
Mineral Spirits, Type IB	
Mineral Spirits, Type IC	
Mineral Spirits, Type IIA	
Mineral Spirits, Type IIB	
Mineral Spirits, Type IIC	
Mineral Spirits, Type IIIC	
Mineral Spirits, Type IVA	

Mineral Spirits, Type IVB	
Mineral Spirits, Type IVC	
ortho-Xylene	
para-Xylene	
Pine oil	
toluene	
VM&P Naptha, Type I	
VM&P Naptha, Type II	
VM&P Naptha, Type III	
VM&P Naptha, Type IV	
Xylenes (Mixture)	

Ketones	
acetone	67641
cyclohexanone	108941
diacetone alcohol	123422
diisobutyl ketone	108838
isophorone	78591
methyl amyl ketone	110430
methyl ethyl ketone	78933
methyl isoamyl ketone	110123
methyl isobutyl ketone	108101
methyl isopropyl ketone	563804
methyl propyl ketone	107879

Miscellaneous	
2-cyano-2-propenoic acid, ethyl ester	7085850
acetic acid	64197
acrolein	107028
decamethylcyclopentasiloxane	541026
decamethyltetrasiloxane	141628
dodecamethylcyclohexasiloxane	540976
dodecamethylpentasiloxane	141639
hexamethylcyclotrisiloxane	541059
hexamethyldisiloxane	107460
methyltrimethoxysilane	1185553
methyltris(trimethylsiloxy)silane	17928288
octamethylcyclotetrasiloxane	556672
octamethyltrisiloxane	107517
pentane-1,5-dial	111308
tetrahydrofuran	109999
tetrakis(trimethylsiloxy)silane	3555473

Nitrogenous	
2-amino-2-methyl-1-propanol	124685
diethanolamine	111422
ethanolamine	141435
N-methylpyrrolidone	872504
triethylamine	121448

Propellants	
1,1,1,2-tetrafluoroethane	811972
1,1-difluoroethane	75376
butane	106978
dimethyl ether	115106
isobutane	75285
propane	74986

Appendix B – Standard Operating Procedures for Sampling and Analysis

Summary

Hydrocarbon mixtures are analyzed by gas chromatography using different capillary columns. All hydrocarbon mixtures are analyzed on both a 60 meter Carbowax™ column and on a 100 meter polydimethylsiloxane (PDMS) column. The CW column gives good separation of aliphatic compounds and aromatic compounds. Aliphatic compounds are not retained well on a CW column and tend to elute well ahead of most aromatic compounds. Detection is by flame ionization (FID) and confirmation is by GC/MS. Solid phase microextraction (SPME) preferentially adsorbs aromatic compound over aliphatic compounds and may be used to enhance the FID signal for aromatic compounds.

1. Apparatus

1.1 *SPME Sampling Apparatus and Fibers* --- manual SPME holders fitted with a 65 µm Carbowax™/Divinylbenzene (CW/DVB) fiber assembly.

1.2 *Gas Chromatograph, FID Detection* - Any capillary gas chromatograph equipped with a flame ionization detector and temperature programming capability may be used. Electronic flow control, which gives a constant carrier gas flow, is highly recommended.

1.2.1 Table 1. Standard FID Instrument Conditions (Polydimethylsiloxane column)

Detector:	Flame ionization
Column:	100 m x 0.25 mm Polydimethylsiloxane, 0.5 µm film thickness
Carrier Gas:	Helium
Flow Rate:	1.3 mL per minute (20.4 cm per second)
Split Ratio:	200 to 1
Temperatures, ^{O}C	
Inlet:	260 ^{O}
Detector:	270 ^{O}
Initial:	40 ^{O} for 15 minutes
Rate:	2^{O} per minute to 200 ^{O}, hold 10 minutes
Injection Volume:	0.05 to 0.10 µL

1.2.2 Table 2. FID Instrument Conditions (Carbowax™ column)

Detector:	Flame ionization
Column:	60 m x 0.25 mm Carbowax™ , 0.5 µm film thickness
Carrier Gas:	Helium
Flow Rate:	1.0 mL per minute
Split Ratio:	200 to 1
Temperatures, ^{O}C	
Inlet	260 ^{O}
Detector	270 ^{O}
Initial	50 ^{O} for 10 minutes
Rate 1	5 ^{O} per minute to 250 ^{O}, hold 10 minutes
Injection Volume	0.05 to 0.10 µL

1.3 *Electronic Data Acquisition System* --- Any data acquisition and integration device used for quantitation of these analyses must meet or exceed these minimum requirements:

1.3.1 Capacity for at least 250 peaks/analysis.
1.3.3 Normalized area percent calculation with response factors.
1.3.3 Identification of individual components by retention time.
1.3.4 Noise and spike rejection capability.
1.3.5 Sampling rates for fast (<1 s) peaks.

1.3.6 Positive and negative sloping baseline correction.
1.3.7 Peak detection sensitivity for narrow and broad peaks.
1.3.8 Perpendicular drop and tangent skimming as needed

2. Column and Fiber Conditioning

2.1 The capillary columns should be conditioned according to the manufacturer's recommendation. The columns may then be used indefinitely without further conditioning.
2.2 The SPME fibers should be conditioned and used according to the manufacturer's recommendation.
2.3 The SPME fiber should be inserted into a 260^0 C injection port for 30 seconds prior to daily use.

3. Reagents and Materials

3.1 Purity of Reagents - Reagent grade chemicals shall be used in all tests. Unless otherwise indicated, all reagents shall conform to the available specifications of the Committee on Analytical Reagents of the American Chemical Society. Other grades may be used, provided it is first ascertained that the reagent is of sufficiently high purity to permit its use without lessening the accuracy of the determination.
3.2 *Carrier gas* , Helium of 99.995% or higher purity.
3.3 *n-pentane, n-hexane, n-heptane, n-octane, n-nonane, n-decane, n-undecane, n-dodecane, and n-tridecane*, *toluene*, 99+ mol %.
3.4 Reference Alkylate, reference Naphtha, and reference Reformate, actual refinery streams used in ASTM Method D 5134.[9]
3.5 Piano *Isoparaffins, Naphthenes and Aromatics* Calibration standards. These mixtures contain 104 characterized hydrocarbons and are commercially available. [9]

4. Preparation of Standards

4.1 Chromatograph the reference standards listed in 3.3, 3.4, and 3.5 and determine the linear retention indexes of all components.

4.2 When SPME/GC is performed using a 60 m x 0.25mm Carbowax™ column, there is a dramatic change in elution order of the aromatic hydrocarbons compared to the aliphatic hydrocarbons. The linear retention indices compared to those obtained using standard conditions change as follows:

Compound	Retention Index, PDMS column	Retention Index, Carbowax™ column
benzene	647.5	954.0
toluene	755.4	1056.0
ethylbenzene	850.8	1146.1
m-xylene	859.4	1161.0
p-xylene	860.4	1154.2
o-xylene	881.8	1204.4
isopropylbenzene	914.3	1192.3
propylbenzene	944.4	1231.4
1,3,5-trimethylbenzene	959.9	1268.3
1,2,4-trimethylbenzene	984.7	1308.1
1,2,3-trimethylbenzene	1012.4	1369.6

This phenomenon makes it possible to obtain a chromatogram in which the aromatic hydrocarbons are substantially separated from the aliphatic hydrocarbons. Additionally, since the SPME fiber tends to adsorb compounds in proportion to the vapor pressure of that compound in the headspace, peak areas for potential interfering aliphatic compounds are minimized.

5. Split Injection Linearity

5.1 The choice of split ratio used is dependent upon the split linearity characteristics of the particular and sample capacity of the column. Overloading the column may cause loss of resolution for some compounds and, since overloaded peaks are skewed, variance in retention times. This can lead to erroneous component identification. During column evaluations and split linearity studies, watch for any skewed peaks that may indicate overload. Note the component size and where possible, avoid conditions leading to this problem during actual analyses.
5.2 Splitting injector linearity should be established to determine proper quantitative parameters and limits. Use a standard mixture of 10 to 20 pure (99+ %) components, covering the boiling range of this test method. To prevent losses due to volatility, do not use any compounds lighter than hexane.
5.3 Inject and integrate this standard under the following conditions, using the conditions listed in Table 3. Split ratio may be determined by direct flow measurement or by calculation as shown in ASTM Method D 5134. Faster temperature programming may be used as long as the components are eluted as discrete peaks.

Injection Temperature: 200^0C	Split: 100:1 Sample: 0.2, 0.5, 1.0 µL
	Split: 200:1 Sample: 0.2, 0.5, 1.0 µL
Injection Temperature: 250^0C	Split: 100:1 Sample: 0.2, 0.5, 1.0 µL
	Split: 200:1 Sample: 0.2, 0.5, 1.0 µL

5.4 Calculate the concentration of each compound in the mixture by area normalization with response factors. Determine the relative error of the calculated concentrations from the known concentrations,

$$\%\quad relative\quad error = \frac{100 * (concentration, calc - concentration, known)}{concentration, known}$$

5.5 Use only those combinations of conditions from 5.3 which result in 3 % or less relative error. This is the splitter linearity range.

Appendix C – Individual Species Profile Summaries

Product	Distillation Range	Carbon Number Distribution, Wt%												Composition,Wt%				
		C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	Total	
CP1	240-305°F 116-152°C			0.35	11.93	22.49	1.97										36.73	n-PAR
				2.35	9.07	4.49											15.92	i-PAR
						0.20	0.89										1.09	c-PAR
				1.47	10.93	10.60	0.39										23.40	u-PAR
				0.56	20.98	1.32											22.86	AROM
CP2	310-400°F 154-204°C					5.69	12.94	1.98	0.06								20.68	n-PAR
						1.53	18.50	8.75	0.72								29.51	i-PAR
					0.09	10.34	15.87	0.53									26.82	c-PAR
						0.09	0.86	4.39	0.42								5.75	u-PAR
					0.37	11.13	5.42	0.09	0.23								17.24	AROM
CP3	379-405°F 193-207°C						0.15	2.27	1.21								3.63	n-PAR
								7.45	36.36	2.37							46.18	i-PAR
							5.67	18.40	8.70								32.77	c-PAR
								4.81	6.46	3.93							15.20	u-PAR
							2.22										2.22	AROM
CP4	240-285°F 116-141°C				18.36	1.04											19.40	n-PAR
					19.88	13.19											33.07	i-PAR
				0.91	20.92	24.44											46.27	c-PAR
						1.26											1.26	u-PAR
																	0.00	AROM

Product	Distillation Range	Carbon Number Distribution, Wt%																Composition, Wt%
		C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	Total	
CP5	185-220°F 85-104°C		0.90	7.23	0.08												8.21	n-PAR
			0.22	8.22	20.89												29.33	i-PAR
			3.79	33.67	18.12												55.58	c-PAR
					0.03												0.03	u-PAR
			0.31	6.54													6.85	AROM
CP6	324-402°F 161-205°C				0.07	2.23	4.42	2.40	0.66								9.79	n-PAR
						1.39	12.13	5.50	5.76	0.33							25.11	i-PAR
					0.26	16.32	22.01	0.50	0.47								39.55	c-PAR
						0.10	2.36	7.65	4.56	0.47							15.14	u-PAR
					0.41	4.20	4.51	0.65	0.63								10.39	AROM
CP7	320-348°F 160-176°C																	n-PAR
																		i-PAR
																		c-PAR
																		u-PAR
					1.71	89.45	8.10	0.65	0.09								100.00	AROM
CP8	343-407°F 173-208°C																	n-PAR
																		i-PAR
																		c-PAR
																		u-PAR
						12.96	71.19	15.34	0.51								100.00	AROM

Product	Distillation Range	Carbon Number Distribution, Wt%																Composition, Wt%
		C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	Total	
CP10	307-389°F 153-198°C					1.99	4.07	1.90	0.90								8.85	n-PAR
						2.14	11.37	5.76	4.37	0.41							24.06	i-PAR
					0.20	16.82	24.99	0.59	0.24								42.84	c-PAR
						0.32	2.92	7.08	2.92								13.23	u-PAR
					0.23	3.89	5.25	1.04	0.62								11.02	AROM
CP11	300-365°F 149-185°C					7.95	10.60	0.99									19.53	n-PAR
						1.14	15.19	11.01									27.33	i-PAR
						17.00	24.24	3.35									44.59	c-PAR
						0.81	1.27	3.09	0.09								5.25	u-PAR
						0.69	2.61										3.29	AROM
CP12	300-365°F 149-185°C				0.05	5.93	15.84	2.13									23.95	n-PAR
						2.25	11.96	15.00									29.21	i-PAR
					0.30	12.59	21.73	2.15									36.78	c-PAR
						0.56	1.10	4.95	0.29								6.90	u-PAR
						1.97	1.13		0.07								3.16	AROM
CP13	320-348°F 160-176°C					0.07											0.07	n-PAR
							0.17										0.17	i-PAR
							0.12										0.12	c-PAR
																		u-PAR
					1.72	85.89	11.07	0.89	0.06								99.64	AROM

Product	Distillation Range	Carbon Number Distribution, Wt%																Composition, Wt%
		C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	Total	
CP14	244-287°F 118-142°C				19.10	1.15											20.25	n-PAR
					20.33	11.70											32.04	i-PAR
				0.98	27.51	17.65											46.14	c-PAR
						0.90											0.90	u-PAR
				0.01	0.41	0.25											0.67	AROM
CP15	351-415°F 177-231°C					2.68	7.00	2.98	0.66								13.33	n-PAR
						0.92	12.22	6.14	4.35	0.44							24.07	i-PAR
						15.39	20.25	3.68	1.85								41.17	c-PAR
							1.66	3.37	1.15	0.18							6.36	u-PAR
					0.92	5.31	6.99	0.62	1.21								15.06	AROM
CP16	351-415°F 177-231°C						1.12	25.74	3.86	0.06							30.77	n-PAR
								19.21	15.81	0.99							36.01	i-PAR
							1.98	18.24	0.64								20.86	c-PAR
								0.54	9.97	1.85							12.36	u-PAR
																	0.00	AROM
CP17	343-407°F 173-208°C																	n-PAR
																		i-PAR
							0.06										0.06	c-PAR
																		u-PAR
						2.06	90.88	6.83	0.18								99.94	AROM

Product	Distillation Range	Carbon Number Distribution, Wt%											Composition,Wt%					
			Total	C19	C18	C17	C16	C15	C14	C13	C12	C11	C10	C9	C8	C7	C6	C5	
CP18	312-387°F 156-198°C		30.30								3.14	25.77	1.38						n-PAR
			37.61							0.89	14.66	22.01	0.06						i-PAR
			21.71								0.60	18.31	2.80						c-PAR
			10.38							0.95	8.23	1.20							u-PAR
			0.00																AROM
CP19	280-286°F 138-141°C																		n-PAR
																			i-PAR
																			c-PAR
																			u-PAR
			100.00											0.54	99.25	0.21			AROM
CP20	312-387°F 156-198°C		10.22								0.93	2.39	4.67	2.17	0.06				n-PAR
			23.46							0.78	4.80	5.77	10.71	1.33	0.06				i-PAR
			41.74									0.32	23.56	17.86					c-PAR
			14.15							0.57	3.21	7.00	3.07	0.31					u-PAR
			10.43								0.70	0.69	2.91	5.28	0.85				AROM
CP21	320-348°F 160-176°C																		n-PAR
			0.11										0.11						i-PAR
																			c-PAR
																			u-PAR
			99.89									0.02	9.23	88.94	1.70				AROM

Product	Distillation Range	Carbon Number Distribution, Wt%																Composition, Wt%
		C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	Total	
CP22	343-407°F 173-208°C																	n-PAR
																		i-PAR
																		c-PAR
																		u-PAR
						7.87	82.67	9.19	0.27								100.00	AROM
CP23	260-288°F 126-142°C				6.73	2.18											8.91	n-PAR
					8.70	12.74	1.02										22.47	i-PAR
				0.91	37.98	24.63	0.16										63.68	c-PAR
					0.70	2.88	0.84										4.43	u-PAR
					0.20	0.32											0.52	AROM
CP24	244-287°F 118-142°C				6.79	2.22											9.01	n-PAR
					8.76	12.06	0.47										21.29	i-PAR
				0.92	39.85	22.66	0.12										63.55	c-PAR
						3.62	1.55										5.18	u-PAR
					0.66	0.31											0.97	AROM
CP25	318-380°F 159-194°C				0.06	2.19	4.97	2.58	1.01								10.83	n-PAR
						1.38	9.90	7.09	4.83	0.98							24.18	i-PAR
						16.32	22.44	0.38									39.14	c-PAR
						0.09	3.47	8.01	2.78	0.48							14.84	u-PAR
					0.36	5.33	3.61	0.94	0.77								11.01	AROM

Product	Distillation Range	Carbon Number Distribution, Wt%															Composition,Wt%	Total
		C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19		
CP26	307-389°F 153-198°C					2.17	4.67	2.27	0.87								n-PAR	9.98
						0.94	8.01	5.77	2.44	0.60							i-PAR	17.76
						16.97	21.52	0.74	0.51								c-PAR	39.74
							5.98	7.15	4.34								u-PAR	17.47
					0.93	5.39	7.23	0.58	0.93								AROM	15.05
CP27	280-286°F 138-141°C																n-PAR	
																	i-PAR	
																	c-PAR	
																	u-PAR	
				0.03	99.56	0.41											AROM	100.00
CP28	195-225°F 91-107°C			13.81	9.04	0.05											n-PAR	22.89
				8.83	30.32	1.08											i-PAR	40.23
				24.23	10.22												c-PAR	34.45
					0.20												u-PAR	0.20
				2.23													AROM	2.23
CP29	285-335°F 141-168°C				1.58	13.44	3.34	0.10									n-PAR	18.47
					0.79	11.93	18.77										i-PAR	31.48
					5.49	31.78	6.78										c-PAR	44.05
					0.06	0.65	4.66	0.14									u-PAR	5.51
				0.12		0.37											AROM	0.49

Product	Distillation Range	Carbon Number Distribution, Wt%											Composition,Wt%				
			Total	C19	C18	C17	C16	C15	C14	C13	C12	C11	C10	C9	C8	C7	C6	C5					
CP30	240-285°F 116-141°C		22.39										0.19	7.80	13.67	0.74			n-PAR	i-PAR	c-PAR	u-PAR	AROM
			42.82										3.22	26.70	12.39	0.52			i-PAR				
			27.69											11.03	15.41	1.25			c-PAR				
			1.17										0.11	1.05					u-PAR				
			5.93											0.41	5.12	0.40			AROM				
CP31	320-348°F 160-176°C																		n-PAR	i-PAR	c-PAR	u-PAR	AROM
																			i-PAR				
																			c-PAR				
																			u-PAR				
			100.00								0.01	0.11	7.90	82.41	9.57				AROM				
CP32	343-407°F 173-208°C																		n-PAR	i-PAR	c-PAR	u-PAR	AROM
			0.07											0.07					i-PAR				
																			c-PAR				
																			u-PAR				
			99.93								0.46	14.11	74.32	10.76	0.27				AROM				
CP33	324-402°F 162-205°C		23.62								1.97	6.85	13.75	1.05					n-PAR	i-PAR	c-PAR	u-PAR	AROM
			30.78							0.19	6.06	9.12	14.52	0.89					i-PAR				
			22.94									0.46	16.81	5.67					c-PAR				
			21.91							0.21	2.88	9.14	9.55	0.13					u-PAR				
			0.75										0.75						AROM				

Product	Distillation Range	Carbon Number Distribution, Wt%																Composition, Wt%
		C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	Total	
CP34	280-286°F 138-141°C																	n-PAR
																		i-PAR
																		c-PAR
																		u-PAR
				0.03	99.93	0.04											100.00	AROM
CP35	247-282°F 119-139°C				16.04	1.03											17.07	n-PAR
					14.18	13.57											27.75	i-PAR
				0.16	21.18	22.32											43.66	c-PAR
						1.81											1.81	u-PAR
					9.59	0.12											9.72	AROM
CP36	320-348°F 160-176°C																	n-PAR
																		i-PAR
																		c-PAR
																		u-PAR
					3.28	88.02	8.66	0.04									100.00	AROM
CP37	343-407°F 173-208°C																	n-PAR
																		i-PAR
																		c-PAR
																		u-PAR
						12.45	69.97	17.06	0.53								100.00	AROM

Product	Distillation Range	Carbon Number Distribution, Wt%																Composition, Wt%
		C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	Total	
CP38	320-351°F 160-177°C																	n-PAR
							38.30	55.10	6.60								100.00	i-PAR
																		c-PAR
																		u-PAR
																		AROM
CP39	315-397°F 157-203°C				0.05	5.39	13.24	2.15	0.10								20.93	n-PAR
						1.26	15.34	5.83	0.59								23.02	i-PAR
					0.09	9.63	16.51	0.21									26.44	c-PAR
						0.12	4.62	7.10	0.24								12.08	u-PAR
					0.66	10.73	5.83	0.07	0.26								17.54	AROM
CP40	280-286°F 138-141°C																	n-PAR
																		i-PAR
																		c-PAR
																		u-PAR
				0.09	99.64	0.27											100.00	AROM
CP41	280-286°F 138-141°C																	n-PAR
																		i-PAR
																		c-PAR
																		u-PAR
				0.39	99.06	0.55											100.00	AROM

Product	Distillation Range	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	Total	Composition,Wt%
CP42	320-348ºF 160-176ºC																	n-PAR
																		i-PAR
																		c-PAR
																		u-PAR
					5.37	80.74	13.61	0.27	0.01								100.00	AROM
CP43	300-365ºF 149-185ºC				0.52	8.83	13.94	3.69	0.07								27.06	n-PAR
					0.20	6.09	22.89	15.34	0.90								45.41	i-PAR
					0.87	8.27	14.11	0.25									23.50	c-PAR
						0.19	1.07	2.32	0.46								4.04	u-PAR
																	0.00	AROM
CP44	347-392ºF 175-200ºC																	n-PAR
							65.40	31.60									97.00	i-PAR
							1.50	1.50									3.00	c-PAR
																		u-PAR
																		AROM

(Columns C5–C19 and Total are under the spanning header "Carbon Number Distribution, Wt%".)

Appendix D – Detailed Species Profiles

CP1, VM&P Naphtha	CAS#	fraction
Octane	111659	0.1193
Nonane	111842	0.1060
Benzene, 1,3-dimethyl	108383	0.1011
Octane, 2-methyl	3221612	0.0474
Octane, 3-methyl	2216333	0.0457
Benzene, 1,2-dimethyl	95476	0.0410
Benzene, 1,4-dimethyl	106423	0.0383
Heptane, 2-methyl	592278	0.0383
Octane, 4-methyl	2216344	0.0353
Heptane, 3-methyl	589811	0.0341
Benzene, ethyl	100414	0.0295
Cyclohexane, ethyl	1678917	0.0285
Heptane, 2,5-dimethyl	2216300	0.0253
Cyclohexane, 1,3-dimethyl, cis	638040	0.0236
Cyclohexane, methyl	108872	0.0235
Heptane, 2,6-dimethyl	1072055	0.0219
Heptane	142825	0.0147
Heptane, 4-methyl	2216322	0.0126
Heptane, 3,5-dimethyl	926829	0.0122
Heptane, 2,4-dimethyl	2213232	0.0117
Cyclohexane, 1,4-dimethyl, cis	624293	0.0107
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0105
Cyclohexane, 1,2-dimethyl, trans	6876239	0.0104
u-Paraffin, C10		0.0089
Cyclohexane, 1,4-dimethyl, trans	2207047	0.0089
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0084
Pentane, 3-ethyl-2,2-dimethyl	16747323	0.0068
Heptane, 3-ethyl	15869804	0.0062
Cyclohexane, propyl	1678928	0.0058
Octane, 3,6-dimethyl	15869940	0.0058
Cyclohexane, 1,2-dimethyl, cis	2207014	0.0057
Toluene	108883	0.0056
Hexane, 2,4-dimethyl	116502444	0.0054
Cyclohexane, 1-ethyl-4-methyl, cis	4926787	0.0049
Heptane, 4-ethyl	2216322	0.0049
Hexane, 3-ethyl	619998	0.0049
Hexane, 2,3-dimethyl	584941	0.0048
Hexane, 2,5-dimethyl	592132	0.0047
Heptane, 3,3-dimethyl	4032864	0.0047
Octane, 3,5-dimethyl	15869939	0.0046
Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0044
Decane	124185	0.0039
Benzene, 1-ethyl-3-methyl	620144	0.0036
Hexane, 3-methyl	589344	0.0035
Nonane, 4-methyl	17301949	0.0034
Nonane, 2-methyl	871830	0.0033
Cyclohexane, 1,1-dimethyl	590669	0.0029
Heptane, 3,4-dimethyl	922281	0.0028
Cyclohexane, 1,1,2-trimethyl	7094260	0.0028

Benzene, isopropyl	98828	0.0026
Hexane, 3,4-dimethyl	583482	0.0026
Nonane, 3-methyl	5911046	0.0024
Cyclohexane, 1,2,3-trimethyl, ctc	1678815	0.0024
Benzene, 1,2,4-trimethyl	95636	0.0020
u-Paraffin, C9		0.0020
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0019
Cyclopentane, 1-methyl-2-propyl	3728572	0.0018
Benzene, 1,3,5-trimethyl	108678	0.0016
Benzene, propyl	103651	0.0014
Cyclohexane, 1-ethyl-2-methyl, trans	4923788	0.0014
Benzene, 1-ethyl-4-methyl	622968	0.0012
Hexane, 3,3-dimethyl	563166	0.0011
Hexane, 2,2-dimethyl	590738	0.0008
Benzene, 1-ethyl-2-methyl	611143	0.0008
Cyclohexane, 1,3,5-trimethyl	1839630	0.0005
Total		1.0000

CP2, Mineral Spirits Rule 66	CAS#	fraction
Decane	124185	0.1294
Nonane	111842	0.0569
u-Paraffin, C11		0.0439
Benzene, 1,2,4-trimethyl	95636	0.0373
Nonane, 4-methyl	17301949	0.0320
Octane, 3,6-dimethyl	15869940	0.0301
Nonane, 2,6-dimethyl	17302282	0.0279
Cyclohexane, propyl	1678928	0.0267
Heptane, 3-ethyl-2-methyl	14676290	0.0245
Nonane, 2-methyl	871830	0.0245
Benzene, 1,2,3-trimethyl	526738	0.0245
i-Paraffin, C11		0.0238
Nonane, 3-methyl	5911046	0.0235
c-Paraffin, C10		0.0212
Undecane	1120214	0.0198
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0173
Octane, 2,3-dimethyl	7146603	0.0162
Cyclohexane, 1-ethyl-2,3-dimethyl	7058051	0.0158
Cyclohexane, butyl	1678939	0.0150
Cyclohexane, isobutyl	1678984	0.0149
Benzene, 1-ethyl-3-methyl	620144	0.0148
Octane, 3-ethyl	5881174	0.0129
Cyclohexane, 1,1,2,3-tetramethyl	6783922	0.0126
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0125
Cyclohexane, isopropyl	696297	0.0120
Benzene, 1-isopropyl-4-methyl	99876	0.0118
Cyclohexane, 1-methyl-4-propyl, trans	28352423	0.0118
Benzene, 1,3,5-trimethyl	108678	0.0114
Cyclohexane, 1-methyl-3-propyl, trans	34522195	0.0109
Nonane, 3-ethyl	17302113	0.0098
Cyclopentane, butyl	2040951	0.0096
u-Paraffin, C10		0.0086
Cyclohexane, 1-methyl-3-propyl, cis	42806757	0.0080
Benzene, 1-methyl-3-propyl	1074437	0.0076
Decane, 2-methyl	6975980	0.0074
Benzene, 1-ethyl-2-methyl	611143	0.0074
Nonane, 3-ethyl	17302113	0.0074
Cyclohexane, 1-isopropyl-2-methyl	16580237	0.0063
Octane, 3-methyl	2216333	0.0062
Benzene, 1-ethyl-4-methyl	622968	0.0062
Octane, 2,5-dimethyl	15869893	0.0061
Octane, 4-methyl	2216344	0.0060
Nonane, 3,7-dimethyl	17302328	0.0057
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0056
Indene, octahydro, trans	3296502	0.0055
Benzene, propyl	103651	0.0054
c-Paraffin, C11		0.0053
Cyclohexane, 1,2-diethyl, trans	13990959	0.0052
Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0046

Heptane, 2,3,4-trimethyl	52896954	0.0045
Benzene, isopropyl	98828	0.0044
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0044
u-Paraffin, C12		0.0042
Cyclohexane, 1,3-diethyl, trans	13990948	0.0040
Cyclohexane, 1-methyl-4-propyl, cis	28954429	0.0040
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0037
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0037
Cyclohexane, 1,2,3-trimethyl, cct	7667552	0.0036
Benzene, 1-methyl-2-propyl	1074175	0.0035
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0033
Benzene, 1,4-diethyl	105055	0.0033
Octane, 2,2-dimethyl	15869871	0.0033
i-Paraffin, C10		0.0033
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0030
Benzene, 1-methylpropyl	538932	0.0030
Cyclopentane, 1-methyl-2-propyl	3728572	0.0030
Octane, 3,3-dimethyl	4110445	0.0029
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0027
Benzene, 1,3-dimethyl	108383	0.0027
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0026
Cyclohexane, 1,3-diethyl, cis	13991430	0.0026
Benzene, 1,3-diethyl	141935	0.0025
Benzene, 1-methyl-4-propyl	1074551	0.0025
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0023
Cyclohexane, 1,1,3-trimethyl	3073663	0.0022
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0021
Cyclohexane, 1,1,2-trimethyl	7094260	0.0021
Cyclohexane, 1-ethyl-2-methyl, cis	4923777	0.0020
Benzene, 1-isopropyl-2-methyl	527844	0.0020
Decane, 3-methyl	13151343	0.0019
Cyclohexane, 1,2,3-trimethyl, ctc	1678815	0.0019
Decane, 4-methyl	2847725	0.0018
Cyclopentane, isobutyl	3788327	0.0017
Decane, 2,6-dimethyl	13150817	0.0017
Nonane, 4-ethyl	5911057	0.0017
Nonane, bicyclo[3.3.1]	280659	0.0016
Decane, 4,6-dimethyl	17312491	0.0015
Benzene, 1,2,3,5-tetramethyl	527537	0.0014
Cyclohexane, 1,2,3-trimethyl, ccc	1839889	0.0013
Octane, 3,5-dimethyl	15869939	0.0013
Decane, 2,8-dimethyl	17312526	0.0013
Cyclohexane, 1-ethyl-2-methyl, trans	4923788	0.0012
Decane, 2,9-dimethyl	1002171	0.0012
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0011
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0010
Indan, 1-methyl	767588	0.0010
Pentane, 3,3-diethyl	1067205	0.0010
Undecane, 5-methyl	1632708	0.0010
cis-Decalin	493016	0.0010
Benzene, ethyl	100414	0.0010
Benzene, 1,2,3,4-tetramethyl	488233	0.0010

Benzene, 1,2,3-trimethyl-5-ethyl	31366004	0.0009
Cyclohexane, ethyl	1678917	0.0009
u-Paraffin, C9		0.0009
Heptane, 2,6-dimethyl	1072055	0.0007
Octane, 2-methyl	3221612	0.0007
Benzene, 1,2,4,5-tetramethyl	95932	0.0006
Heptane, 3,4-dimethyl	922281	0.0006
Decane, 2,7-dimethyl	17312515	0.0006
Dodecane	112403	0.0006
Benzene, 1,2-diethyl	135013	0.0005
Total		1.0001

CP3, Light HC Solvent	CAS#	fraction
c-Paraffin, C11		0.1483
c-Paraffin, C12		0.0870
u-Paraffin, C12		0.0646
u-Paraffin, C11		0.0481
Decane, 2,6-dimethyl	13150817	0.0466
Undecane, 2-methyl	7045718	0.0393
u-Paraffin, C13		0.0393
trans-Decalin	493027	0.0341
Decane, 2,8-dimethyl	17312526	0.0316
Decane, 3-methyl	13151343	0.0278
Cyclohexane, pentyl	4292926	0.0272
Undecane, 3-methyl	1002433	0.0265
Undecane, 4-methyl	2980690	0.0252
Decane, 2-methyl	6975980	0.0251
Decane, 4,6-dimethyl	17312491	0.0246
Decane, 2,9-dimethyl	1002171	0.0240
undecane	1120214	0.0227
i-Paraffin, C12		0.0226
Decane, 2,3-dimethyl	17312446	0.0201
Decane, 2,7-dimethyl	17312515	0.0191
Decane, 3-ethyl	17085960	0.0167
Dodecane	112403	0.0121
Undecane, 2,6-dimethyl	17301234	0.0119
Decane, 2,4-dimethyl	2801845	0.0115
Indan, 4-methyl	824226	0.0105
Nonane, 2,6-dimethyl	17302282	0.0096
Decane, 5-ethyl	17302362	0.0096
Decane, 2,5-dimethyl	17312504	0.0093
Indan, 1-methyl	767588	0.0091
Cyclohexane, butyl	1678939	0.0084
Naphthalene, decahydro-2-methyl	2958761	0.0084
Decane, 3,6-dimethyl	17312537	0.0084
1-Decene, 8-ethyl	104256088	0.0082
Decane, 4,7-dimethyl	17312560	0.0063
Undecane, 5-methyl	1632708	0.0058
Nonane, 3,7-dimethyl	17302328	0.0053
Decane, 3,7-dimethyl	17312548	0.0046
Decane, 3,8-dimethyl	17312559	0.0035
Nonane, 4-ethyl	5911057	0.0035
Nonane, 5-ethyl	17302124	0.0031
i-Paraffin,C13		0.0026
Cyclohexane, 1,2-diethyl, cis	824431	0.0026
Indan, 5-methyl	874351	0.0026
Dodecane, 2-methyl	1560970	0.0018
Undecane, 3-ethyl	17312582	0.0016
Cyclohexane, 1,3-diethyl, cis	13991430	0.0016
Decane	124185	0.0015
c-Paraffin, C10		0.0015
Undecane, 2,6,10-trimethyl	6864535	0.0013

Dodecane, 5-methyl	17453939	0.0013
Dodecane, 4-methyl	6117971	0.0013
Cyclohexane, 1-methyl-4-propyl, trans	28352423	0.0011
Cyclohexane, 1-methyl-3-propyl, trans	34522195	0.0011
Cyclohexane, 1,4-diethyl, trans	13990937	0.0011
Cyclohexane, 1,2-diethyl, trans	13990959	0.0011
Dodecane, 3-methyl	17312571	0.0010
Undecane, 5-ethyl	17453940	0.0008
Cyclohexane, isobutyl	1678984	0.0008
Cyclohexane, 1-methyl-3-propyl, cis	42806757	0.0007
Cyclohexane, 1,3-diethyl, trans	13990948	0.0007
Cyclohexane, 1-methyl-4-propyl, cis	28954429	0.0006
Cyclohexane, 1,4-diethyl, cis	13990926	0.0006
Cyclohexane, 1,3-diethyl, cis	13991430	0.0006
Total		0.9995

CP4, VM&P Naphtha	CAS#	fraction
Octane	111659	0.1836
Heptane, 2-methyl	592278	0.0799
Cyclohexane, 1,3-dimethyl, cis	638040	0.0682
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0653
Cyclohexane, 1,3,5-trimethyl, ccc	1795273	0.0563
Heptane, 3-methyl	589811	0.0547
Cyclohexane, 1,2-dimethyl, trans	6876239	0.0322
Cyclohexane, 1,3-dimethyl, trans	2207036	0.0293
Cyclohexane, 1,4-dimethyl, trans	2207047	0.0280
Heptane, 2,6-dimethyl	1072055	0.0266
Heptane, 4-methyl	2216322	0.0228
Cyclohexane, 1,1,3-trimethyl	3073663	0.0222
Octane, 3-methyl	2216333	0.0202
Heptane, 2,4-dimethyl	2213232	0.0199
Octane, 2-methyl	3221612	0.0181
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0163
Heptane, 2,3-dimethyl	3074713	0.0140
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0140
Octane, 4-methyl	2216344	0.0138
u-Paraffin, C9		0.0126
Cyclohexane, 1,3,5-trimethyl	1839630	0.0117
Hexane, 2,3-dimethyl	584941	0.0114
Pentane, 3-ethyl-2,2-dimethyl	16747323	0.0112
Nonane	111842	0.0104
Cyclopentane, 1-ethyl-1-methyl	16747505	0.0096
Cyclohexane, 1,2,3-trimethyl, ctc	1678815	0.0096
Cyclohexane, methyl	108872	0.0091
Cyclohexane, 1,2,4-trimethyl, ccc	1678804	0.0084
Hexane, 3-ethyl	619998	0.0082
Cyclopentane, 1,1,3,3-tetramethyl	50876330	0.0073
Cyclohexane, 1,2,4-trimethyl	2234755	0.0072
Hexane, 2,4-dimethyl	116502444	0.0066
Cyclopentane, 1-ethyl-3-methyl,cis	2613663	0.0064
Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0063
Cyclopentane, 1,1,2-trimethyl	4259001	0.0062
Hexane, 3,4-dimethyl	583482	0.0058
Cyclopentane, 1-ethyl-3-methyl,trans	2613652	0.0056
Cyclohexane, 1,2-dimethyl, cis	2207014	0.0055
Cyclopentane, 1-ethyl-2-methyl, cis	930892	0.0054
Cyclopentane, 1-methyl-2-propyl	3728572	0.0049
Cyclohexane, 1,1,4-trimethyl	7094271	0.0049
Cyclopentane, 1,2,3-trimethyl, ctc	19374460	0.0046
Cyclohexane, 1,2,3-trimethyl	1678973	0.0046
Hexane, 2,5-dimethyl	592132	0.0043
Cyclopentane, 1,2,4-trimethyl, ctc	18679306	0.0042
Heptane, 4-ethyl	2216322	0.0040
Hexane, 3,3-dimethyl	563166	0.0027
Heptane, 3-ethyl	15869804	0.0027
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0027

Pentane, 2,3,4-trimethyl	565753	0.0024
Cyclopentane, isopropyl	3875512	0.0016
Heptane, 3,3-dimethyl	4032864	0.0015
Cyclopentane, 1,3-diethyl, trans	62016608	0.0015
Cyclopentane, 1,1,3-trimethyl	4516692	0.0013
Cyclohexane, 1-ethyl-4-methyl, cis	4926787	0.0012
Cyclohexane, 1,1-dimethyl	590669	0.0009
Total		1.0000

CP5, Lactol Spirits	CAS#	fraction
Hexane, 2,2-dimethyl	590738	0.1687
Cyclopentane, 1,2-dimethyl, trans	822504	0.0987
Cyclopentane, 1,2,3-trimethyl, ctc	19374460	0.0799
Heptane	142825	0.0723
Toluene	108883	0.0654
Cyclopentane, 1,3-dimethyl, trans	1759586	0.0617
Cyclopentane, 1,3-dimethyl, cis	2532583	0.0566
Cyclopentane, 1,2,4-trimethyl, ctc	18679306	0.0529
c-Paraffin, C7		0.0421
Cyclopentane, ethyl	1640897	0.0386
Cyclopentane, methyl	96377	0.0379
Hexane, 3-methyl	589344	0.0348
Cyclopentane, 1,1,3-trimethyl	4516692	0.0342
Cyclohexane, methyl	108872	0.0242
Hexane, 2-methyl	591764	0.0217
Pentane, 2,3-dimethyl	565593	0.0182
Cyclopentane, 1,1-dimethyl	1638262	0.0147
Hexane, 2,3-dimethyl	584941	0.0095
Hexane	110543	0.0090
Hexane, 2,4-dimethyl	116502444	0.0088
Heptane, 2-methyl	592278	0.0062
Cyclohexane, 1,4-dimethyl, trans	2207047	0.0049
Hexane, 3-ethyl	619998	0.0044
Pentane, 2,4-dimethyl	108087	0.0035
Pentane, 2,3,4-trimethyl	565753	0.0032
Benzene	71432	0.0031
Hexane, 2,3-dimethyl	584941	0.0030
Cyclohexane, 1,1-dimethyl	590669	0.0024
Hexane, 3,4-dimethyl	583482	0.0020
Hexane, 3,3-dimethyl	563166	0.0020
Cyclopentane, 1-ethyl-2-methyl, cis	930892	0.0016
Cyclopentane, 1,1,2-trimethyl	4259001	0.0015
Pentane, 2,2-dimethyl	590352	0.0014
Pentane, 3,3-dimethyl	562492	0.0013
Pentane, 3-methyl	96140	0.0013
Cyclopentane, 1-ethyl-1-methyl	16747505	0.0010
i-Paraffin, C7		0.0010
Pentane, 2-methyl	107835	0.0010
Heptane, 3-methyl	589811	0.0009
Cyclopentane, 1-ethyl-1-methyl	16747505	0.0009
Octane	111659	0.0008
Cyclohexane, 1,3-dimethyl, cis	638040	0.0007
c-Paraffin, C8		0.0006
Butane, 2,2,3-trimethyl	464062	0.0005
Cyclohexane, 1,4-dimethyl, cis	624293	0.0004
u-Paraffin, C8		0.0003
Cyclohexane, 1,2-dimethyl, trans	6876239	0.0001
Total		1.0000

CP6, Mineral Spirits	CAS#	fraction
u-Paraffin, C11		0.0765
u-Paraffin, C12		0.0456
Decane	124185	0.0442
Cyclohexane, 1,1,2,3-tetramethyl	6783922	0.0246
Undecane	1120214	0.0240
u-Paraffin, C10		0.0236
Nonane, bicyclo[3.3.1]	280659	0.0230
Nonane	111842	0.0223
c-Paraffin, C10		0.0223
Cyclohexane, 1,3-diethyl, cis	13991430	0.0202
Nonane, 2,6-dimethyl	17302282	0.0200
Cyclohexane, propyl	1678928	0.0199
Octane, 3,6-dimethyl	15869940	0.0193
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0171
Cyclohexane, 1-ethyl-2-methyl, trans	4923788	0.0162
Benzene, 1,2,4-trimethyl	95636	0.0146
Decane, 4-methyl	2847725	0.0142
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0133
Cyclohexane, butyl	1678939	0.0125
Nonane, 2-methyl	871830	0.0122
Octane, 2,3-dimethyl	7146603	0.0122
Cyclohexane, 1,2-diethyl, cis	824431	0.0118
Heptane, 3-ethyl-2-methyl	14676290	0.0117
Cyclohexane, 2-ethyl-1,3-dimethyl	7045672	0.0117
Decane, 2,5-dimethyl	17312504	0.0117
Cyclohexane, isobutyl	1678984	0.0111
Octane, 3,3-dimethyl	4110445	0.0105
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0105
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0101
Nonane, 3-methyl	5911046	0.0096
Octane, 4-ethyl	15869860	0.0095
Cyclohexane, 1-ethyl-2,3-dimethyl	7058051	0.0094
Cyclohexane, 1-methyl-3-propyl, trans	34522195	0.0093
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0092
Decane, 2,8-dimethyl	17312526	0.0091
Cyclohexane, 1-methyl-4-propyl, trans	28352423	0.0090
Decane, 2-methyl	6975980	0.0086
Cyclohexane, 1,2,3-trimethyl, cct	7667552	0.0086
Cyclohexane, 1,3-diethyl, cis	13991430	0.0083
Cyclohexane, 1-isopropyl-2-methyl	16580237	0.0080
Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0077
Cyclohexane, 1,4-diethyl, cis	13990926	0.0076
Octane, 2,6-dimethyl	2051301	0.0076
Nonane, 4-methyl	17301949	0.0075
Cyclohexane, 1-ethyl-2-methyl, cis	4923777	0.0072
Cyclohexane, 1-methyl-4-propyl, cis	28954429	0.0070
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0069
Cyclohexane, 1,2,3-trimethyl, ccc	1839889	0.0067
Dodecane	112403	0.0066

Cyclohexane, isopropyl	696297	0.0062
Octane, 2,7-dimethyl	1072168	0.0062
Cyclohexane, 1,2-diethyl, trans	13990959	0.0062
Octane, 3-ethyl	5881174	0.0061
Benzene, 1-ethyl-4-methyl	622968	0.0059
Octane, 3-methyl	2216333	0.0059
Benzene, 1-ethyl-3-methyl	620144	0.0056
Cyclohexane, 1,3-diethyl, trans	13990948	0.0055
Benzene, 1,3,5-trimethyl	108678	0.0053
Decane, 4,5-dimethyl	17312468	0.0052
Cyclohexane, 1,1,2-trimethyl	7094260	0.0051
c-Paraffin, C11		0.0050
Cyclohexane, 1,1,4-trimethyl	7094271	0.0048
u-Paraffin, C13		0.0047
c-Paraffin,C12		0.0047
Pentane, 3,3-diethyl	1067205	0.0047
Decane, 3,6-dimethyl	17312537	0.0046
Cyclohexane, 1,2,4-trimethyl, ccc	1678804	0.0045
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0043
Decane, 2,7-dimethyl	17312515	0.0041
Decane, 3-methyl	13151343	0.0041
Cyclohexane, 1-methyl-2-propyl, trans	42806779	0.0039
Undecane, 4-methyl	2980690	0.0038
Benzene, 1,2,3,4-tetramethyl	488233	0.0038
Cyclopentane, 1-methyl-2-propyl	3728572	0.0038
Cyclopentane, isobutyl	3788327	0.0037
Octane, 4,5-dimethyl	15869962	0.0034
Benzene, 1-methylpropyl	538932	0.0033
i-Paraffin, C11		0.0031
Cyclopentane, butyl	2040951	0.0031
Indan, 5-methyl	874351	0.0031
Benzene, 1,2,3-trimethyl-5-ethyl	31366004	0.0031
Benzene, isopropyl	98828	0.0030
Decane, 5-ethyl	17302362	0.0030
Indan, 2-methyl	824635	0.0030
Cyclohexane, 1-ethyl-4-methyl, cis	4926787	0.0029
Heptane, 2,3,4-trimethyl	52896954	0.0029
Decane, 4,7-dimethyl	17312560	0.0029
Decane, 3,8-dimethyl	17312559	0.0028
Undecane, 2,6-dimethyl	17301234	0.0026
Indan, 4-methyl	824226	0.0026
Cyclohexane, ethyl	1678917	0.0026
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0026
Benzene, 1-methyl-3-propyl	1074437	0.0025
Benzene, 1,2,3,5-tetramethyl	527537	0.0025
Nonane, 3-ethyl	17302113	0.0025
Nonane, 4-ethyl	5911057	0.0024
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0024
Decane, 2,3-dimethyl	17312446	0.0023
Octane, 2-methyl	3221612	0.0023
Benzene, 1,4-dimethyl	106423	0.0023
Undecane, 5-methyl	1632708	0.0023

Indan	496117	0.0022
Benzene, 1-ethyl-2-methyl	611143	0.0021
Undecane, 3-methyl	1002433	0.0020
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0020
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0020
Benzene, propyl	103651	0.0020
Naphthalene	91203	0.0018
Benzene, 1,3-dimethyl	108383	0.0018
Benzene, 1-isopropyl-3-methyl	535773	0.0018
Benzene, butyl	104518	0.0018
Benzene, 1,2-diethyl	135013	0.0016
Cyclohexane, 1,2,3-trimethyl	1678973	0.0016
Decane, 3-ethyl	17085960	0.0016
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0015
Benzene, 1,4-dimethyl-2-propyl	3042500	0.0015
Cyclohexane, 1,4-diethyl, trans	13990937	0.0015
Benzene, 1,3-diethyl	141935	0.0014
Indan, 1-methyl	767588	0.0014
Benzene, 1,2,3-trimethyl	526738	0.0014
Decane, 3,5-dimethyl	17312480	0.0013
Nonane, 2-methyl	871830	0.0013
Benzene, 1,2,4,5-tetramethyl	95932	0.0013
Benzene, 1,4-diethyl	105055	0.0013
Benzene, 1,3-dimethyl-4-propyl	874419	0.0013
Octane, 2,5-dimethyl	15869893	0.0013
Benzene, 1-methyl-4-propyl	1074551	0.0012
Benzene, 1-isopropyl-4-methyl	99876	0.0011
u-Paraffin, C9		0.0010
Octane, 4-methyl	2216344	0.0010
Decane, 2,9-dimethyl	1002171	0.0010
Octane	111659	0.0007
Dodecane, 4-methyl	6117971	0.0007
Cyclohexane, 1,3,5-trimethyl, ccc	1795273	0.0006
c-Paraffin, C9		0.0006
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0005
Benzene, 1-methyl-2-propyl	1074175	0.0005
Benzene, 1,3-dimethyl-5-propyl	3982647	0.0005
Total		0.9999

CP7, Aromatic 100		
Compound	CAS	fraction
Benzene, 1,2,4-trimethyl	95636	0.3321
Benzene, 1-ethyl-3-methyl	620144	0.1815
Benzene, 1,3,5-trimethyl	108678	0.0962
Benzene, 1-ethyl-4-methyl	622968	0.0818
Benzene, 1,2,3-trimethyl	526738	0.0693
Benzene, 1-ethyl-2-methyl	611143	0.0641
Benzene, propyl	103651	0.0442
Benzene, 1,2-dimethyl	95476	0.0171
Benzene, isopropyl	98828	0.0157
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0129
Benzene, 1-methyl-3-propyl	1074437	0.0102
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0100
Indan	496117	0.0095
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0064
Benzene, 1,2,3,5-tetramethyl	527537	0.0064
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0054
Benzene, 1,2,4,5-tetramethyl	95932	0.0046
Benzene, 1,3-diethyl	141935	0.0038
Benzene, 1-methyl-4-propyl	1074551	0.0032
Benzene, 1-methyl-2-propyl	1074175	0.0030
Benzene, 1,4-diethyl	105055	0.0024
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0016
Benzene, isobutyl	538932	0.0015
Benzene, 1-methylpropyl	135988	0.0015
Benzene, pentyl	538681	0.0014
Benzene, 1,2,3,4-tetramethyl	488233	0.0013
Benzene, 1-isopropyl-3-methyl	535773	0.0012
Unknown C10 Aromatics		0.0010
Benzene, 2-ethyl-1,3,5-trimethyl	3982670	0.0009
Benzene, 1,4-diisopropyl	100185	0.0009
Benzene, 2,4-dimethyl-1-propyl	61827858	0.0009
Benzene, 1,3-diethyl-4-methyl	1758856	0.0008
Indan, 4-methyl	824226	0.0007
Indan, 5-methyl	874351	0.0007
Benzene, 1,3-dimethyl-5-propyl	3982647	0.0007
Tetralin	119642	0.0007
Naphthalene	91203	0.0006
Indan, 4,7-dimethyl	6682719	0.0006
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0005
Benzene, 1,2-diethyl	135013	0.0005
Benzene, 1,4-dimethyl-2-propyl	3042500	0.0005
Benzene, 1,3-diethyl-5-methyl	2050240	0.0004
Benzene, 1-isopropyl-2-methyl	527844	0.0003
Benzene, 1,2-dimethyl-4-propyl	3982669	0.0002
Indan, 1-methyl	767588	0.0002
Naphthalene, 2-methyl	91576	0.0001
Indan, 2-methyl	824635	0.0001

Total		1.0000

CP8, Aromatic 150		
Compound	CAS	fraction
Benzene, 1,2,3,5-tetramethyl	527537	0.1080
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0889
Benzene, 1,2,4,5-tetramethyl	95932	0.0754
Naphthalene	91203	0.0655
Benzene, 1,2,3-trimethyl	526738	0.0524
Benzene, 1,2,4-trimethyl	95636	0.0523
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0443
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0415
Benzene, 1,2,3,4-tetramethyl	488233	0.0387
Benzene, 1-methyl-3-propyl	1074437	0.0339
Benzene, butyl	104518	0.0300
Indan, 5-methyl	874351	0.0299
Indan, 4-methyl	824226	0.0262
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0253
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0251
Benzene, 1-methyl-2-propyl	1074175	0.0163
Benzene, 1-ethyl-2,4,5-trimethyl	17851273	0.0147
Indan, dimethyl	53563670	0.0142
Benzene, 1-methyl-4-propyl	1074551	0.0131
Benzene, 1,4-diethyl	105055	0.0131
Benzene, 1,3-dimethyl-5-propyl	3982647	0.0126
Benzene, 1,2-dimethyl-4-propyl	3982669	0.0124
Benzene, 1,3-diethyl	141935	0.0117
Indan	496117	0.0117
Benzene, 1-ethyl-2,3,5-trimethyl	18262856	0.0093
Benzene, 2-ethyl-1,3,4-trimethyl	61827870	0.0091
Benzene, dimethyl, isopropyl	25321293	0.0087
Benzene, pentamethyl	700129	0.0079
Naphthalene, 2-methyl	91576	0.0075
Benzene, 1,3-diethyl-4-methyl	1758856	0.0073
Benzene, 1,3-diethyl-5-methyl	2050240	0.0069
Unknown C11 Aromatics		0.0062
Benzene, 1,4-dimethyl-2-propyl	3042500	0.0061
Tetralin	119642	0.0061
Benzene, 2,4-dimethyl-1-propyl	61827858	0.0060
Benzene, ethyl isopropyl	26573160	0.0054
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0051
Benzene, 1,3,5-trimethyl	108678	0.0043
Benzene, 1-ethyl-2-methyl	611143	0.0032
Benzene, 1-ethyl-3-methyl	620144	0.0032
Benzene, 1-butyl-3-methyl	1595046	0.0029
Benzene, 1,3-diisopropyl	99627	0.0029
Benzene, 1,2-diethyl-4-methyl	13732804	0.0028
Benzene, 2-ethyl-1,3,5-trimethyl	3982670	0.0025
Indan, 4,7-dimethyl	6682719	0.0025
Benzene, 1,2-diethyl	135013	0.0024
Benzene, 1,2-dimethyl-3-propyl	17059448	0.0024

Indan, 1-methyl	767588	0.0024
Benzene, pentyl	538681	0.0024
Unknown C10 Aromatics		0.0023
Benzene, 1-ethyl-4-methyl	622968	0.0019
Benzene, 1,3,5-triethyl	102250	0.0018
Naphthalene, 1-methyl	90120	0.0016
Benzene, 1-isopropyl-3-methyl	535773	0.0013
Indan, 2-methyl	824635	0.0013
Benzene, 1,3-diethyl-2-methyl	13632956	0.0012
Benzene, 1,4-dimethyl-2-ethenyl	2039896	0.0011
Benzene, 1-isopropyl-2-methyl	527844	0.0010
Benzene, 1-methylpropyl	135988	0.0009
Benzene, isobutyl	538932	0.0008
Benzene, 1,3-dimethyl-2-propyl	17059459	0.0007
Benzene, propyl	103651	0.0006
Benzene, 1,2-dimethyl-4-ethenyl	27831136	0.0005
Benzene, 1,4-diisopropyl	100185	0.0004
Total		1.0000

CP10, Mineral Spirits	CAS#	fraction
u-Paraffin, C11		0.0708
Decane	124185	0.0407
Cyclohexane, 1,1,2,3-tetramethyl	6783922	0.0297
u-Paraffin, C12		0.0292
u-Paraffin, C10		0.0292
Nonane, bicyclo[3.3.1]	280659	0.0245
c-Paraffin, C10		0.0235
Nonane, 2,6-dimethyl	17302282	0.0229
Cyclohexane, 1,3-diethyl, cis	13991430	0.0226
Octane, 3,6-dimethyl	15869940	0.0206
Cyclohexane, propyl	1678928	0.0205
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0204
Nonane	111842	0.0199
Cyclohexane, butyl	1678939	0.0195
Undecane	1120214	0.0190
Nonane, 3-methyl	5911046	0.0176
Cyclohexane, 1-ethyl-2-methyl, trans	4923788	0.0169
Benzene, 1,2,4-trimethyl	95636	0.0145
Decane, 4-methyl	2847725	0.0145
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0142
Cyclohexane, 1,2-diethyl, cis	824431	0.0133
Cyclohexane, isobutyl	1678984	0.0127
Nonane, 2-methyl	871830	0.0123
Octane, 2,3-dimethyl	7146603	0.0122
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0122
Cyclohexane, 2-ethyl-1,3-dimethyl	7045672	0.0116
Benzene, 1-isopropyl-3-methyl	535773	0.0108
Cyclohexane, 1-methyl-4-propyl, trans	28352423	0.0107
Cyclohexane, 1-methyl-3-propyl, trans	34522195	0.0107
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0103
Cyclohexane, 1,2,3-trimethyl, cct	7667552	0.0096
Decane, 2,5-dimethyl	17312504	0.0094
Cyclohexane, 1-isopropyl-2-methyl	16580237	0.0093
Dodecane	112403	0.0090
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0088
Cyclohexane, 1,4-diethyl, cis	13990926	0.0087
Nonane, 4-methyl	17301949	0.0087
Cyclohexane, 1-methyl-4-propyl, cis	28954429	0.0085
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0083
Decane, 2-methyl	6975980	0.0083
Cyclohexane, 1-ethyl-2,3-dimethyl	7058051	0.0081
Octane, 2,6-dimethyl	2051301	0.0079
Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0078
Octane, 4-ethyl	15869860	0.0078
Cyclohexane, isopropyl	696297	0.0076
Cyclohexane, 1,2,3-trimethyl, ccc	1839889	0.0076
Decane, 2,8-dimethyl	17312526	0.0071
Octane, 2,7-dimethyl	1072168	0.0069
Cyclohexane, 1,3-diethyl, cis	13991430	0.0067

Cyclohexane, 1-ethyl-2-methyl, cis	4923777	0.0067
Cyclohexane, 1,3-diethyl, trans	13990948	0.0066
Cyclohexane, 1,2-diethyl, trans	13990959	0.0065
Heptane, 3,5-dimethyl	926829	0.0064
Octane, 3-ethyl	5881174	0.0060
c-Paraffin, C11		0.0059
Octane, 3-methyl	2216333	0.0059
Cyclohexane, 1,1,2-trimethyl	7094260	0.0053
Benzene, 1,3,5-trimethyl	108678	0.0052
Heptane, 3-ethyl-2-methyl	14676290	0.0051
Decane, 4,5-dimethyl	17312468	0.0050
Cyclopentane, isobutyl	3788327	0.0050
Benzene, 1-ethyl-3-methyl	620144	0.0049
Cyclohexane, 1,2,4-trimethyl, ccc	1678804	0.0048
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0047
Cyclohexane, 1-methyl-2-propyl, trans	42806779	0.0043
Decane, 3-methyl	13151343	0.0042
Pentane, 3,3-diethyl	1067205	0.0042
Octane, 3,3-dimethyl	4110445	0.0041
Benzene, 1,2,3,4-tetramethyl	488233	0.0041
Cyclopentane, 1-methyl-2-propyl	3728572	0.0039
Decane, 3,6-dimethyl	17312537	0.0034
Benzene, isopropyl	98828	0.0034
Undecane, 2,6-dimethyl	17301234	0.0032
Benzene, 1-ethyl-2-methyl	611143	0.0032
Cyclopentane, butyl	2040951	0.0032
i-Paraffin, C11		0.0032
u-Paraffin, C9		0.0032
Undecane, 2-methyl	7045718	0.0031
Cyclohexane, 1,3,5-trimethyl, ccc	1795273	0.0031
Cyclohexane, 1-ethyl-4-methyl, cis	4926787	0.0031
Benzene, 1-ethyl-4-methyl	622968	0.0030
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0030
Benzene, 1,2,3-trimethyl-5-ethyl	31366004	0.0029
Benzene, 1,3-dimethyl-5-propyl	3982647	0.0028
Heptane, 2,3,4-trimethyl	52896954	0.0027
Decane, 4,7-dimethyl	17312560	0.0025
Octane, 2-methyl	3221612	0.0025
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0024
Benzene, 1,3-diethyl	141935	0.0024
c-Paraffin,C12		0.0024
Nonane, 3-ethyl	17302113	0.0023
Benzene, propyl	103651	0.0022
Nonane, 4-ethyl	5911057	0.0022
Undecane, 5-methyl	1632708	0.0022
Indan, 5-methyl	874351	0.0021
Benzene, butyl	104518	0.0021
Decane, 3,8-dimethyl	17312559	0.0020
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0019
Indan, 2-methyl	824635	0.0019
Benzene, 1,2,4,5-tetramethyl	95932	0.0019
Indan, 4-methyl	824226	0.0018

Benzene, 1-isopropyl-4-methyl	99876	0.0018
Cyclohexane, 1,2,3-trimethyl	1678973	0.0017
Undecane, 4-methyl	2980690	0.0017
Benzene, 1-methylpropyl	538932	0.0016
Benzene, 1,4-dimethyl-2-propyl	3042500	0.0016
Octane, 2,5-dimethyl	15869893	0.0016
Benzene, 1,3-dimethyl	108383	0.0015
Decane, 5-ethyl	17302362	0.0015
Cyclohexane, 1,4-diethyl, trans	13990937	0.0015
Benzene, 1,2,3-trimethyl	526738	0.0015
Benzene, 1-methyl-2-propyl	1074175	0.0015
Benzene, 1-methyl-4-propyl	1074551	0.0014
Benzene, 1,4-diethyl	105055	0.0013
Decane, 2,3-dimethyl	17312446	0.0013
Benzene, 1,2,3,5-tetramethyl	527537	0.0013
Benzene, 1-methyl-3-propyl	1074437	0.0012
Indan, 1-methyl	767588	0.0012
Benzene, 1,3-dimethyl-4-propyl	874419	0.0012
Decane, 2,7-dimethyl	17312515	0.0012
Heptane, 2,3-dimethyl	3074713	0.0012
Octane, 4-methyl	2216344	0.0012
Benzene, 1-isopropyl-3-methyl	535773	0.0011
Benzene, 1,3-diethyl-2-methyl	13632956	0.0011
Undecane, 3-methyl	1002433	0.0011
c-Paraffin, C9		0.0010
Naphthalene	91203	0.0010
Indan	496117	0.0010
Decane, 3-ethyl	17085960	0.0009
Dodecane, 4-methyl	6117971	0.0009
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0008
Benzene, 1,3,5-triethyl	934805	0.0008
Benzene, 1,4-dimethyl	106423	0.0008
Decane, 3,5-dimethyl	17312480	0.0008
Cyclopentane, propyl	2040962	0.0007
Benzene, 1,3-dimethyl-4-propyl	874419	0.0007
Benzene, 1,2-diethyl	135013	0.0007
Cyclohexane, 1,2-dimethyl, trans	6876239	0.0007
Decane, 2,9-dimethyl	1002171	0.0007
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0006
Cyclopentane, 1,2,4-trimethyl, cct	4850286	0.0006
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0005
Heptane	142825	0.0000
Total		1.0000

CP11, Mineral Spirits	CAS#	fraction
Decane	124185	0.1060
Nonane	111842	0.0795
c-Paraffin, C10		0.0574
Nonane, 4-methyl	17301949	0.0401
c-Paraffin, C11		0.0329
u-Paraffin, C11		0.0309
Cyclopentane, butyl	2040951	0.0265
Octane, 2,6-dimethyl	2051301	0.0259
Cyclohexane, isobutyl	1678984	0.0253
Nonane, 2,6-dimethyl	17302282	0.0248
Nonane, 2-methyl	871830	0.0232
Cyclohexane, 1,2,3-trimethyl, ccc	1839889	0.0231
Nonane, 3-methyl	5911046	0.0215
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0206
Cyclohexane, butyl	1678939	0.0182
Benzene, 1-methyl-2-propyl	1074175	0.0168
Cyclohexane, 2-ethyl-1,3-dimethyl	7045672	0.0160
Decane, 4-methyl	2847725	0.0159
Heptane, 3-ethyl-2-methyl	14676290	0.0142
i-Paraffin, C11		0.0137
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0134
Decane, 3-methyl	13151343	0.0133
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0128
u-Paraffin, C10		0.0127
Nonane, 3,7-dimethyl	17302328	0.0126
Cyclohexane, 1-ethyl-2,3-dimethyl	7058051	0.0125
Octane, 2,3-dimethyl	7146603	0.0121
Cyclohexane, 1-ethyl-2-methyl, cis	4923777	0.0120
i-Paraffin, C11		0.0112
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0111
Nonane, 4-ethyl	5911057	0.0109
Cyclohexane, propyl	1678928	0.0105
Cyclohexane, 1-ethyl-2,4-dimethyl	61142696	0.0104
Cyclohexane, isopropyl	696297	0.0102
Undecane	1120214	0.0099
Cyclohexane, 1,1,2,3-tetramethyl	6783922	0.0091
Cyclohexane, 1-methyl-2-propyl, cis	4926710	0.0084
u-Paraffin, C9		0.0081
Cyclohexane, 1,3-diethyl, cis	13991430	0.0079
Cyclohexane, 1-isopropyl-2-methyl	16580237	0.0076
Cyclohexane, 1-methyl-4-propyl, trans	28352423	0.0075
Cyclohexane, 1-methyl-3-propyl, cis	42806757	0.0070
Cyclopentane, 1-methyl-2-propyl	3728572	0.0065
Cyclohexane, 1-methyl-2-propyl, trans	42806779	0.0063
Octane, 3,3-dimethyl	4110445	0.0062
Octane, 3-methyl	2216333	0.0060
Cyclohexane, 1,2,3-trimethyl	1678973	0.0056
Nonane, bicyclo[3.3.1]	280659	0.0052
Cyclohexane, 1,2-diethyl, trans	13990959	0.0050

Cyclohexane, 1,2,3-trimethyl, ctc	1678815	0.0048
Cyclohexane, 1-ethyl-2-methyl, trans	4923788	0.0047
Cyclohexane, 1-methyl-4-propyl, cis	28954429	0.0047
i-Paraffin, C11		0.0046
Octane, 4-methyl	2216344	0.0046
Cyclohexane, 1,2,3-trimethyl, cct	7667552	0.0045
Cyclohexane, 1,4-diethyl, cis	13990926	0.0043
Cyclohexane, 1,2,4-trimethyl, ccc	1678804	0.0041
Cyclohexane, 1,4-diethyl, trans	13990937	0.0039
Benzene, 1,2,4-trimethyl	95636	0.0036
Cyclohexane, 1,2,3-trimethyl	1678973	0.0036
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0036
Octane, 3,6-dimethyl	15869940	0.0035
Cyclopentane, 1-methyl-2-propyl	3728572	0.0032
Octane, 3-ethyl	5881174	0.0032
Decane, 2-methyl	6975980	0.0029
Benzene, 1-methylpropyl	538932	0.0029
Cyclohexane, 1,3-diethyl, trans	13990948	0.0028
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0025
Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0024
Indan, 1-methyl	767588	0.0024
Cyclohexane, 1-ethyl-4-methyl, cis	4926787	0.0022
Cyclopentane, 1,3-diethyl, trans	62016608	0.0020
Octane, 3,5-dimethyl	15869939	0.0020
Cyclohexane, 1-methyl-3-propyl, trans	34522195	0.0019
Cyclohexane, 1,3,5-trimethyl	1839630	0.0015
Benzene, 1,3,5-trimethyl	108678	0.0011
Benzene, 1,2,3-trimethyl	526738	0.0010
Indan, 2-methyl	824635	0.0010
Cyclopentane, isobutyl	3788327	0.0009
u-Paraffin, C12		0.0009
Cyclohexane, 1,1,3-trimethyl	3073663	0.0009
Heptane, 3,5-dimethyl	926829	0.0008
Benzene, 1-ethyl-3-methyl	620144	0.0007
Naphthalene, decahydro-2-methyl	2958761	0.0006
Benzene, 1,2,4,5-tetramethyl	95932	0.0005
Benzene, 1-ethyl-4-methyl	622968	0.0002
Benzene, propyl	103651	0.0002
Total		1.0000

CP12, Mineral Spirits	CAS#	fraction
Decane	124185	0.1584
Nonane	111842	0.0593
u-Paraffin, C11		0.0495
c-Paraffin, C10		0.0477
i-Paraffin, C11		0.0397
Nonane, 2,6-dimethyl	17302282	0.0334
Nonane, 2-methyl	871830	0.0278
Nonane, 3-methyl	5911046	0.0233
c-Paraffin, C11		0.0215
Undecane	1120214	0.0213
Cyclohexane, 1-ethyl-2,3-dimethyl	7058051	0.0183
Cyclohexane, 1-methyl-3-propyl, trans	34522195	0.0182
Cyclohexane, butyl	1678939	0.0181
Octane, 3,6-dimethyl	15869940	0.0175
Cyclohexane, 1-ethyl-2-methyl, trans	4923788	0.0170
Decane, 4-methyl	2847725	0.0166
Nonane, 3-ethyl	17302113	0.0158
Octane, 2,3-dimethyl	7146603	0.0158
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0156
Cyclohexane, propyl	1678928	0.0153
Cyclohexane, isobutyl	1678984	0.0138
Decane, 3-methyl	13151343	0.0134
Decane, 2-methyl	6975980	0.0131
Cyclohexane, 2-ethyl-1,3-dimethyl	7045672	0.0125
Cyclohexane, 1-ethyl-2,4-dimethyl	61142696	0.0113
Cyclohexane, 1-ethyl-2-methyl, cis	4923777	0.0112
Heptane, 3-ethyl-2-methyl	14676290	0.0111
u-Paraffin, C10		0.0110
Benzene, 1,2,4-trimethyl	95636	0.0102
Cyclohexane, 1-isopropyl-2-methyl	16580237	0.0099
Nonane, 3,7-dimethyl	17302328	0.0094
Octane, 4-methyl	2216344	0.0093
Cyclohexane, 1-methyl-4-propyl, trans	28352423	0.0093
Octane, 3-methyl	2216333	0.0092
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0086
Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0080
Cyclohexane, 1-methyl-2-propyl, trans	42806779	0.0072
Cyclohexane, 1,4-diethyl, cis	13990926	0.0072
Cyclohexane, 1,2,3-trimethyl	1678973	0.0071
Nonane, 4-methyl	17301949	0.0071
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0069
Cyclohexane, 1,2-diethyl, trans	13990959	0.0066
Nonane, 4-ethyl	5911057	0.0060
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0059
u-Paraffin, C9		0.0056
Cyclohexane, 1,4-diethyl, trans	13990937	0.0056
Cyclopentane, butyl	2040951	0.0053
Octane, 2,5-dimethyl	15869893	0.0049
Heptane, 2,3,4-trimethyl	52896954	0.0048

Cyclohexane, 1-ethyl-4-methyl, cis	4926787	0.0047
Cyclohexane, 1,2,3-trimethyl, cct	7667552	0.0044
Cyclohexane, 1,2,4-trimethyl, ccc	1678804	0.0042
Cyclohexane, 1-methyl-2-propyl, cis	4926710	0.0042
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0041
Benzene, 1,2,3-trimethyl	526738	0.0038
Cyclohexane, isopropyl	696297	0.0038
Indene, octahydro, trans	3296502	0.0037
Cyclohexane, 1-methyl-3-propyl, cis	42806757	0.0033
Cyclohexane, 1,2,3-trimethyl, ccc	1839889	0.0033
Octane, 3,5-dimethyl	15869939	0.0031
Cyclohexane, 1-methyl-4-propyl, cis	28954429	0.0031
Cyclopentane, propyl	2040962	0.0030
Benzene, 1-ethyl-4-methyl	622968	0.0030
u-Paraffin, C12		0.0029
Cyclohexane, 1,3-diethyl, cis	13991430	0.0028
Cyclopentane, 1-methyl-2-propyl	3728572	0.0027
Octane, 3-ethyl	5881174	0.0027
Nonane, 4-ethyl	5911057	0.0026
Cyclohexane, diethyl	1331437	0.0023
Heptane, 2,3-dimethyl	3074713	0.0023
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0021
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0020
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0018
Benzene, 1-methyl-3-propyl	1074437	0.0016
Cyclohexane, 1,2,3-trimethyl	1678973	0.0015
Benzene, 1-ethyl-3-methyl	620144	0.0015
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0014
Octane, 3,3-dimethyl	4110445	0.0014
Cyclohexane, 1,1,2,3-tetramethyl	6783922	0.0013
Cyclohexane, 1,3,5-trimethyl	1839630	0.0013
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0012
Benzene, isopropyl	98828	0.0012
Nonane, bicyclo[3.3.1]	280659	0.0011
Heptane, 3-ethyl	15869804	0.0011
Cyclopentane, isobutyl	3788327	0.0010
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0010
Indan, 1-methyl	767588	0.0010
Benzene, 1,2,4,5-tetramethyl	95932	0.0010
Cyclopentane, 1,3-diethyl, trans	62016608	0.0009
Heptane, 2,6-dimethyl	1072055	0.0007
Benzene, 1,2,3,5-tetramethyl	527537	0.0007
Cyclohexane, 1,1,3-trimethyl	3073663	0.0007
Octane	111659	0.0005
Octane, 3,5-dimethyl	15869939	0.0001
Total		1.0000

CP13, Aromatic 100		
Compound	CAS	fraction
Benzene, 1,2,4-trimethyl	95636	0.3166
Benzene, 1-ethyl-3-methyl	620144	0.1737
Benzene, 1,3,5-trimethyl	108678	0.0900
Benzene, 1-ethyl-4-methyl	622968	0.0785
Benzene, 1,2,3-trimethyl	526738	0.0668
Benzene, 1-ethyl-2-methyl	611143	0.0641
Benzene, propyl	103651	0.0438
Benzene, 1,2-dimethyl	95476	0.0172
Benzene, isopropyl	98828	0.0156
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0134
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0108
Benzene, 1-methyl-3-propyl	1074437	0.0108
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0102
Indan	496117	0.0097
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0071
Benzene, 1,2,3,5-tetramethyl	527537	0.0068
Unknown C10 Aromatics		0.0065
Benzene, 1-methyl-4-propyl	1074551	0.0060
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0059
Benzene, 1,2,4,5-tetramethyl	95932	0.0056
Benzene, 1,3-diethyl	141935	0.0044
Benzene, 1-methyl-2-propyl	1074175	0.0043
Benzene, isobutyl	538932	0.0043
Benzene, ethyl isopropyl	26573160	0.0030
Benzene, 1-methylpropyl	135988	0.0018
Benzene, dimethyl, isopropyl	25321293	0.0015
Benzene, 1-isopropyl-3-methyl	535773	0.0015
Benzene, 3-ethyl-1,2,4-trimethyl	41903417	0.0015
Benzene, 1,2,3,4-tetramethyl	488233	0.0014
Benzene, 1-isopropyl-4-methyl	99876	0.0014
Indan, 2-methyl	824635	0.0013
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0013
Indan, 5-methyl	874351	0.0012
Benzene, 1,3-dimethyl-5-propyl	3982647	0.0010
Benzene, 1,4-dimethyl-2-ethenyl	2039896	0.0009
Benzene, 1-isopropyl-2-methyl	527844	0.0009
Indan, 4-methyl	824226	0.0008
Benzene, 1,2-diethyl	135013	0.0008
Benzene, 1,3-diethyl-5-methyl	2050240	0.0008
Naphthalene	91203	0.0008
Nonane	111842	0.0007
Cyclohexane, butyl	1678939	0.0007
Benzene, 2,4-dimethyl-1-propyl	61827858	0.0006
Benzene, 1,4-diisopropyl	100185	0.0006
3-Methylnonane	5911046	0.0006
2-Methylnonane	871830	0.0006
Indan, 1-methyl	767588	0.0005

Cyclohexane, isobutyl	1678984	0.0005
4-Methylnonane	17301949	0.0005
Benzene, 1-ethyl-2,4,5-trimethyl	17851273	0.0004
Benzene, 1,2-dimethyl-4-propyl	3982669	0.0003
Benzene, 1,2-dimethyl-4-ethenyl	27831136	0.0002
Total		1.0000

CP14 , VM&P Naphtha	CAS#	fraction
Octane	111659	0.1910
Heptane, 2-methyl	592278	0.0821
Cyclopentane, propyl	2040962	0.0744
Cyclohexane, 1,3-dimethyl, cis	638040	0.0692
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0687
Heptane, 3-methyl	589811	0.0562
Cyclohexane, 1,2-dimethyl, trans	6876239	0.0327
Cyclohexane, 1,4-dimethyl, cis	624293	0.0300
Cyclohexane, 1,4-dimethyl, trans	2207047	0.0282
Heptane, 3,3-dimethyl	4032864	0.0234
Heptane, 4-methyl	2216322	0.0234
Octane, 3-methyl	2216333	0.0218
Heptane, 2,6-dimethyl	1072055	0.0212
Octane, 2-methyl	3221612	0.0197
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0170
Octane, 4-methyl	2216344	0.0149
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0148
Cyclohexane, 1,1,3-trimethyl	3073663	0.0122
Cyclohexane, 1,3,5-trimethyl	1839630	0.0121
Hexane, 2,3-dimethyl	584941	0.0116
Nonane	111842	0.0115
Cyclohexane, 1,2,3-trimethyl, ctc	1678815	0.0102
Cyclopentane, 1-ethyl-2-methyl, cis	930892	0.0094
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0094
u-Paraffin, C9		0.0090
Cyclohexane, 1,2,4-trimethyl, ccc	1678804	0.0089
Cyclohexane, methyl	108872	0.0086
Hexane, 3-ethyl	619998	0.0084
Heptane, 2,4-dimethyl	2213232	0.0076
Cyclohexane, 1,2,3-trimethyl	1678973	0.0075
c-Paraffin, C9		0.0073
Hexane, 2,4-dimethyl	116502444	0.0066
Cyclopentane, 1,1,2-trimethyl	4259001	0.0064
Cyclopentane, 1-ethyl-3-methyl,cis	2613663	0.0063
Hexane, 3,4-dimethyl	583482	0.0057
Cyclopentane, 1-ethyl-3-methyl,trans	2613652	0.0057
Cyclopentane, 1-methyl-2-propyl	3728572	0.0052
Cyclopentane, 1,2,3-trimethyl, ctc	19374460	0.0046
Hexane, 2,5-dimethyl	592132	0.0043
Cyclopentane, 1,2,4-trimethyl, ctc	18679306	0.0042
Cyclohexane, 1,2-dimethyl, cis	2207014	0.0029
Heptane, 4-ethyl	2216322	0.0029
Heptane, 3-ethyl	15869804	0.0028
Hexane, 3,3-dimethyl	563166	0.0027
Heptane, 2,2-dimethyl	1071267	0.0026
Benzene, 1,3,5-trimethyl	108678	0.0025
Benzene, 1,3-dimethyl	108383	0.0025
Pentane, 2,3,4-trimethyl	565753	0.0023
Cyclohexane, 1,1,4-trimethyl	7094271	0.0016

Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0015
Cyclopentane, 1,2-dimethyl, cis	1192183	0.0012
Cyclohexane, 1,1-dimethyl	590669	0.0010
Benzene, 1,4-dimethyl	106423	0.0008
Benzene, ethyl	100414	0.0008
Toluene	108883	0.0001
Total		0.9999

CP15, Aliphatic Petroleum Distillates	CAS#	fraction
Decane	124185	0.0700
c-Paraffin, C10		0.0543
c-Paraffin, C11		0.0351
u-Paraffin, C11		0.0337
Undecane	1120214	0.0298
Cyclohexane, propyl	1678928	0.0275
Nonane	111842	0.0268
Nonane, 4-methyl	17301949	0.0238
Nonane, 2,6-dimethyl	17302282	0.0217
Octane, 3,6-dimethyl	15869940	0.0196
c-Paraffin, C12		0.0185
Cyclohexane, 1,1,2,3-tetramethyl	6783922	0.0184
Cyclohexane, 1-ethyl-2-methyl, trans	4923788	0.0180
Nonane, 3-methyl	5911046	0.0179
Nonane, 2-methyl	871830	0.0173
Decane, 4-methyl	2847725	0.0171
u-Paraffin, C10		0.0166
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0148
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0138
Octane, 2,3-dimethyl	7146603	0.0130
Decane, 3-methyl	13151343	0.0123
Benzene, 1,3,5-trimethyl	108678	0.0123
Decane, 2,6-dimethyl	13150817	0.0121
Cyclohexane, 1,2-diethyl, cis	824431	0.0116
u-Paraffin, C12		0.0115
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0112
Cyclohexane, 1-methyl-4-propyl, trans	28352423	0.0104
Decane, 2-methyl	6975980	0.0102
Heptane, 3-ethyl-2-methyl	14676290	0.0102
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0094
Cyclohexane, diethyl	1331437	0.0093
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0093
Aromatic, C12		0.0092
Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0085
Decane, 4,5-dimethyl	17312468	0.0085
Cyclohexane, 1-methyl-3-propyl, trans	34522195	0.0085
Cyclohexane, 1,2,3-trimethyl, ctc	1678815	0.0083
Benzene, 1-isopropyl-4-methyl	99876	0.0081
Benzene, 1,2-diethyl	135013	0.0081
Cyclohexane, 1-ethyl-2-methyl, cis	4923777	0.0081
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0079
Benzene, 1,2,4-trimethyl	95636	0.0078
Cyclohexane, 1-isopropyl-2-methyl	16580237	0.0077
Benzene, 1-ethyl-3-methyl	620144	0.0073
Octane, 2,6-dimethyl	2051301	0.0072
Cyclohexane, 1-methyl-3-propyl, cis	42806757	0.0069
Cyclohexane, 2-ethyl-1,3-dimethyl	7045672	0.0069
Benzene, propyl	103651	0.0068
Dodecane	112403	0.0066

Cyclohexane, 1,2,3-trimethyl, ccc	1839889	0.0063
Undecane, 2-methyl	7045718	0.0062
Indan, 4-methyl	824226	0.0061
Benzene, 1-methyl-2-propyl	1074175	0.0059
Decane, 3-ethyl	17085960	0.0059
Cyclohexane, 1-methyl-4-propyl, cis	28954429	0.0059
Benzene, 1,2,3-trimethyl	526738	0.0056
Benzene, 1-ethyl-4-methyl	622968	0.0055
Cyclohexane, 1,1,3-trimethyl	3073663	0.0055
Cyclohexane, 1,2,4-trimethyl, ccc	1678804	0.0055
Octane, 3-methyl	2216333	0.0054
Cyclohexane, butyl	1678939	0.0054
Benzene, 1,2-dimethyl	95476	0.0053
Heptane, 2,3,4-trimethyl	52896954	0.0049
Benzene, 1,4-diethyl	105055	0.0049
Cyclohexane, 1-methyl-2-propyl, trans	42806779	0.0048
Cyclohexane, 1,2-diethyl, trans	13990959	0.0045
Cyclohexane, 1,3,5-trimethyl, ccc	1795273	0.0044
Cyclohexane, 1-ethyl-2,3-dimethyl	7058051	0.0042
Benzene, 1-methyl-4-propyl	1074551	0.0042
Indene, octahydro, trans	3296502	0.0042
Decane, 3,6-dimethyl	17312537	0.0041
Benzene, 1,3-diethyl	141935	0.0039
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0039
Octane, 4-methyl	2216344	0.0038
Benzene, isopropyl	98828	0.0035
Octane, 3,3-dimethyl	4110445	0.0034
Cyclopentane, 1-methyl-2-propyl	3728572	0.0033
Cyclohexane, 1,3-diethyl, trans	13990948	0.0033
Cyclopentane, 1,3-diethyl, trans	62016608	0.0032
Cyclohexane, 1,4-diethyl, cis	13990926	0.0032
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0031
Cyclopentane, 2-methylpropyl	3788327	0.0030
Benzene, 1,3-dimethyl-4-propyl	874419	0.0029
Indan	496117	0.0028
i-Paraffin, C13		0.0028
Cyclopentane, 1-methyl-2-propyl	3728572	0.0027
Benzene, 1,2,4,5-tetramethyl	95932	0.0027
Cyclopentane, butyl	2040951	0.0025
Benzene, 1-methyl-3-propyl	1074437	0.0024
Benzene, 1-isopropyl-3-methyl	535773	0.0023
Benzene, 1,3-dimethyl-5-propyl	3982647	0.0023
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0023
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0021
Indan, 1-methyl	767588	0.0021
Benzene, butyl	104518	0.0020
Naphthalene	91203	0.0020
Cyclohexane, 1,3,5-trimethyl	1839630	0.0020
Benzene, 1,3-dimethyl	108383	0.0019
u-Paraffin, C13		0.0018
Octane, 2,5-dimethyl	15869893	0.0018
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0017

Naphthalene, decahydro-2-methyl	2958761	0.0017
Undecane, 4-methyl	2980690	0.0016
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0016
Benzene, 1-methylpropyl	538932	0.0016
Benzene, ethyl	100414	0.0016
Cyclohexane, 1,4-diethyl, trans	13990937	0.0016
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0016
Cyclohexane, isopropyl	696297	0.0015
Decane, 2,7-dimethyl	17312515	0.0015
Cyclohexane, 1,2,3-trimethyl	1678973	0.0014
Benzene, 1-ethyl-2-methyl	611143	0.0014
Cyclopentane, isobutyl	3788327	0.0014
Undecane, 3-methyl	1002433	0.0013
i-Paraffin, C10		0.0013
Benzene, 1,2,3,4-tetramethyl	488233	0.0013
Undecane, 5-methyl	1632708	0.0012
Octane, 3,5-dimethyl	15869939	0.0012
Indan, 5-methyl	874351	0.0011
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0011
Benzene, 1,2,3,5-tetramethyl	527537	0.0010
Decane, 2,8-dimethyl	17312526	0.0009
i-Paraffin, C10		0.0008
Nonane, bicyclo[3.3.1]	280659	0.0007
Benzene, 1,4-dimethyl-2-propyl	3042500	0.0007
Benzene, 1,3,5-triethyl	934805	0.0006
Dodecane, 4-methyl	6117971	0.0006
Undecane, 2,6-dimethyl	17301234	0.0006
Undecane, 5-ethyl	17453940	0.0005
Benzene, 1,2,3-trimethyl-5-ethyl	31366004	0.0004
Benzene, 1,4-dimethyl	106423	0.0004
Indan, 2-methyl	824635	0.0003
Total		1.0000

CP16, Aliphatic Petroleum Distillates	CAS#	fraction
Undecane	1120214	0.2574
c-Paraffin, C11		0.1618
u-Paraffin, C12		0.0997
Decane, 3-methyl	13151343	0.0405
Dodecane	112403	0.0386
Decane, 2-methyl	6975980	0.0371
Decane, 4-methyl	2847725	0.0354
Nonane, 3-ethyl	17302113	0.0280
Decane, 2,5-dimethyl	17312504	0.0237
i-Paraffin, C11		0.0209
u-Paraffin, C13		0.0185
Undecane, 2-methyl	7045718	0.0154
Nonane, 2,6-dimethyl	17302282	0.0145
Decane, 2,9-dimethyl	1002171	0.0136
Cyclohexane, pentyl	4292926	0.0135
Decane	124185	0.0112
Undecane, 4-methyl	2980690	0.0105
Cyclohexane, butyl	1678939	0.0103
Decane, 4,5-dimethyl	17312468	0.0087
Undecane, 3-methyl	1002433	0.0085
Decane, 2,7-dimethyl	17312515	0.0083
Decane, 4,6-dimethyl	17312491	0.0081
Decane, 3-ethyl	17085960	0.0080
Nonane, 3,7-dimethyl	17302328	0.0079
Undecane, 5-methyl	1632708	0.0076
Naphthalene, decahydro-2-methyl	2958761	0.0071
Decane, 2,4-dimethyl	2801845	0.0069
1-Decene, 4-ethyl	104256066	0.0068
c-Paraffin, C12		0.0064
Decane, 3,5-dimethyl	17312480	0.0063
Decane, 4,7-dimethyl	17312560	0.0062
Undecane, 2,6-dimethyl	17301234	0.0058
u-Paraffin, C11		0.0054
Nonane, 4-ethyl	5911057	0.0054
Decane, 2,8-dimethyl	17312526	0.0031
Decane, 5-ethyl	17302362	0.0030
1-Decene, 6-ethyl	104256077	0.0030
Decane, 4-ethyl	1636448	0.0029
Decane, 3,7-dimethyl	17312548	0.0026
Decane, 2,3-dimethyl	17312446	0.0025
i-Paraffin, C13		0.0025
Nonane, 5-ethyl	17302124	0.0023
Cyclohexane, 1,2-diethyl, cis	824431	0.0014
Cyclohexane, 1-methyl-2-propyl, cis	4926710	0.0014
i-Paraffin, C12		0.0013
Cyclohexane, 1,4-diethyl, trans	13990937	0.0010
Decane, 3,8-dimethyl	17312559	0.0010
Undecane, 5-ethyl	17453940	0.0008
Cyclohexane, 1,2-diethyl, trans	13990959	0.0008

Undecane, 3-ethyl	17312582	0.0008
Cyclohexane, 1-methyl-3-propyl, trans	34522195	0.0007
Cyclohexane, 1,4-diethyl, cis	13990926	0.0007
Cyclohexane, 1-methyl-4-propyl, trans	28352423	0.0007
Cyclohexane, 1,3-diethyl, trans	13990948	0.0006
Cyclohexane, 1-methyl-4-propyl, cis	28954429	0.0006
Tridecane	629505	0.0006
Cyclohexane, 1-methyl-3-propyl, cis	42806757	0.0006
Cyclohexane, 1,3-diethyl, cis	13991430	0.0005
Cyclohexane, 1,3-diethyl, cis	13991430	0.0005
Total		1.0000

CP17, Aromatic 150		
Compound	CAS	fraction
Benzene, 1,2-dimethyl-4-ethyl	934805	0.1694
Benzene, 1,2,3,5-tetramethyl	527537	0.1522
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0778
Benzene, 1,2,4,5-tetramethyl	95932	0.0764
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0726
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0610
Benzene, 1,2,3,4-tetramethyl	488233	0.0539
Naphthalene	91203	0.0348
Indan, 5-methyl	874351	0.0322
Benzene, 1-methyl-3-propyl	1074437	0.0310
Indan, 4-methyl	824226	0.0297
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0264
Benzene, 1-methyl-2-propyl	1074175	0.0219
Benzene, 1-methyl-4-propyl	1074551	0.0150
Benzene, 1,4-diethyl	105055	0.0150
Benzene, 1,2,3-trimethyl	526738	0.0129
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0094
Benzene, 1,3-diethyl	141935	0.0093
Benzene, 1,3-dimethyl-5-propyl	3982647	0.0082
Benzene, 1-ethyl-2,4,5-trimethyl	17851273	0.0073
Indan	496117	0.0069
Benzene, 1,2-dimethyl-4-propyl	3982669	0.0062
Benzene, butyl	104518	0.0049
Benzene, ethyl isopropyl	26573160	0.0048
Benzene, 1,4-dimethyl-2-propyl	3042500	0.0041
Tetralin	119642	0.0041
Benzene, dimethyl, isopropyl	25321293	0.0041
Benzene, 1,3-diethyl-5-methyl	2050240	0.0040
Benzene, 1-ethyl-2,3,5-trimethyl	18262856	0.0040
Benzene, 1,3-diethyl-4-methyl	1758856	0.0039
Benzene, 2,4-dimethyl-1-propyl	61827858	0.0032
Benzene, 2-ethyl-1,3,4-trimethyl	61827870	0.0031
Indan, dimethyl	53563670	0.0030
Benzene, 1,4-dimethyl-2-ethenyl	2039896	0.0030
Naphthalene, 2-methyl	91576	0.0029
Benzene, 1,2-diethyl	135013	0.0020
Indan, 1-methyl	767588	0.0019
Indan, 2-methyl	824635	0.0015
Unknown C10 Aromatics		0.0015
Benzene, 2-ethyl-1,3,5-trimethyl	3982670	0.0015
Benzene, pentamethyl	700129	0.0012
Benzene, 1-butyl-3-methyl	1595046	0.0011
Benzene, 1,3-diisopropyl	99627	0.0011
Benzene, pentyl	538681	0.0010
Benzene, 1-isopropyl-2-methyl	527844	0.0010
Benzene, 1,2-diethyl-4-methyl	13732804	0.0010
Naphthalene, 1-methyl	90120	0.0009

Benzene, 1,2-dimethyl-3-propyl	17059448	0.0008
Benzene, 1,2,4-trimethyl	95636	0.0008
Benzene, 1,3-diethyl-2-methyl	13632956	0.0007
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0006
Benzene, 1-isopropyl-3-methyl	535773	0.0005
Benzene, 1,3,5-triethyl	102250	0.0005
Indan, 4,7-dimethyl	6682719	0.0004
Benzene, 1,3-dimethyl-2-propyl	17059459	0.0004
Unknown C11 Aromatics		0.0003
Benzene, 1,2-dimethyl-4-ethenyl	27831136	0.0002
Benzene, 1,4-diisopropyl	100185	0.0002
Benzene, 1-methylpropyl	135988	0.0002
Benzene, isobutyl	538932	0.0001
Total		1.0000

CP18, Aliphatic Petroleum Distillates	CAS#	fraction
Undecane	1120214	0.2577
c-Paraffin, C11		0.1636
u-Paraffin, C12		0.0823
Decane, 3-methyl	13151343	0.0423
Decane, 2-methyl	6975980	0.0406
Decane, 4-methyl	2847725	0.0384
i-Paraffin, C11		0.0318
Dodecane	112403	0.0314
Nonane, 3-ethyl	17302113	0.0299
Decane, 2,5-dimethyl	17312504	0.0225
Nonane, 2,6-dimethyl	17302282	0.0167
Cyclohexane, butyl	1678939	0.0148
Decane	124185	0.0138
Cyclohexane, pentyl	4292926	0.0137
Undecane, 2-methyl	7045718	0.0133
Decane, 2,9-dimethyl	1002171	0.0132
Decane, 4,5-dimethyl	17312468	0.0121
u-Paraffin, C11		0.0120
Nonane, 3,7-dimethyl	17302328	0.0117
u-Paraffin, C13		0.0095
Undecane, 4-methyl	2980690	0.0093
Decane, 4,6-dimethyl	17312491	0.0074
Undecane, 5-methyl	1632708	0.0074
Undecane, 3-methyl	1002433	0.0072
1-Decene, 4-ethyl	104256066	0.0071
Decane, 3-ethyl	17085960	0.0070
Decane, 2,7-dimethyl	17312515	0.0068
c-Paraffin, C12		0.0060
Decane, 4,7-dimethyl	17312560	0.0059
Decane, 3,5-dimethyl	17312480	0.0058
Naphthalene, decahydro-2-methyl	2958761	0.0057
Nonane, 4-ethyl	5911057	0.0054
Undecane, 2,6-dimethyl	17301234	0.0045
Decane, 2,4-dimethyl	2801845	0.0042
Decane, 4-ethyl	1636448	0.0037
1-Decene, 6-ethyl	104256077	0.0036
Nonane, 5-ethyl	17302124	0.0033
i-Paraffin, C13		0.0030
Decane, 5-ethyl	17302362	0.0027
Decane, 2,3-dimethyl	17312446	0.0024
Decane, 3,7-dimethyl	17312548	0.0024
Cyclohexane, 1-methyl-2-propyl, cis	4926710	0.0022
Cyclohexane, 1,4-diethyl, trans	13990937	0.0016
Cyclohexane, 1,2-diethyl, cis	824431	0.0015
i-Paraffin, C12		0.0014
Cyclohexane, 1,2-diethyl, trans	13990959	0.0013
Decane, 3,8-dimethyl	17312559	0.0010
Cyclohexane, 1-methyl-4-propyl, cis	28954429	0.0010
Cyclohexane, 1-methyl-3-propyl, trans	34522195	0.0009

Cyclohexane, 1,4-diethyl, cis	13990926	0.0009
Cyclohexane, 1,3-diethyl, cis	13991430	0.0008
Cyclohexane, 1-methyl-3-propyl, cis	42806757	0.0008
Cyclohexane, 1-methyl-4-propyl, trans	28352423	0.0008
Cyclohexane, 1,3-diethyl, trans	13990948	0.0007
Cyclohexane, 1,3-diethyl, cis	13991430	0.0007
Undecane, 5-ethyl	17453940	0.0007
Undecane, 3-ethyl	17312582	0.0007
Nonane, 2-methyl	871830	0.0006
Total		1.0000

CP19, Xylene		
compound	CAS	fraction
Benzene, 1,3-dimethyl	108383	0.4463
Benzene, 1,2-dimethyl	95476	0.1982
Benzene, 1,4-dimethyl	106423	0.1935
Benzene, ethyl	100414	0.1545
Toluene	108883	0.0021
Benzene, 1-ethyl-3-methyl	620144	0.0015
Benzene, isopropyl	98828	0.0015
Benzene, propyl	103651	0.0008
Benzene, 1,2,4-trimethyl	95636	0.0006
Benzene, 1-ethyl-4-methyl	622968	0.0005
Benzene, 1,3,5-trimethyl	108678	0.0003
Benzene, 1-ethyl-2-methyl	611143	0.0002
Total		1.0000

CP20, Stoddard Solvent	CAS#	fraction
u-Paraffin, C11		0.0700
Decane	124185	0.0467
c-Paraffin, C10		0.0337
u-Paraffin, C12		0.0321
u-Paraffin, C10		0.0307
Nonane, bicyclo[3.3.1]	280659	0.0299
Cyclohexane, 1,1,2,3-tetramethyl	6783922	0.0272
Cyclohexane, 1-ethyl-2-methyl, cis	4923777	0.0268
Undecane	1120214	0.0239
Octane, 3,6-dimethyl	15869940	0.0228
Cyclohexane, 1-methyl-2-propyl, cis	4926710	0.0226
Nonane	111842	0.0217
Cyclohexane, 1-ethyl-2,3-dimethyl	7058051	0.0214
Heptane, 3-ethyl-2-methyl	14676290	0.0203
Cyclohexane, 1,3-diethyl, cis	13991430	0.0196
Indene, octahydro, trans	3296502	0.0171
Cyclohexane, 1-ethyl-2-methyl, trans	4923788	0.0162
Nonane, 3-methyl	5911046	0.0157
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0151
Decane, 4-methyl	2847725	0.0143
Nonane, 2-methyl	871830	0.0138
Benzene, 1,2,4-trimethyl	95636	0.0134
Cyclohexane, diethyl	1331437	0.0127
Cyclohexane, butyl	1678939	0.0127
Cyclohexane, 1-methyl-3-propyl, trans	34522195	0.0125
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0113
Nonane, 4-ethyl	5911057	0.0107
Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0106
Decane, 2,6-dimethyl	13150817	0.0094
Indan	496117	0.0094
Dodecane	112403	0.0093
Decane, 3-methyl	13151343	0.0093
Benzene, 1,2,3-trimethyl	526738	0.0091
Cyclohexane, 1,3,5-trimethyl	1839630	0.0089
Cyclohexane, 1,2,3-trimethyl, ctc	1678815	0.0085
Cyclohexane, 1-methyl-4-propyl, trans	28352423	0.0083
Octane, 2,6-dimethyl	2051301	0.0081
Decane, 2-methyl	6975980	0.0079
Cyclohexane, 1-isopropyl-2-methyl	16580237	0.0077
Cyclopentane, 1,3-diethyl, trans	62016608	0.0074
Cyclohexane, 1,2,3-trimethyl, ccc	1839889	0.0073
Decane, 4,5-dimethyl	17312468	0.0071
Heptane, 2,3,4-trimethyl	52896954	0.0071
Octane, 3,5-dimethyl	15869939	0.0069
Cyclohexane, 1,1,3-trimethyl	3073663	0.0064
Cyclohexane, 1,3-diethyl, cis	13991430	0.0062
u-Paraffin, C13		0.0057
Octane, 3-methyl	2216333	0.0057
Benzene, 1,2-dimethyl	95476	0.0055

Cyclohexane, 1,2,4-trimethyl, ccc	1678804	0.0051
Nonane, 2,6-dimethyl	17302282	0.0051
Benzene, 1,3,5-trimethyl	108678	0.0050
Cyclohexane, 1,3-diethyl, trans	13990948	0.0050
Undecane, 2,6-dimethyl	17301234	0.0048
Benzene, 1-ethyl-4-methyl	622968	0.0047
Octane, 3-ethyl	5881174	0.0047
Undecane, 2-methyl	7045718	0.0046
Benzene, 1-ethyl-3-methyl	620144	0.0044
Nonane, 3,7-dimethyl	17302328	0.0043
Octane, 3,3-dimethyl	4110445	0.0042
Cyclohexane, 1-methyl-2-propyl, trans	42806779	0.0040
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0040
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0039
Cyclohexane, propyl	1678928	0.0039
Cyclohexane, 1-ethyl-2,4-dimethyl	61142696	0.0037
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0036
Benzene, 1,2,3,4-tetramethyl	488233	0.0036
Decane, 4,6-dimethyl	17312491	0.0036
Cyclopentane, isobutyl	3788327	0.0035
Cyclohexane, 1,3,5-trimethyl, ccc	1795273	0.0035
Octane, 4-methyl	2216344	0.0035
Cyclopentane, 1-methyl-2-propyl	3728572	0.0035
Decane, 4-ethyl	1636448	0.0035
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0033
Decane, 2,4-dimethyl	2801845	0.0033
Heptane, 3,4-dimethyl	922281	0.0033
Nonane, 3-ethyl	17302113	0.0033
c-Paraffin, C11		0.0032
u-Paraffin, C9		0.0031
Cyclopentane, 1-methyl-2-propyl	3728572	0.0030
Cyclohexane, 1,4-diethyl, trans	13990937	0.0029
Benzene, 1-ethyl-2-methyl	611143	0.0029
Nonane, 5-ethyl	17302124	0.0029
Benzene, 1,2,3-trimethyl-5-ethyl	31366004	0.0029
Cyclohexane, 1-ethyl-4-methyl, cis	4926787	0.0028
Benzene, 1,2,3,5-tetramethyl	527537	0.0026
Undecane, 4-methyl	2980690	0.0025
Undecane, 5-methyl	1632708	0.0024
Decane, 3,8-dimethyl	17312559	0.0023
Cyclohexane, 1,4-diethyl, cis	13990926	0.0022
Indan, 1-methyl	767588	0.0022
Benzene, 1-methyl-3-propyl	1074437	0.0022
Cyclohexane, 1,4-diethyl, cis	13990926	0.0022
Cyclohexane, 1-methyl-4-propyl, cis	28954429	0.0022
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0022
Benzene, 1,3-dimethyl	108383	0.0021
Benzene, isopropyl	98828	0.0021
Benzene, butyl	104518	0.0020
Octane, 2,5-dimethyl	15869893	0.0019
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0019
Undecane, 3-methyl	1002433	0.0018

Benzene, 1,2-dimethyl-4-ethyl	934805	0.0018
i-Paraffin, C12		0.0018
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0018
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0017
Benzene, 1,3-diethyl-2-methyl	13632956	0.0017
Benzene, propyl	103651	0.0016
Decane, 3,6-dimethyl	17312537	0.0016
Benzene, 1,2,4,5-tetramethyl	95932	0.0015
i-Paraffin, C10		0.0015
Decane, 4,7-dimethyl	17312560	0.0014
Benzene, 1-isopropyl-4-methyl	99876	0.0014
Benzene, 1-isopropyl-3-methyl	535773	0.0014
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0013
Benzene, 1-methyl-2-propyl	1074175	0.0013
Benzene, 1,3-diethyl	141935	0.0012
Indan, 2-methyl	824635	0.0012
Benzene, 1,3-dimethyl-4-propyl	874419	0.0012
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0011
Decane, 3-ethyl	17085960	0.0011
Benzene, 1-methyl-4-propyl	1074551	0.0010
Decane, 2,8-dimethyl	17312526	0.0009
Benzene, (1-methylpropyl)	538932	0.0009
Undecane, 2,6,10-trimethyl	6864535	0.0009
Heptane, 2,6-dimethyl	1072055	0.0009
Benzene, 1,4-dimethyl	106423	0.0008
Cyclohexane, 1,2,3-trimethyl	1678973	0.0008
Benzene, 1,3,5-triethyl	934805	0.0008
Dodecane, 4-methyl	6117971	0.0007
Decane, 2,7-dimethyl	17312515	0.0007
i-Paraffin,C13		0.0007
Indan, 4-methyl	824226	0.0007
Benzene, 1,4-dimethyl-2-propyl	3042500	0.0006
Heptane, 2-methyl	592278	0.0006
Octane	111659	0.0006
Undecane, 5-ethyl	17453940	0.0006
Benzene, 1,2-diethyl	135013	0.0005
Benzene, 1,4-dimethyl-2-propyl	3042500	0.0005
Naphthalene	91203	0.0004
Indan, 5-methyl	874351	0.0001
Total		1.0000

CP21, Aromatic 100		
Compound	CAS	fraction
Benzene, 1,2,4-trimethyl	95636	0.3111
Benzene, 1-ethyl-3-methyl	620144	0.1854
Benzene, 1,3,5-trimethyl	108678	0.0909
Benzene, 1-ethyl-4-methyl	622968	0.0858
Benzene, 1-ethyl-2-methyl	611143	0.0768
Benzene, 1,2,3-trimethyl	526738	0.0636
Benzene, propyl	103651	0.0518
Benzene, 1-methyl-3-propyl	1074437	0.0171
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0170
Indan	496117	0.0142
Benzene, 1,2-dimethyl	95476	0.0136
Benzene, isopropyl	98828	0.0098
Benzene, 1,3-diethyl	141935	0.0089
Benzene, 1-methyl-4-propyl	1074551	0.0082
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0064
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0056
Benzene, isobutyl	538932	0.0052
Benzene, 1-methylpropyl	135988	0.0051
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0042
Benzene, 1-methyl-2-propyl	1074175	0.0035
Benzene, 1-isopropyl-3-methyl	535773	0.0023
Benzene, 1,3-dimethyl	108383	0.0021
Benzene, 1,2,3,5-tetramethyl	527537	0.0016
Benzene, 1,2,4,5-tetramethyl	95932	0.0014
Unknown C10 Aromatics		0.0012
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0011
Benzene, 1,4-dimethyl	106423	0.0009
Benzene, 1,2-diethyl	135013	0.0009
3-Methylnonane	5911046	0.0006
2-Methylnonane	871830	0.0005
Benzene, 1-isopropyl-2-methyl	527844	0.0004
Benzene, ethyl	100414	0.0004
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0004
Indan, 5-methyl	874351	0.0004
Indan, 4-methyl	824226	0.0003
Indan, 1-methyl	767588	0.0003
Naphthalene	91203	0.0003
Benzene, 1,2,3,4-tetramethyl	488233	0.0002
Indan, 2-methyl	824635	0.0002
Benzene, 1,3-diethyl-5-methyl	2050240	0.0002
Total		1.0000

CP22, Aromatic 150		
Compound	CAS	fraction
Benzene, 1,2,3,5-tetramethyl	527537	0.1553
Benzene, 1,2-dimethyl-4-ethyl	934805	0.1469
Benzene, 1,2,4,5-tetramethyl	95932	0.0893
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0573
Benzene, 1,2,3,4-tetramethyl	488233	0.0515
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0501
Naphthalene	91203	0.0487
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0456
Benzene, 1,2,3-trimethyl	526738	0.0384
Benzene, 1-methyl-3-propyl	1074437	0.0284
Indan, 5-methyl	874351	0.0280
Indan, 4-methyl	824226	0.0258
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0229
Benzene, 1,2,4-trimethyl	95636	0.0222
Benzene, 1-methyl-2-propyl	1074175	0.0174
Indan	496117	0.0119
Benzene, 1-methyl-4-propyl	1074551	0.0117
Benzene, 1,4-diethyl	105055	0.0117
Benzene, 1-ethyl-2,4,5-trimethyl	17851273	0.0094
Benzene, 1,3-diethyl	141935	0.0094
Indan, dimethyl	53563670	0.0081
Benzene, 1,3-dimethyl-5-propyl	3982647	0.0079
Benzene, 1,2-dimethyl-4-propyl	3982669	0.0077
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0069
Benzene, 1-ethyl-2,3,5-trimethyl	18262856	0.0056
Benzene, 2-ethyl-1,3,4-trimethyl	61827870	0.0055
Naphthalene, 2-methyl	91576	0.0052
Benzene, pentamethyl	700129	0.0050
Benzene, butyl	104518	0.0049
Benzene, dimethyl, isopropyl	25321293	0.0048
Benzene, 1,3-diethyl-5-methyl	2050240	0.0042
Benzene, 1,3-diethyl-4-methyl	1758856	0.0042
Benzene, 1,4-dimethyl-2-propyl	3042500	0.0039
Tetralin	119642	0.0039
Benzene, 2,4-dimethyl-1-propyl	61827858	0.0037
Benzene, ethyl isopropyl	26573160	0.0028
Unknown C11 Aromatics		0.0024
Benzene, 1,2-diethyl	135013	0.0020
Indan, 1-methyl	767588	0.0020
Benzene, 1,3,5-trimethyl	108678	0.0017
Benzene, 2-ethyl-1,3,5-trimethyl	3982670	0.0017
Benzene, 1-ethyl-3-methyl	620144	0.0016
Benzene, 1-butyl-3-methyl	1595046	0.0016
Benzene, 1,3-diisopropyl	99627	0.0016
Benzene, 1,2-dimethyl-3-propyl	17059448	0.0015
Indan, 4,7-dimethyl	6682719	0.0015
Benzene, 1-ethyl-2-methyl	611143	0.0015

Benzene, 1,2-diethyl-4-methyl	13732804	0.0014
Indan, 2-methyl	824635	0.0013
Benzene, pentyl	538681	0.0013
Benzene, 1,4-dimethyl-2-ethenyl	2039896	0.0012
Naphthalene, 1-methyl	90120	0.0010
Benzene, 1-isopropyl-2-methyl	527844	0.0010
Benzene, 1,3-diethyl-2-methyl	13632956	0.0010
Benzene, 1,3,5-triethyl	102250	0.0009
Benzene, 1-ethyl-4-methyl	622968	0.0009
Benzene, 1-isopropyl-3-methyl	535773	0.0008
Benzene, 1-methylpropyl	135988	0.0007
Benzene, isobutyl	538932	0.0007
Unknown C10 Aromatics		0.0006
Benzene, propyl	103651	0.0006
Benzene, 1,2-dimethyl-4-ethenyl	27831136	0.0005
Benzene, 1,3-dimethyl-2-propyl	17059459	0.0004
Benzene, 1,4-diisopropyl	100185	0.0002
Total		1.0000

CP23, VM&P Naphtha	CAS#	fraction
Cyclohexane, 1,4-dimethyl, trans	2207047	0.0858
Cyclohexane, 1,1,3-trimethyl	3073663	0.0759
Octane	111659	0.0673
Cyclohexane, ethyl	1678917	0.0569
Cyclohexane, 1,2-dimethyl, trans	6876239	0.0485
Heptane, 2-methyl	592278	0.0410
Cyclohexane, 1,4-dimethyl, cis	624293	0.0390
Cyclopentane, 1-ethyl-2-methyl, trans	930905	0.0295
u-Paraffin, C9		0.0288
Cyclopentane, 1-ethyl-2-methyl, cis	930892	0.0268
Heptane, 2,6-dimethyl	1072055	0.0251
Cyclopentane, 1,2,3-trimethyl, ctc	19374460	0.0232
Heptane, 3-methyl	589811	0.0222
Nonane	111842	0.0218
Cyclopentane, 2-methylpropyl	3788327	0.0195
1-Heptene, 2,6-dimethyl	3074780	0.0191
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0170
Heptane, 2,3-dimethyl	3074713	0.0160
Heptane, 4,4-dimethyl	1068195	0.0153
Cyclohexane, 1,2,3-trimethyl	1678973	0.0135
Octane, 3-methyl	2216333	0.0129
Nonane, bicyclo[3.3.1]	280659	0.0121
Cyclopentane, 1-ethyl-3-methyl,cis	2613663	0.0117
Cyclopentane, 1-ethyl-3-methyl,trans	2613652	0.0116
Octane, bicyclo[3,3,0]	694724	0.0109
Cyclopentane, 1,2,4-trimethyl, ctc	18679306	0.0109
Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0098
Cyclohexane, 1,1-dimethyl	590669	0.0096
Heptane, 4-methyl	2216322	0.0090
Cyclohexane, 1-ethyl-2-methyl, trans	4923788	0.0087
Octane, 4-methyl	2216344	0.0086
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0085
u-Paraffin, C10		0.0084
Cyclohexane, propyl	1678928	0.0081
Cyclohexane, methyl	108872	0.0079
Cyclohexane, 1,2,3-trimethyl	1678973	0.0071
u-Paraffin, C8		0.0070
Cyclopentane, 1-methyl-2-propyl	3728572	0.0069
1-Heptene, 2,6-dimethyl	3074780	0.0067
Cyclohexane, 1,2,4-trimethyl, ccc	1678804	0.0066
Cyclopentane, 1,3-diethyl, trans	62016608	0.0062
Cyclohexane, 1,2,3-trimethyl, ctc	1678815	0.0058
Heptane, 4-ethyl	2216322	0.0057
Cyclopentane, isobutyl	3788327	0.0055
Heptane, 2,2-dimethyl	1071267	0.0054
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0049
Heptane, 2,4-dimethyl	2213232	0.0046
Cyclohexane, 1,3-dimethyl, cis	638040	0.0046
Cyclopentane, 1,1,3,3-tetramethyl	50876330	0.0044

Hexane, 3-ethyl	619998	0.0043
Cyclohexane, 1,1,4-trimethyl	7094271	0.0043
Cyclohexane, 1,1,3-trimethyl	3073663	0.0042
Hexane, 2,3-dimethyl	584941	0.0041
Cyclohexane, 1,2-dimethyl, cis	2207014	0.0039
Cyclohexane, isopropyl	696297	0.0036
Octane, 3,6-dimethyl	15869940	0.0032
Cyclohexane, 1,3,5-trimethyl	1839630	0.0032
Heptane, 3-ethyl	15869804	0.0031
Octane, 4,5-dimethyl	15869962	0.0030
Hexane, 3,4-dimethyl	583482	0.0030
Cyclohexane, 1,2,3-trimethyl, ccc	1839889	0.0029
Cyclopentane, 1,1,2-trimethyl	4259001	0.0024
Cyclopentane, 1-ethyl-1-methyl	16747505	0.0024
Cyclohexane, 1-ethyl-4-methyl, cis	4926787	0.0022
Cyclohexane, 1-ethyl-2-methyl, cis	4923777	0.0021
Cyclopentane, 1,1,3-trimethyl	4516692	0.0020
Pentane, 3-ethyl-2,2-dimethyl	16747323	0.0018
Octane, 2,3-dimethyl	7146603	0.0016
Pentane, 2,3,4-trimethyl	565753	0.0015
Hexane, 2,4-dimethyl	116502444	0.0014
Hexane, 3-ethyl-3-methyl	3074768	0.0013
Cyclopentane, 1,1,3,4-tetramethyl	53907601	0.0013
Cyclopentane, ethyl	1640897	0.0012
Cyclopentane, butyl	2040951	0.0012
1-Nonene, 7-methyl	26741231	0.0011
Octane, 3,3-dimethyl	4110445	0.0010
Benzene, 1,2-dimethyl	95476	0.0009
Benzene, 1,4-dimethyl	106423	0.0009
Cyclohexane, 1-ethyl-2,3-dimethyl	7058051	0.0009
Benzene, 1,2,4-trimethyl	95636	0.0009
Heptane, 2,3,4-trimethyl	52896954	0.0008
Benzene, 1-ethyl-3-methyl	620144	0.0007
Indene, octahydro, cis	4551513	0.0007
Benzene, propyl	103651	0.0007
Heptane, 3,4-dimethyl	922281	0.0007
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0007
Hexane, 3,3-dimethyl	563166	0.0006
Octane, 2,5-dimethyl	15869893	0.0005
Benzene, 1-ethyl-4-methyl	622968	0.0005
Benzene, 1,3,5-trimethyl	108678	0.0004
Benzene, 1,3-dimethyl	108383	0.0002
Total		1.0001

CP24, VM&P Naphtha	CAS#	fraction
Cyclohexane, 1,3-dimethyl, cis	638040	0.0906
Cyclohexane, 1,1,3-trimethyl	3073663	0.0764
Octane	111659	0.0679
Cyclohexane, ethyl	1678917	0.0571
Cyclohexane, 1,2-dimethyl, trans	6876239	0.0486
Heptane, 2-methyl	592278	0.0413
Cyclohexane, 1,4-dimethyl, cis	624293	0.0391
u-Paraffin, C9		0.0362
Cyclohexane, 1,4-dimethyl, trans	2207047	0.0296
Cyclopentane, 1-ethyl-2-methyl, cis	930892	0.0269
Heptane, 2,6-dimethyl	1072055	0.0252
Cyclopentane, 1,2,3-trimethyl, ctc	19374460	0.0232
Heptane, 3-methyl	589811	0.0224
Nonane	111842	0.0222
Octane, 3-methyl	2216333	0.0203
1-Heptene, 2,6-dimethyl	3074780	0.0192
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0189
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0171
Cyclohexane, 1,2-dimethyl, cis	2207014	0.0164
Heptane, 2,3-dimethyl	3074713	0.0162
u-Paraffin, C10		0.0155
Cyclohexane, 1,2,3-trimethyl	1678973	0.0136
Nonane, bicyclo[3.3.1]	280659	0.0121
Cyclopentane, 1-ethyl-3-methyl,cis	2613663	0.0118
Cyclopentane, 1-ethyl-3-methyl,trans	2613652	0.0116
Octane, bicyclo[3,3,0]	694724	0.0111
Cyclopentane, 1,2,4-trimethyl, ctc	18679306	0.0109
Cyclohexane, 1,1-dimethyl	590669	0.0096
Heptane, 4-methyl	2216322	0.0091
Octane, 4-methyl	2216344	0.0087
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0084
Hexane, 2,4,4-trimethyl	16747301	0.0081
Cyclohexane, methyl	108872	0.0080
Cyclohexane, 1,2,3-trimethyl	1678973	0.0076
Cyclopentane, 1,1,2-trimethyl	4259001	0.0074
Cyclopentane, 1-methyl-2-propyl	3728572	0.0071
Cyclohexane, 1,1,2-trimethyl	7094260	0.0070
Cyclopentane, 1,3-diethyl, trans	62016608	0.0066
Cyclohexane, 1,2,3-trimethyl, ctc	1678815	0.0066
Cyclopentane, isobutyl	3788327	0.0060
Cyclohexane, propyl	1678928	0.0060
Heptane, 4-ethyl	2216322	0.0058
Heptane, 2,4-dimethyl	2213232	0.0054
Cyclopentane, 1,1,3,3-tetramethyl	50876330	0.0044
Hexane, 3-ethyl	619998	0.0043
Cyclohexane, 1,1,4-trimethyl	7094271	0.0043
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0042
Heptane, 3,3-dimethyl	4032864	0.0042
Hexane, 2,3-dimethyl	584941	0.0041

Cyclohexane, isopropyl	696297	0.0038
Benzene, ethyl	100414	0.0036
Octane, 3,6-dimethyl	15869940	0.0033
Cyclohexane, 1,3,5-trimethyl	1839630	0.0032
Hexane, 3,4-dimethyl	583482	0.0030
Cyclopentane, 1-ethyl-1-methyl	16747505	0.0024
Cyclohexane, 1-ethyl-2-methyl, cis	4923777	0.0023
Cyclopentane, 2-methylpropyl	3788327	0.0022
Hexane, 2,2,4-trimethyl	16747265	0.0021
Cyclohexane, 1-ethyl-2-methyl, trans	4923788	0.0021
Cyclopentane, 1,1,3-trimethyl	4516692	0.0021
Heptane, 2,2-dimethyl	1071267	0.0018
Cyclopentane, butyl	2040951	0.0016
Benzene, 1,3-dimethyl	108383	0.0016
Pentane, 2,3,4-trimethyl	565753	0.0015
Heptane, 3,4-dimethyl	922281	0.0014
Cyclopentane, 1,1,3,4-tetramethyl	53907601	0.0013
Hexane, 2,4-dimethyl	116502444	0.0013
Hexane, 3-ethyl-3-methyl	3074768	0.0013
Cyclopentane, ethyl	1640897	0.0012
Cyclohexane, 1,1,2,3-tetramethyl	6783922	0.0012
Cyclohexane, 1,2,3-trimethyl, cct	7667552	0.0011
Cyclopentane, 1-methyl-2-propyl	3728572	0.0010
Benzene, 1,2,4-trimethyl	95636	0.0010
Benzene, 1,2-dimethyl	95476	0.0009
Octane, 3,3-dimethyl	4110445	0.0009
Indene, octahydro, trans	3296502	0.0009
Octane, bicyclo[3.2.1]	6221552	0.0009
Benzene, propyl	103651	0.0007
Indene, octahydro, cis	4551513	0.0007
Hexane, 3,3-dimethyl	563166	0.0006
Benzene, 1,4-dimethyl	106423	0.0005
Nonane, 4-methyl	17301949	0.0005
Benzene, 1-ethyl-3-methyl	620144	0.0005
Benzene, 1,2,3-trimethyl	526738	0.0004
Benzene, 1,3,5-trimethyl	108678	0.0003
Benzene, 1-ethyl-4-methyl	622968	0.0001
Benzene, 1-ethyl-2-methyl	611143	0.0001
Total		1.0000

CP25, Mineral Spirits	CAS#	fraction
u-Paraffin, C11		0.0801
Decane	124185	0.0497
u-Paraffin, C10		0.0347
c-Paraffin, C10		0.0342
Nonane, bicyclo[3.3.1]	280659	0.0294
u-Paraffin, C12		0.0278
Cyclohexane, 1,1,2,3-tetramethyl	6783922	0.0276
Undecane	1120214	0.0258
Nonane, 2,6-dimethyl	17302282	0.0257
Octane, 3,6-dimethyl	15869940	0.0235
Nonane	111842	0.0219
Cyclohexane, 1-ethyl-2,3-dimethyl	7058051	0.0204
Cyclohexane, propyl	1678928	0.0197
Cyclohexane, 1-ethyl-2-methyl, trans	4923788	0.0156
Cyclohexane, butyl	1678939	0.0148
Benzene, 1,2,4-trimethyl	95636	0.0144
Decane, 4-methyl	2847725	0.0142
Nonane, 2-methyl	871830	0.0137
Cyclohexane, diethyl	1331437	0.0136
Octane, 2,3-dimethyl	7146603	0.0132
Cyclohexane, 1-methyl-4-propyl, trans	28352423	0.0126
Heptane, 3-ethyl-2-methyl	14676290	0.0124
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0120
Cyclohexane, 1-ethyl-2,4-dimethyl	61142696	0.0112
Cyclohexane, 1-methyl-3-propyl, trans	34522195	0.0108
Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0104
Cyclohexane, 1-isopropyl-2-methyl	16580237	0.0103
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0102
Dodecane	112403	0.0101
Benzene, 1,2,3-trimethyl	526738	0.0096
Decane, 2,6-dimethyl	13150817	0.0093
Indan	496117	0.0091
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0087
Cyclohexane, 1,3,5-trimethyl	1839630	0.0085
Decane, 2-methyl	6975980	0.0084
Nonane, 5-ethyl	17302124	0.0082
Cyclohexane, 1,2,3-trimethyl, ctc	1678815	0.0081
Benzene, 1-ethyl-3-methyl	620144	0.0079
Octane, 2,6-dimethyl	2051301	0.0079
Cyclohexane, 1,4-diethyl, cis	13990926	0.0078
Decane, 4,5-dimethyl	17312468	0.0075
Cyclohexane, 1-methyl-4-propyl, cis	28954429	0.0075
Nonane, 3-methyl	5911046	0.0073
Cyclopentane, 1,3-diethyl, trans	62016608	0.0072
Cyclohexane, 1-ethyl-2-methyl, cis	4923777	0.0072
Heptane, 2,3,4-trimethyl	52896954	0.0071
Octane, 3,5-dimethyl	15869939	0.0071
Cyclohexane, 1,2,3-trimethyl, ccc	1839889	0.0068
Cyclohexane, 1,1,3-trimethyl	3073663	0.0062

Cyclohexane, 1,3-diethyl, cis	13991430	0.0060
Cyclohexane, 1-methyl-2-propyl, trans	42806779	0.0060
Octane, 3-methyl	2216333	0.0057
Benzene, 1,3,5-trimethyl	108678	0.0056
Decane, 3-methyl	13151343	0.0056
Undecane, 2,6-dimethyl	17301234	0.0056
Cyclohexane, 1,2,4-trimethyl, ccc	1678804	0.0050
u-Paraffin, C13		0.0048
Indan, 4-methyl	824226	0.0047
Undecane, 2-methyl	7045718	0.0046
Octane, 3,3-dimethyl	4110445	0.0042
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0042
Decane, 4,6-dimethyl	17312491	0.0041
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0040
Indene, octahydro, trans	3296502	0.0039
Benzene, 1,2,3,4-tetramethyl	488233	0.0039
Nonane, 3,7-dimethyl	17302328	0.0038
Cyclopentane, butyl	2040951	0.0038
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0037
Cyclohexane, 1,3,5-trimethyl, ccc	1795273	0.0035
Cyclopentane, isobutyl	3788327	0.0035
Cyclopentane, 1-methyl-2-propyl	3728572	0.0034
Octane, 4-methyl	2216344	0.0033
Decane, 4-ethyl	1636448	0.0033
Benzene, 1,4-dimethyl-2-propyl	3042500	0.0033
Decane, 2,4-dimethyl	2801845	0.0033
Benzene, 1,2,3-trimethyl-5-ethyl	31366004	0.0032
Benzene, 1-ethyl-2-methyl	611143	0.0031
Nonane, 4-ethyl	5911057	0.0030
Cyclohexane, 1,4-diethyl, cis	13990926	0.0030
Cyclohexane, 1-ethyl-4-methyl, cis	4926787	0.0029
Benzene, 1,2,3,5-tetramethyl	527537	0.0029
Cyclopentane, 1-methyl-2-propyl	3728572	0.0028
Heptane, 3,4-dimethyl	922281	0.0027
Benzene, 1-isopropyl-4-methyl	99876	0.0027
Cyclohexane, 1,3-diethyl, trans	13990948	0.0027
Cyclohexane, 1,3-diethyl, cis	13991430	0.0027
Benzene, 1-methyl-3-propyl	1074437	0.0027
Undecane, 5-methyl	1632708	0.0027
Undecane, 4-methyl	2980690	0.0026
Benzene, butyl	104518	0.0024
c-Paraffin, C11		0.0022
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0022
Benzene, 1,2-dimethyl	95476	0.0022
Decane, 3,8-dimethyl	17312559	0.0020
Benzene, 1,2,4,5-tetramethyl	95932	0.0020
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0019
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0019
Nonane, 3-ethyl	17302113	0.0019
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0019
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0018
Decane, 3,6-dimethyl	17312537	0.0017

Undecane, 3-methyl	1002433	0.0016
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0016
Benzene, 1-methyl-2-propyl	1074175	0.0016
Benzene, propyl	103651	0.0016
c-Paraffin, C11		0.0016
Benzene, (1-methylpropyl)	538932	0.0015
Octane, 2,5-dimethyl	15869893	0.0015
Cyclohexane, 1,2,3-trimethyl	1678973	0.0014
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0014
Benzene, 1,3-dimethyl	108383	0.0014
Decane, 4,7-dimethyl	17312560	0.0014
Dodecane, 4-methyl	6117971	0.0013
Benzene, 1,3-dimethyl-4-propyl	874419	0.0013
Benzene, 1-methyl-4-propyl	1074551	0.0013
Cyclohexane, 1,4-diethyl, trans	13990937	0.0013
Decane, 3-ethyl	17085960	0.0013
Indan, 5-methyl	874351	0.0012
i-Paraffin, C9		0.0012
Cyclohexane, 1-methyl-2-propyl, cis	4926710	0.0012
i-Paraffin,C13		0.0011
Octane, 3-ethyl	5881174	0.0011
Benzene, 1-ethyl-4-methyl	622968	0.0011
Benzene, 1,2-diethyl	135013	0.0011
Benzene, 1,3-diethyl-2-methyl	13632956	0.0011
Benzene, 1-isopropyl-3-methyl	535773	0.0011
Undecane, 2,6,10-trimethyl	6864535	0.0011
Benzene, 1,3-diethyl	141935	0.0009
Benzene, 1,3,5-triethyl	934805	0.0009
Naphthalene	91203	0.0009
Heptane, 2,6-dimethyl	1072055	0.0009
u-Paraffin, C9		0.0009
Benzene, isopropyl	98828	0.0008
i-Paraffin, C12		0.0008
Decane, 2,8-dimethyl	17312526	0.0008
Indan, 2-methyl	824635	0.0007
i-Paraffin, C12		0.0007
Undecane, 5-ethyl	17453940	0.0007
Decane, 2,7-dimethyl	17312515	0.0006
Octane	111659	0.0006
Benzene, 1,4-dimethyl-2-propyl	3042500	0.0006
Indan, 1-methyl	767588	0.0005
Total		1.0000

CP26, Mineral Spirits	CAS#	fraction
u-Paraffin, C11		0.0715
u-Paraffin, C10		0.0598
Decane	124185	0.0467
u-Paraffin, C12		0.0434
Cyclohexane, 1,1,2,3-tetramethyl	6783922	0.0288
c-Paraffin, C10		0.0270
Octane, 3,6-dimethyl	15869940	0.0228
Undecane	1120214	0.0227
Nonane, 2,6-dimethyl	17302282	0.0221
Cyclohexane, propyl	1678928	0.0217
Nonane	111842	0.0217
Cyclohexane, 1-ethyl-2,3-dimethyl	7058051	0.0208
Nonane, bicyclo[3.3.1]	280659	0.0195
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0190
Cyclohexane, 1-methyl-3-propyl, trans	34522195	0.0166
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0164
Benzene, 1,2,3-trimethyl	526738	0.0148
Nonane, 3-ethyl	17302113	0.0140
Cyclohexane, 2-ethyl-1,3-dimethyl	7045672	0.0132
Cyclohexane, diethyl	1331437	0.0131
Octane, 2,3-dimethyl	7146603	0.0129
Heptane, 3-ethyl-2-methyl	14676290	0.0121
Cyclohexane, 1-methyl-4-propyl, trans	28352423	0.0120
Cyclohexane, butyl	1678939	0.0120
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0117
Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0108
Benzene, 1-isopropyl-4-methyl	99876	0.0108
Nonane, 3-methyl	5911046	0.0095
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0092
Decane, 3-methyl	13151343	0.0090
Dodecane	112403	0.0087
Cyclopentane, butyl	2040951	0.0087
Cyclohexane, 1,2,3-trimethyl, ctc	1678815	0.0083
Cyclohexane, 1-isopropyl-2-methyl	16580237	0.0081
Nonane, 4-methyl	17301949	0.0079
Decane, 2-methyl	6975980	0.0079
Cyclopentane, 1,3-diethyl, trans	62016608	0.0078
Benzene, 1,2,4-trimethyl	95636	0.0077
Benzene, 1-ethyl-3-methyl	620144	0.0076
Cyclohexane, 1-ethyl-2-methyl, cis	4923777	0.0074
Cyclohexane, 1-methyl-4-propyl, cis	28954429	0.0074
Decane, 4,5-dimethyl	17312468	0.0072
Cyclohexane, 1,2,3-trimethyl, cct	7667552	0.0070
Cyclohexane, 1,1,3-trimethyl	3073663	0.0066
Decane, 4,6-dimethyl	17312491	0.0061
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0060
Octane, 3-methyl	2216333	0.0060
Benzene, 1,2-dimethyl	95476	0.0059
Benzene, 1-ethyl-4-methyl	622968	0.0058

Benzene, propyl	103651	0.0058
Benzene, 1,4-diethyl	105055	0.0057
Cyclohexane, 1,3-diethyl, trans	13990948	0.0056
Cyclohexane, 1,2,4-trimethyl, ccc	1678804	0.0056
Octane, 2,4-dimethyl	4032944	0.0056
Cyclopentane, 1-methyl-2-propyl	3728572	0.0052
c-Paraffin, C12		0.0051
Indene, octahydro, trans	3296502	0.0049
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0048
Octane, 3,3-dimethyl	4110445	0.0048
Indan, 4-methyl	824226	0.0047
Decane, 4-methyl	2847725	0.0047
Undecane, 2,6-dimethyl	17301234	0.0047
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0044
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0042
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0042
Aromatic, C12		0.0040
c-Paraffin, C11		0.0040
Benzene, 1-isopropyl-3-methyl	535773	0.0040
Benzene, 1-methyl-2-propyl	1074175	0.0038
Cyclopentane, isobutyl	3788327	0.0038
Cyclohexane, 1-methyl-2-propyl, trans	42806779	0.0038
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0037
Cyclohexane, 1,2,3-trimethyl, ccc	1839889	0.0037
Cyclopentane, 1-methyl-2-propyl	3728572	0.0036
Cyclohexane, 1-ethyl-2,4-dimethyl	61142696	0.0036
Octane, 4-methyl	2216344	0.0034
Naphthalene, decahydro-2-methyl	2958761	0.0034
Benzene, 1,3-dimethyl	108383	0.0034
Benzene, 1,3,5-trimethyl	108678	0.0033
Indan	496117	0.0033
Benzene, butyl	104518	0.0032
Heptane, 2,3,4-trimethyl	52896954	0.0032
Decane, 3,6-dimethyl	17312537	0.0030
Benzene, 1,2,3,4-tetramethyl	488233	0.0030
Benzene, 1-methylpropyl	538932	0.0030
Benzene, 1-methyl-3-propyl	1074437	0.0030
Cyclohexane, 1-ethyl-2-methyl, trans	4923788	0.0030
Benzene, isopropyl	98828	0.0029
Benzene, 1-ethyl-2-methyl	611143	0.0027
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0027
Cyclohexane, 1,3,5-trimethyl, ccc	1795273	0.0026
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0026
Cyclohexane, 1,4-diethyl, cis	13990926	0.0025
Indan, 1-methyl	767588	0.0025
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0024
Indan, 2-methyl	824635	0.0023
Benzene, 1,2,3,5-tetramethyl	527537	0.0023
Undecane, 4-methyl	2980690	0.0022
Benzene, 1,2,3-trimethyl-5-ethyl	31366004	0.0022
Cyclohexane, 1,3-diethyl, cis	13991430	0.0022
Benzene, 1-methyl-4-propyl	1074551	0.0021

Indan, 5-methyl	874351	0.0019
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0019
Cyclohexane, 1,2,3-trimethyl	1678973	0.0019
Undecane, 5-methyl	1632708	0.0018
Decane, 2,7-dimethyl	17312515	0.0018
Benzene, 1,3-diethyl	141935	0.0018
Cyclohexane, 1,3,5-trimethyl	1839630	0.0017
Benzene, 1,3-diethyl-2-methyl	13632956	0.0015
Benzene, 1,2,4,5-tetramethyl	95932	0.0014
Nonane, 2-methyl	871830	0.0014
Dodecane, 4-methyl	6117971	0.0014
Benzene, 1,3-dimethyl-4-propyl	874419	0.0014
Cyclopentane, 2-methylpropyl	3788327	0.0012
Cyclohexane, 1,4-diethyl-trans	13990937	0.0011
Benzene, 1,2-diethyl	135013	0.0011
Decane, 2,8-dimethyl	17312526	0.0011
Undecane, 2-methyl	7045718	0.0011
Benzene, 1,3-dimethyl-5-propyl	3982647	0.0007
Total		1.0000

CP27, Xylene		
compound	CAS	fraction
Benzene, 1,3-dimethyl	108383	0.4316
Benzene, 1,2-dimethyl	95476	0.2174
Benzene, 1,4-dimethyl	106423	0.1882
Benzene, ethyl	100414	0.1583
Benzene, 1-ethyl-3-methyl	620144	0.0011
Benzene, 1,2,4-trimethyl	95636	0.0010
Benzene, 1,3,5-trimethyl	108678	0.0005
Benzene, 1-ethyl-4-methyl	622968	0.0004
Benzene, 1-ethyl-2-methyl	611143	0.0004
Benzene, isopropyl	98828	0.0004
Toluene	108883	0.0003
Benzene, propyl	103651	0.0003
Total		1.0000

CP28, Light Naphtha Solvent	CAS#	fraction
Cyclohexane, methyl	108872	0.2165
Heptane	142825	0.1381
Heptane, 2-methyl	592278	0.0927
Octane	111659	0.0904
Heptane, 3-methyl	589811	0.0710
Hexane, 3-methyl	589344	0.0427
Cyclohexane, 1,3-dimethyl, cis	638040	0.0385
Hexane, 2-methyl	591764	0.0328
Heptane, 4-methyl	2216322	0.0308
Hexane, 2,4-dimethyl	116502444	0.0300
Hexane, 2,5-dimethyl	592132	0.0299
Toluene	108883	0.0223
Hexane, 2,3-dimethyl	584941	0.0141
Cyclohexane, 1,4-dimethyl, trans	2207047	0.0128
Cyclohexane, 1,4-dimethyl, cis	624293	0.0115
Hexane, 3-ethyl	619998	0.0106
Pentane, 2,3-dimethyl	565593	0.0106
Hexane, 3,3-dimethyl	563166	0.0090
Cyclohexane, 1,2-dimethyl, trans	6876239	0.0090
Cyclopentane, 1,3-dimethyl, trans	1759586	0.0082
Cyclopentane, 1,2-dimethyl, trans	822504	0.0061
Cyclohexane, ethyl	1678917	0.0059
c-Paraffin, C7		0.0056
Hexane, 2,2-dimethyl	590738	0.0054
Cyclopentane, 1,2,4-trimethyl, ctc	18679306	0.0051
Cyclopentane, 1,2,3-trimethyl, ctc	19374460	0.0046
Cyclopentane, 1-ethyl-3-methyl,cis	2613663	0.0045
Cyclopentane, 1,3-dimethyl, cis	2532583	0.0041
Hexane, 3,4-dimethyl	583482	0.0030
Cyclohexane, 1,2-dimethyl, cis	2207014	0.0026
Hexane, 3,4-dimethyl	583482	0.0026
Cyclopentane, 1,1,2-trimethyl	4259001	0.0023
Pentane, 3,3-dimethyl	562492	0.0022
Pentane, 2-methyl-3-ethyl	609267	0.0022
Heptane, 2,6-dimethyl	1072055	0.0021
Heptane, 2,5-dimethyl	2216300	0.0021
u-Paraffin, C8		0.0020
Cyclohexane, 1,1-dimethyl	590669	0.0020
Cyclopentane, 1,1-dimethyl	1638262	0.0018
Heptane, 2,4-dimethyl	2213232	0.0017
Cyclopentane, 1-ethyl-3-methyl,trans	2613652	0.0015
Pentane, 2,3,4-trimethyl	565753	0.0012
Heptane, 2,2-dimethyl	1071267	0.0012
Cyclopentane, 1-ethyl-3-methyl,trans	2613652	0.0010
Cyclopentane, 1-ethyl-3-methyl,trans	2613652	0.0008
Octane, 2-methyl	3221612	0.0008
Heptane, 3,5-dimethyl	926829	0.0008
Octane, 4-methyl	2216344	0.0007
Heptane, 2,3-dimethyl	3074713	0.0007

Octane, 3-methyl	2216333	0.0006
Hexane, 2,3,5-trimethyl	1069530	0.0006
Nonane	111842	0.0005
Total		1.0000

CP29, Aliphatic Petroleum Distillates	CAS#	fraction
Nonane	111842	0.1344
u-Paraffin, C10		0.0466
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0461
Cyclohexane, 1-ethyl-2-methyl, trans	4923788	0.0353
Decane	124185	0.0334
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0328
Cyclohexane, propyl	1678928	0.0313
Cyclohexane, ethyl	1678917	0.0311
Octane, 3-methyl	2216333	0.0304
Octane, 2,6-dimethyl	2051301	0.0300
Octane, 2-methyl	3221612	0.0219
Nonane, 4-methyl	17301949	0.0214
Nonane, 2-methyl	871830	0.0213
Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0194
Nonane, 3-methyl	5911046	0.0181
Heptane, 3-ethyl-2-methyl	14676290	0.0170
Octane, 4-methyl	2216344	0.0168
Octane	111659	0.0158
Cyclohexane, 1,2,4-trimethyl, ccc	1678804	0.0156
Cyclohexane, 1-ethyl-2,3-dimethyl	7058051	0.0155
Cyclohexane, 1,1,2-trimethyl	7094260	0.0147
Cyclohexane, 1,1,3-trimethyl	3073663	0.0146
Nonane, 5-methyl	15869859	0.0144
Cyclohexane, 1-ethyl-2-methyl, cis	4923777	0.0140
Cyclohexane, 1,2,3-trimethyl, ctc	1678815	0.0139
Heptane, 2,3-dimethyl	3074713	0.0138
Octane, 2,2-dimethyl	15869871	0.0124
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0119
Cyclopentane, butyl	2040951	0.0103
Cyclohexane, isopropyl	696297	0.0100
Octane, 3,5-dimethyl	15869939	0.0099
Octane, 2,3-dimethyl	7146603	0.0098
Heptane, 2,6-dimethyl	1072055	0.0092
Octane, 3,3-dimethyl	4110445	0.0087
i-Paraffin, C9		0.0085
Cyclopentane, 1-methyl-2-propyl	3728572	0.0081
Octane, 2,4-dimethyl	4032944	0.0080
Cyclohexane, 1-ethyl-4-methyl, cis	4926787	0.0079
Heptane, 2,5-dimethyl	2216300	0.0078
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0071
u-Paraffin, C9		0.0065
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0062
Cyclohexane, 1-methyl-3-propyl, trans	34522195	0.0060
Cyclohexane, 1-methyl-4-propyl, trans	28352423	0.0051
Octane, 2,7-dimethyl	1072168	0.0051
Cyclohexane, 1,2-dimethyl, cis	2207014	0.0049
Cyclohexane, 1,2-dimethyl, trans	6876239	0.0049
Cyclohexane, 1,3-dimethyl, cis	638040	0.0045
Cyclohexane, 1,2,3-trimethyl, ccc	1839889	0.0045

Cyclohexane, 1-isopropyl-4-methyl	99821	0.0044
Cyclohexane, 1,3-dimethyl, trans	2207036	0.0043
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0042
Octane, 2,5-dimethyl	15869893	0.0039
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0038
Benzene, 1-ethyl-2-methyl	611143	0.0037
Heptane, 3,4-dimethyl	922281	0.0036
Cyclohexane, 1,2,3-trimethyl	1678973	0.0036
Cyclohexane, isobutyl	1678984	0.0034
Cyclopentane, 1,3-diethyl, trans	62016608	0.0033
Hexane, 2,3,4-trimethyl	921471	0.0031
Heptane, 2,4-dimethyl	2213232	0.0031
Octane, 4,5-dimethyl	15869962	0.0030
Cyclohexane, 1-ethyl-2,4-dimethyl	61142696	0.0028
Nonane, bicyclo[3.3.1]	280659	0.0028
Cyclopentane, isobutyl	3788327	0.0027
Cyclopentane, 1-methyl-2-propyl	3728572	0.0026
Cyclohexane, 1-isopropyl-2-methyl	16580237	0.0026
c-Paraffin, C9		0.0026
Heptane, 4-ethyl	2216322	0.0022
Cyclohexane, 1,3-diethyl, trans	13990948	0.0021
Cyclohexane, 1-methyl-2-propyl, cis	4926710	0.0020
Octane, 3,5-dimethyl	15869939	0.0020
Cyclopentane, propyl	2040962	0.0020
Cyclohexane, 1,1,4-trimethyl	7094271	0.0019
Cyclohexane, 1-methyl-3-propyl, cis	42806757	0.0019
Cyclohexane, 1,4-dimethyl, trans	2207047	0.0017
Heptane, 2-methyl	592278	0.0017
Heptane, 3-methyl	589811	0.0015
Cyclohexane, 1,2-diethyl, cis	824431	0.0015
u-Paraffin, C11		0.0014
Octane, 4-ethyl	15869860	0.0013
Octane, 3-ethyl	5881174	0.0013
Toluene	108883	0.0012
Cyclohexane, butyl	1678939	0.0011
Heptane, 3,5-dimethyl	926829	0.0011
Undecane	1120214	0.0010
Cyclohexane, 1,2,3-trimethyl, cct	7667552	0.0010
Cyclohexane, 1-methyl-4-propyl, cis	28954429	0.0010
Cyclohexane, 1,3-diethyl, cis	13991430	0.0009
Hexane, 2,3,5-trimethyl	1069530	0.0009
Heptane, 2,2-dimethyl	1071267	0.0009
Cyclohexane, 1,3-diethyl, cis	13991430	0.0009
Cyclohexane, 1,4-dimethyl, cis	624293	0.0008
Cyclopentane, 1-ethyl-1-methyl	16747505	0.0008
Cyclohexane, 1,4-diethyl, cis	13990926	0.0007
Cyclopentane, 1,1,3,4-tetramethyl	53907601	0.0006
Heptane, 4-methyl	2216322	0.0006
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0006
u-Paraffin, C8		0.0006
Total		1.0000

CP30, VM&P Naphtha	CAS#	fraction
Octane	111659	0.1367
Octane, 4-methyl	2216344	0.0864
Nonane	111842	0.0780
Octane, 3-methyl	2216333	0.0496
Cyclohexane, ethyl	1678917	0.0457
Heptane, 2-methyl	592278	0.0409
Heptane, 3-methyl	589811	0.0386
Cyclohexane, 1,3-dimethyl, cis	638040	0.0347
Heptane, 2,6-dimethyl	1072055	0.0325
Benzene, 1,3-dimethyl	108383	0.0314
Cyclohexane, 1,1,3-trimethyl	3073663	0.0309
Heptane, 3,5-dimethyl	926829	0.0280
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0202
Cyclohexane, 1,2-dimethyl, trans	6876239	0.0200
Cyclohexane, 1,3-dimethyl, trans	2207036	0.0164
Heptane, 2,4-dimethyl	2213232	0.0154
Heptane, 4-methyl	2216322	0.0142
Cyclohexane, 1,4-dimethyl, trans	2207047	0.0139
Heptane, 3,4-dimethyl	922281	0.0122
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0121
Cyclohexane, methyl	108872	0.0117
u-Paraffin, C9		0.0105
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0102
Benzene, 1,2-dimethyl	95476	0.0099
Heptane, 2,2-dimethyl	1071267	0.0085
Heptane, 4,4-dimethyl	1068195	0.0082
Heptane	142825	0.0074
Heptane, 3-ethyl	15869804	0.0068
Hexane, 3-ethyl	619998	0.0062
Hexane, 2,3-dimethyl	584941	0.0059
Benzene, 1,4-dimethyl	106423	0.0058
i-Paraffin, C10		0.0055
Heptane, 4-ethyl	2216322	0.0054
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0054
Cyclohexane, 1,2,4-trimethyl, cct	7667585	0.0053
Pentane, 3,3-diethyl	1067205	0.0052
Heptane, 3,3-dimethyl	4032864	0.0051
Cyclohexane, 1,2,3-trimethyl	1678973	0.0051
Hexane, 2,4-dimethyl	116502444	0.0046
Octane, 2,6-dimethyl	2051301	0.0045
Octane, 2,2-dimethyl	15869871	0.0043
Cyclohexane, 1,1-dimethyl	590669	0.0042
Benzene, ethyl	100414	0.0041
Cyclopentane, 1-methyl-2-propyl	3728572	0.0041
Toluene	108883	0.0040
Cyclohexane, 1,1,4-trimethyl	7094271	0.0036
Hexane, 3,4-dimethyl	583482	0.0035
Hexane, 2,3,5-trimethyl	1069530	0.0035
Octane, 2,5-dimethyl	15869893	0.0035

Cyclopentane, 1-ethyl-2-methyl, cis	930892	0.0034
Cyclopentane, propyl	2040962	0.0033
Octane, 2-methyl	3221612	0.0029
Hexane, 2,3,4-trimethyl	921471	0.0029
Hexane, 3-methyl	589344	0.0025
Nonane, 4-methyl	17301949	0.0024
Cyclopentane, 1-ethyl-2-methyl, trans	930905	0.0022
Nonane, 2-methyl	871830	0.0021
Cyclopentane, 1-methyl-2-propyl	3728572	0.0021
Cyclohexane, propyl	1678928	0.0021
Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0021
Heptane, 3-ethyl-2-methyl	14676290	0.0020
Hexane, 3,3-dimethyl	563166	0.0020
Hexane, 2-methyl	591764	0.0020
Decane	124185	0.0019
Cyclopentane, 1-ethyl-3-methyl,trans	2613652	0.0018
Cyclopentane, 1-ethyl-3-methyl,cis	2613663	0.0018
Cyclopentane, 1,1,3,4-tetramethyl	53907601	0.0017
Nonane, 3-methyl	5911046	0.0017
Cyclopentane, 1,1,2-trimethyl	4259001	0.0016
Benzene, 1-ethyl-3-methyl	620144	0.0015
Cyclopentane, 1,2,3-trimethyl, ctc	19374460	0.0014
Cyclopentane, 1,2,4-trimethyl, ctc	18679306	0.0013
Cyclohexane, 1,2-dimethyl, cis	2207014	0.0013
Nonane, 5-methyl	15869859	0.0012
u-Paraffin, C10		0.0011
Octane, 2,7-dimethyl	1072168	0.0011
Octane, 3,6-dimethyl	15869940	0.0011
Benzene, 1,2,4-trimethyl	95636	0.0010
Cyclohexane, 1,2,3-trimethyl, ctc	1678815	0.0010
Octane, 2,3-dimethyl	7146603	0.0010
Cyclohexane, isopropyl	696297	0.0010
Cyclohexane, 1,2,3-trimethyl, cct	7667552	0.0009
Pentane, 2-methyl-3-ethyl	609267	0.0009
Octane, 3,5-dimethyl	15869939	0.0009
Benzene, 1,3,5-trimethyl	108678	0.0009
Nonane, bicyclo[3.3.1]	280659	0.0008
Octane, 3,3-dimethyl	4110445	0.0008
c-Paraffin, C7		0.0008
Cyclohexane, 1-ethyl-2-methyl, trans	4923788	0.0008
Cyclopentane, 1,3-diethyl, trans	62016608	0.0008
Pentane, 2,3-dimethyl	565593	0.0007
Cyclopentane, 1,1,3-trimethyl	4516692	0.0007
Hexane, 2,5-dimethyl	592132	0.0007
Cyclopentane, 1-ethyl-1-methyl	16747505	0.0007
Heptane, 2,5-dimethyl	2216300	0.0007
Benzene, isopropyl	98828	0.0006
Total		1.0000

CP31, Aromatic 100		
Compound	CAS	fraction
Benzene, 1,2,4-trimethyl	95636	0.2898
Benzene, 1-ethyl-3-methyl	620144	0.1776
Benzene, 1,3,5-trimethyl	108678	0.0937
Benzene, 1,2-dimethyl	95476	0.0927
Benzene, 1-ethyl-4-methyl	622968	0.0777
Benzene, 1-ethyl-2-methyl	611143	0.0609
Benzene, 1,2,3-trimethyl	526738	0.0537
Benzene, propyl	103651	0.0441
Benzene, isopropyl	98828	0.0175
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0104
Benzene, 1-methyl-3-propyl	1074437	0.0100
Indan	496117	0.0089
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0064
Benzene, butyl	104518	0.0064
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0064
Benzene, 1,2,3,5-tetramethyl	527537	0.0057
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0056
Benzene, 1,2,4,5-tetramethyl	95932	0.0045
Benzene, 1,3-diethyl	141935	0.0040
Benzene, 1-methyl-2-propyl	1074175	0.0031
Benzene, 1-methyl-4-propyl	1074551	0.0028
Benzene, 1,4-diethyl	105055	0.0028
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0016
Benzene, 1,3-dimethyl	108383	0.0016
Benzene, isobutyl	538932	0.0016
Benzene, 1-methylpropyl	135988	0.0016
Benzene, 1-isopropyl-3-methyl	535773	0.0010
Benzene, 1,2,3,4-tetramethyl	488233	0.0010
Benzene, 1,4-dimethyl	106423	0.0008
Indan, 5-methyl	874351	0.0008
Indan, 4-methyl	824226	0.0007
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0006
Benzene, ethyl	100414	0.0006
Benzene, 1,2-diethyl	135013	0.0005
Naphthalene	91203	0.0004
Indan, 1-methyl	767588	0.0004
Benzene, 1,3-dimethyl-5-propyl	3982647	0.0003
Benzene, 1-isopropyl-2-methyl	527844	0.0003
Benzene, 1,3-diethyl-5-methyl	2050240	0.0002
Indan, 2-methyl	824635	0.0001
Benzene, 1,4-dimethyl-2-propyl	3042500	0.0001
Tetralin	119642	0.0001
Benzene, 1,2-dimethyl-4-propyl	3982669	0.0001
Benzene, 1-ethyl-2,4,5-trimethyl	17851273	0.0001
Benzene, 1,3-diethyl-4-methyl	1758856	0.0001
Benzene, 2,4-dimethyl-1-propyl	61827858	0.0001
Benzene, 1-butyl-3-methyl	1595046	0.0001

Benzene, 1,3-diisopropyl	99627	0.0001
Total		1.0000

CP32, Aromatic 150		
Compound	CAS	fraction
Benzene, 1,2,3,5-tetramethyl	527537	0.1086
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0876
Naphthalene	91203	0.0843
Benzene, 1,2,4,5-tetramethyl	95932	0.0731
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0534
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0457
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0440
Benzene, 1,2,4-trimethyl	95636	0.0437
Benzene, 1,2,3,4-tetramethyl	488233	0.0372
Indan, 5-methyl	874351	0.0346
Benzene, 1,2,3-trimethyl	526738	0.0338
Benzene, 1-methyl-3-propyl	1074437	0.0338
Indan, 4-methyl	824226	0.0337
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0225
Benzene, 1-methyl-2-propyl	1074175	0.0170
Benzene, 1-ethyl-2,4,5-trimethyl	17851273	0.0151
Benzene, 1,3-dimethyl-5-propyl	3982647	0.0136
Indan, dimethyl	53563670	0.0123
Benzene, 1-methyl-4-propyl	1074551	0.0121
Benzene, 1,4-diethyl	105055	0.0121
Benzene, 1,2-dimethyl-4-propyl	3982669	0.0120
Benzene, 1,3-diethyl	141935	0.0120
Benzene, 1-ethyl-2,3,5-trimethyl	18262856	0.0095
Indan	496117	0.0091
Benzene, 2-ethyl-1,3,4-trimethyl	61827870	0.0089
Benzene, 1,3-diethyl-5-methyl	2050240	0.0080
Benzene, 1,3-diethyl-4-methyl	1758856	0.0077
Benzene, 1,4-dimethyl-2-propyl	3042500	0.0073
Tetralin	119642	0.0073
Benzene, dimethyl, isopropyl	25321293	0.0068
Benzene, 1,3,5-trimethyl	108678	0.0064
Benzene, ethyl isopropyl	26573160	0.0063
Benzene, 1-ethyl-3-methyl	620144	0.0060
Benzene, 2,4-dimethyl-1-propyl	61827858	0.0058
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0053
Benzene, butyl	104518	0.0049
Benzene, 1-ethyl-2-methyl	611143	0.0045
Naphthalene, 2-methyl	91576	0.0041
Unknown C11 Aromatics		0.0039
Unknown C10 Aromatics		0.0038
Benzene, pentamethyl	700129	0.0032
Benzene, 2-ethyl-1,3,5-trimethyl	3982670	0.0030
Indan, 1-methyl	767588	0.0028
Benzene, 1-ethyl-4-methyl	622968	0.0028
Benzene, 1,2-diethyl	135013	0.0026
Benzene, pentyl	538681	0.0026
Benzene, 1-butyl-3-methyl	1595046	0.0025

Benzene, 1,3-diisopropyl	99627	0.0025
Benzene, 1,2-dimethyl-3-propyl	17059448	0.0022
Benzene, 1,2-diethyl-4-methyl	13732804	0.0020
Indan, 4,7-dimethyl	6682719	0.0018
Benzene, 1,3,5-triethyl	102250	0.0016
Indan, 2-methyl	824635	0.0014
Benzene, 1,3-dimethyl	108383	0.0013
Benzene, 1,3-diethyl-2-methyl	13632956	0.0011
Benzene, propyl	103651	0.0011
Benzene, 1-isopropyl-3-methyl	535773	0.0010
Naphthalene, 1-methyl	90120	0.0009
Benzene, 1-methylpropyl	135988	0.0009
Benzene, 1,4-dimethyl-2-ethenyl	2039896	0.0008
Benzene, isobutyl	538932	0.0007
Benzene, 1,3-dimethyl-2-propyl	17059459	0.0007
3,4-Dimethylheptane	922281	0.0007
Benzene, 1,2-dimethyl	95476	0.0007
Benzene, ethyl	100414	0.0006
Benzene, 1,4-diisopropyl	100185	0.0005
Benzene, 1-isopropyl-2-methyl	527844	0.0003
Benzene, isopropyl	98828	0.0002
Benzene, 1,4-dimethyl	106423	0.0001
Total		1.0000

CP33, Mineral Spirits	CAS#	fraction
Decane	124185	0.1375
u-Paraffin, C10		0.0955
u-Paraffin, C11		0.0914
Undecane	1120214	0.0685
Octane, 3-ethyl	5881174	0.0359
Cyclohexane, 1-ethyl-2,3-dimethyl	7058051	0.0310
Nonane, 2-methyl	871830	0.0301
u-Paraffin, C12		0.0288
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0249
Nonane, 2,6-dimethyl	17302282	0.0233
Dodecane	112403	0.0197
Decane, 4-methyl	2847725	0.0170
Nonane, bicyclo[3.3.1]	280659	0.0160
Cyclohexane, butyl	1678939	0.0145
Decane, 3-methyl	13151343	0.0141
Octane, 3,3-dimethyl	4110445	0.0141
Cyclohexane, 1-methyl-4-propyl, trans	28352423	0.0138
Decane, 2-methyl	6975980	0.0138
Nonane, 4-methyl	17301949	0.0137
Nonane, 3-ethyl	17302113	0.0128
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0110
Nonane	111842	0.0105
Octane, 3,6-dimethyl	15869940	0.0105
Cyclohexane, 1-methyl-4-propyl, trans	28352423	0.0100
Nonane, 5-methyl	15869859	0.0077
Cyclohexane, 1-ethyl-4-methyl, cis	4926787	0.0073
Undecane, 2-methyl	7045718	0.0071
i-Paraffin, C10		0.0070
Cyclohexane, 1-methyl-3-propyl, cis	42806757	0.0066
Nonane, 3,7-dimethyl	17302328	0.0066
Cyclohexane, 1,3-diethyl, trans	13990948	0.0066
Cyclohexane, isobutyl	1678984	0.0063
Cyclohexane, 1,2-diethyl, trans	13990959	0.0061
Heptane, 3,4-dimethyl	922281	0.0058
Cyclohexane, 1,2,3-trimethyl, cct	7667552	0.0057
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0057
Decane, 2,6-dimethyl	13150817	0.0053
Undecane, 4-methyl	2980690	0.0052
Decane, 4,5-dimethyl	17312468	0.0049
Cyclohexane, pentyl	4292926	0.0046
Cyclohexane, isopropyl	696297	0.0045
Decane, 2,9-dimethyl	1002171	0.0045
Heptane, 3-ethyl-2-methyl	14676290	0.0045
Undecane, 3-methyl	1002433	0.0045
Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0044
Cyclohexane, 1-isopropyl-2-methyl	16580237	0.0043
Cyclohexane, 1,3-diethyl, cis	13991430	0.0043
Cyclohexane, 1,2-diethyl, cis	824431	0.0042
Decane, 3-ethyl	17085960	0.0040

Decane, 4,5-dimethyl	17312468	0.0038
Cyclohexane, 1,4-diethyl, cis	13990926	0.0038
Cyclopentane, isobutyl	3788327	0.0038
Nonane, 3-methyl	5911046	0.0037
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0036
Cyclohexane, 1-methyl-4-propyl, cis	28954429	0.0034
Cyclopentane, 1-methyl-2-propyl	3728572	0.0033
Undecane, 5-methyl	1632708	0.0031
Benzene, 1-methyl-3-propyl	1074437	0.0031
Benzene, 1,3-diethyl	141935	0.0031
Octane, 3,5-dimethyl	15869939	0.0031
Cyclohexane, 1,3-diethyl, cis	13991430	0.0030
Octane, 2,3-dimethyl	7146603	0.0029
Decane, 3,8-dimethyl	17312559	0.0027
Octane, 2,6-dimethyl	2051301	0.0027
Octane, 4-ethyl	15869860	0.0026
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0026
Octane, 2,7-dimethyl	1072168	0.0023
Nonane, 4-ethyl	5911057	0.0022
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0022
Decane, 4,6-dimethyl	17312491	0.0021
Cyclohexane, 1-methyl-3-propyl, trans	34522195	0.0021
Cyclohexane, 1-ethyl-2-methyl, cis	4923777	0.0020
Decane, 3,6-dimethyl	17312537	0.0019
Undecane, 2,6-dimethyl	17301234	0.0019
Octane, 4-methyl	2216344	0.0017
Decane, 2,5-dimethyl	17312504	0.0017
Decane, 3,5-dimethyl	17312480	0.0016
Cyclohexane, propyl	1678928	0.0016
Cyclohexane, 1-methyl-2-propyl, cis	4926710	0.0015
Octane, 4,5-dimethyl	15869962	0.0014
Cyclohexane, 1-ethyl-2,4-dimethyl	61142696	0.0014
Heptane, 2,5-dimethyl	2216300	0.0014
u-Paraffin, C13		0.0014
Nonane, 5-ethyl	17302124	0.0013
Decane, 2,4-dimethyl	2801845	0.0013
u-Paraffin, C9		0.0013
Cyclohexane, 1,4-diethyl, trans	13990937	0.0013
Benzene, 1-methyl-4-propyl	1074551	0.0013
Decane, 2,7-dimethyl	17312515	0.0012
Decane, 2,8-dimethyl	17312526	0.0011
Heptane, 2,3,4-trimethyl	52896954	0.0011
Decane, 4-ethyl	1636448	0.0010
Octane, 2,5-dimethyl	15869893	0.0010
Octane, 3,5-dimethyl	15869939	0.0010
Decane, 5-ethyl	17302362	0.0010
Decane, 2,3-dimethyl	17312446	0.0009
Decane, 4,7-dimethyl	17312560	0.0008
Cyclohexane, 1,2,4-trimethyl, ccc	1678804	0.0007
u-Paraffin, C13		0.0007
Decane, 3,7-dimethyl	17312548	0.0007
Cyclopentane, butyl	2040951	0.0006

Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0006
Total		1.0000

CP34, Xylene		
compound	CAS	fraction
Benzene, 1,3-dimethyl	108383	0.4345
Benzene, 1,2-dimethyl	95476	0.2303
Benzene, 1,4-dimethyl	106423	0.1951
Benzene, ethyl	100414	0.1394
Toluene	108883	0.0003
Benzene, isopropyl	98828	0.0003
Benzene, 1-ethyl-3-methyl	620144	0.0001
Benzene, 1,2,4-trimethyl	95636	0.0000
Total		1.0000

CP35, VM&P Naphtha	CAS#	fraction
Octane	111659	0.1604
Cyclohexane, 1,3,5-trimethyl	1839630	0.0847
Cyclohexane, 1,3-dimethyl, cis	638040	0.0608
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0597
Heptane, 2-methyl	592278	0.0562
Octane, 4-methyl	2216344	0.0455
Benzene, 1,3-dimethyl	108383	0.0438
Heptane, 3-methyl	589811	0.0413
Cyclohexane, 1,2-dimethyl, trans	6876239	0.0401
Cyclohexane, 1,4-dimethyl, cis	624293	0.0311
Octane, 3-methyl	2216333	0.0303
Cyclohexane, 1,4-dimethyl, trans	2207047	0.0237
Heptane, 3,5-dimethyl	926829	0.0229
Benzene, 1,2-dimethyl	95476	0.0219
Heptane, 2,6-dimethyl	1072055	0.0189
u-Paraffin, C9		0.0181
Cyclohexane, 1,2-dimethyl, cis	2207014	0.0172
Benzene, 1,4-dimethyl	106423	0.0169
Heptane, 4-methyl	2216322	0.0163
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0137
Benzene, ethyl	100414	0.0133
Cyclohexane, 1,1,3-trimethyl	3073663	0.0126
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0120
Nonane	111842	0.0103
Cyclopentane, 1-ethyl-2-methyl, cis	930892	0.0086
Cyclohexane, 1,2,3-trimethyl, ctc	1678815	0.0080
Hexane, 2,3-dimethyl	584941	0.0076
Cyclohexane, 1,2,4-trimethyl, cct	7667585	0.0072
Heptane, 2,4-dimethyl	2213232	0.0069
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0064
Hexane, 3-ethyl	619998	0.0063
Cyclopentane, 1-methyl-2-propyl	3728572	0.0059
Cyclohexane, 1,1-dimethyl	590669	0.0056
Cyclopentane, 1,1,2-trimethyl	4259001	0.0049
Cyclopentane, propyl	2040962	0.0048
Cyclopentane, 1-ethyl-3-methyl,cis	2613663	0.0046
Cyclopentane, 1-ethyl-3-methyl,trans	2613652	0.0045
Hexane, 3,4-dimethyl	583482	0.0044
Cyclohexane, 1,2,3-trimethyl,	1678973	0.0043
Heptane, 3-ethyl	15869804	0.0040
Cyclohexane, 1,1,4-trimethyl	7094271	0.0039
Heptane, 3,4-dimethyl	922281	0.0032
Heptane, 4-ethyl	2216322	0.0025
Cyclopentane, 1,1,3,3-tetramethyl	50876330	0.0024
Cyclopentane, 1,2,3-trimethyl, ctc	19374460	0.0023
Hexane, 2,3,5-trimethyl	1069530	0.0023
Hexane, 2,4-dimethyl	116502444	0.0018
Cyclohexane, methyl	108872	0.0016
Pentane, 2-methyl-3-ethyl	609267	0.0016

Pentane, 2,3,4-trimethyl	565753	0.0016
Cyclopentane, 1,2,4-trimethyl, ctc	18679306	0.0016
Pentane, 3-ethyl-2,2-dimethyl	16747323	0.0015
Hexane, 3,3-dimethyl	563166	0.0013
Cyclopentane, 1,3-diethyl, trans	62016608	0.0013
Cyclopentane, 1-ethyl-1-methyl	16747505	0.0010
Cyclopentane, isobutyl	3788327	0.0010
Hexane, 2,5-dimethyl	592132	0.0010
Cyclolpentane, 1-ethyl-2-methyl, trans	930905	0.0009
Benzene, isopropyl	98828	0.0005
Benzene, 1-ethyl-3-methyl	620144	0.0005
Benzene, propyl	103651	0.0002
Total		1.0001

CP36, Aromatic 100		
Compound	CAS	fraction
Benzene, 1,2,4-trimethyl	95636	0.2535
Benzene, 1-ethyl-3-methyl	620144	0.1998
Benzene, 1,3,5-trimethyl	108678	0.1013
Benzene, 1-ethyl-4-methyl	622968	0.0900
Benzene, 1,2,3-trimethyl	526738	0.0780
Benzene, 1-ethyl-2-methyl	611143	0.0731
Benzene, propyl	103651	0.0531
Benzene, 1,2-dimethyl	95476	0.0320
Indan	496117	0.0164
Benzene, isopropyl	98828	0.0149
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0144
Benzene, 1-methyl-3-propyl	1074437	0.0122
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0113
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0075
Benzene, 1-methyl-4-propyl	1074551	0.0069
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0061
Benzene, 1,3-diethyl	141935	0.0057
Benzene, 1,2,3,5-tetramethyl	527537	0.0037
Benzene, 1-methyl-2-propyl	1074175	0.0036
Benzene, 1,2,4,5-tetramethyl	95932	0.0031
Benzene, isobutyl	538932	0.0019
Benzene, 1-methylpropyl	135988	0.0019
Benzene, butyl	104518	0.0016
Benzene, 1-isopropyl-3-methyl	535773	0.0013
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0013
Benzene, 1,2-diethyl	135013	0.0007
Indan, 5-methyl	874351	0.0006
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0006
Benzene, 1,3-dimethyl	108383	0.0006
Benzene, 1,2,3,4-tetramethyl	488233	0.0006
Indan, 4-methyl	824226	0.0004
Benzene, 1-isopropyl-2-methyl	527844	0.0004
Naphthalene	91203	0.0003
Indan, 1-methyl	767588	0.0003
Benzene, 1,4-dimethyl	106423	0.0002
Benzene, 1,3-dimethyl-5-propyl	3982647	0.0002
Indan, 2-methyl	824635	0.0002
Benzene, 1,3-diethyl-5-methyl	2050240	0.0002
Benzene, ethyl	100414	0.0001
Total		1.0000

CP37, Aromatic 150		
Compound	CAS	fraction
Benzene, 1,2,3,5-tetramethyl	527537	0.1081
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0882
Benzene, 1,2,4,5-tetramethyl	95932	0.0750
Naphthalene	91203	0.0660
Benzene, 1,2,3-trimethyl	526738	0.0506
Benzene, 1,2,4-trimethyl	95636	0.0500
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0487
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0436
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0410
Benzene, 1,2,3,4-tetramethyl	488233	0.0388
Benzene, 1-methyl-3-propyl	1074437	0.0332
Indan, 4-methyl	824226	0.0262
Indan, 5-methyl	874351	0.0233
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0223
Indan, dimethyl	53563670	0.0171
Benzene, 1-methyl-2-propyl	1074175	0.0160
Benzene, 1-ethyl-2,4,5-trimethyl	17851273	0.0156
Benzene, dimethyl, isopropyl	25321293	0.0139
Benzene, 1,3-dimethyl-5-propyl	3982647	0.0130
Benzene, 1-methyl-4-propyl	1074551	0.0128
Benzene, 1,4-diethyl	105055	0.0128
Benzene, 1,2-dimethyl-4-propyl	3982669	0.0128
Benzene, 1,3-diethyl	141935	0.0115
Indan	496117	0.0112
Benzene, 1-ethyl-2,3,5-trimethyl	18262856	0.0098
Benzene, 2-ethyl-1,3,4-trimethyl	61827870	0.0097
Benzene, ethyl isopropyl	26573160	0.0083
Naphthalene, 2-methyl	91576	0.0080
Benzene, 1,3-diethyl-4-methyl	1758856	0.0075
Unknown C11 Aromatics		0.0072
Benzene, pentamethyl	700129	0.0072
Benzene, 1,3-diethyl-5-methyl	2050240	0.0072
Benzene, 1,4-dimethyl-2-propyl	3042500	0.0063
Tetralin	119642	0.0063
Benzene, 2,4-dimethyl-1-propyl	61827858	0.0062
Benzene, butyl	104518	0.0053
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0052
Benzene, 1,3,5-trimethyl	108678	0.0042
Benzene, 2-ethyl-1,3,5-trimethyl	3982670	0.0039
Unknown C10 Aromatics		0.0039
Benzene, 1-ethyl-2-methyl	611143	0.0031
Benzene, 1-ethyl-3-methyl	620144	0.0031
Benzene, 1-butyl-3-methyl	1595046	0.0030
Benzene, 1,3-diisopropyl	99627	0.0030
Benzene, 1,2-diethyl-4-methyl	13732804	0.0029
Indan, 4,7-dimethyl	6682719	0.0028
Benzene, 1,2-dimethyl-3-propyl	17059448	0.0025

Benzene, pentyl	538681	0.0024
Benzene, 1,2-diethyl	135013	0.0024
Indan, 1-methyl	767588	0.0021
Benzene, 1-ethyl-4-methyl	622968	0.0019
Benzene, 1,3,5-triethyl	102250	0.0018
Naphthalene, 1-methyl	90120	0.0017
Benzene, 1-isopropyl-2-methyl	527844	0.0014
Benzene, 1-isopropyl-3-methyl	535773	0.0014
Indan, 2-methyl	824635	0.0013
Benzene, 1,3-diethyl-2-methyl	13632956	0.0011
Benzene, 1,4-dimethyl-2-ethenyl	2039896	0.0010
Benzene, 1-methylpropyl	135988	0.0007
Benzene, isobutyl	538932	0.0007
Benzene, 1,3-dimethyl-2-propyl	17059459	0.0006
Benzene, propyl	103651	0.0005
Benzene, 1,4-diisopropyl	100185	0.0005
Benzene, 1,2-dimethyl-4-ethenyl	27831136	0.0004
Total		1.0000

CP39, Paraffinic Petroleum Distillate	CAS#	fraction
Decane	124185	0.1324
u-Paraffin, C11		0.0710
Nonane	111842	0.0539
u-Paraffin, C10		0.0462
Cyclohexane, 1-ethyl-2,4-dimethyl	61142696	0.0395
Benzene, 1,2,4-trimethyl	95636	0.0386
Octane, 3,6-dimethyl	15869940	0.0299
Nonane, 2,6-dimethyl	17302282	0.0279
Nonane, 4-methyl	17301949	0.0273
Nonane, 2-methyl	871830	0.0250
Cyclohexane, 1,1,2,3-tetramethyl	6783922	0.0245
Heptane, 3-ethyl-2-methyl	14676290	0.0244
Undecane	1120214	0.0215
Cyclohexane, 1-ethyl-2-methyl, cis	4923777	0.0192
c-Paraffin, C10		0.0190
Benzene, 1-ethyl-3-methyl	620144	0.0164
Indene, octahydro, trans	3296502	0.0159
Benzene, 1,2,3-trimethyl	526738	0.0150
Cyclohexane, butyl	1678939	0.0145
Octane, 3-ethyl	5881174	0.0137
Benzene, 1,3,5-trimethyl	108678	0.0127
Cyclohexane, 1-ethyl-2,3-dimethyl	7058051	0.0121
Cyclohexane, 1-methyl-4-propyl, trans	28352423	0.0116
Cyclohexane, 1-methyl-3-propyl, trans	34522195	0.0113
Nonane, bicyclo[3.3.1]	280659	0.0111
Cyclohexane, 1-ethyl-2-methyl, trans	4923788	0.0096
Octane, 2,6-dimethyl	2051301	0.0093
Decane, 4-methyl	2847725	0.0090
Benzene, 1-ethyl-2-methyl	611143	0.0084
Benzene, 1-methyl-3-propyl	1074437	0.0083
Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0070
Nonane, 4-ethyl	5911057	0.0069
Benzene, 1-ethyl-4-methyl	622968	0.0067
Decane, 2-methyl	6975980	0.0066
Cyclohexane, 1-isopropyl-2-methyl	16580237	0.0065
Octane, 2,5-dimethyl	15869893	0.0063
Octane, 3-methyl	2216333	0.0060
Benzene, propyl	103651	0.0060
Octane, 2,3-dimethyl	7146603	0.0058
Octane, 4-methyl	2216344	0.0057
Decane, 3-methyl	13151343	0.0057
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0048
Benzene, 1-isopropyl-3-methyl	535773	0.0047
Cyclopentane, 1-methyl-2-propyl	3728572	0.0044
Heptane, 2,3,4-trimethyl	52896954	0.0042
Cyclopentane, 1,3-diethyl, trans	62016608	0.0042
Benzene, 1,4-diethyl	105055	0.0041
Cyclohexane, 1,3-diethyl, trans	13990948	0.0040
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0040

Benzene, 1-methyl-2-propyl	1074175	0.0039
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0038
Cyclohexane, 1-methyl-2-propyl, trans	42806779	0.0038
Cyclohexane, 1,2,3-trimethyl, ccc	1839889	0.0037
Benzene, 1-methylpropyl	538932	0.0035
Benzene, 1,3-diethyl	141935	0.0033
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0033
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0031
Octane, 3,3-dimethyl	4110445	0.0031
Benzene, 1-isopropyl-4-methyl	99876	0.0029
Cyclohexane, 1,4-diethyl, trans	13990937	0.0029
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0029
Benzene, 1,3-dimethyl	108383	0.0028
Cyclopentane, isobutyl	3788327	0.0028
Cyclopentane, 1-methyl-2-propyl	3728572	0.0028
Cyclohexane, 1,4-diethyl, cis	13990926	0.0027
Benzene, 1-methyl-4-propyl	1074551	0.0026
Cyclohexane, 1,3-diethyl, cis	13991430	0.0026
u-Paraffin, C12		0.0024
Cyclohexane, 1,1,3-trimethyl	3073663	0.0023
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0023
Cyclohexane, 1,2,4-trimethyl, ctt	7667609	0.0022
Nonane, 3-ethyl	17302113	0.0021
c-Paraffin, C11		0.0021
Benzene, isopropyl	98828	0.0021
Indan, 1-methyl	767588	0.0020
Octane, 3,5-dimethyl	15869939	0.0019
Cyclohexane, 1,2,3-trimethyl, ctc	1678815	0.0019
Cyclohexane, 1,2,4-trimethyl, cct	7667585	0.0019
Benzene, 1,2-dimethyl	95476	0.0019
Cyclohexane, propyl	1678928	0.0018
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0016
Cyclohexane, 1,4-diethyl, cis	13990926	0.0016
Benzene, 1,2,3,5-tetramethyl	527537	0.0015
Indan	496117	0.0015
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0015
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0014
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0014
Octane, 3,5-dimethyl	15869939	0.0014
Decane, 4,5-dimethyl	17312468	0.0014
Decane, 2,6-dimethyl	13150817	0.0013
Decane, 3,6-dimethyl	17312537	0.0013
Benzene, butyl	104518	0.0013
Indan, 4-methyl	824226	0.0013
u-Paraffin, C9		0.0012
Benzene, ethyl	100414	0.0012
Indan, 2-methyl	824635	0.0010
Benzene, 1,2,3,4-tetramethyl	488233	0.0010
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0010
Octane, 4,5-dimethyl	15869962	0.0010
Dodecane	112403	0.0010
Cyclopentane, propyl	2040962	0.0009

Benzene, 1,2,4,5-tetramethyl	95932	0.0009
Decane, 4-ethyl	1636448	0.0008
Heptane, 2,6-dimethyl	1072055	0.0008
Benzene, 1,3-dimethyl-5-propyl	3982647	0.0007
Cyclopentane, 2-methylpropyl	3788327	0.0007
Benzene, 1,4-dimethyl	106423	0.0007
Benzene, 1,2-diethyl	135013	0.0006
Undecane, 4-methyl	2980690	0.0006
Octane	111659	0.0005
Decane, 3,8-dimethyl	17312559	0.0005
Total		1.0001

CP40, Xylene		
compound	CAS	Fraction
Benzene, 1,3-dimethyl	108383	0.4881
Benzene, ethyl	100414	0.1952
Benzene, 1,4-dimethyl	106423	0.1788
Benzene, 1,2-dimethyl	95476	0.1343
Toluene	108883	0.0009
Benzene, isopropyl	98828	0.0007
Benzene, 1-ethyl-3-methyl	620144	0.0006
Benzene, 1,2,4-trimethyl	95636	0.0003
Benzene, propyl	103651	0.0003
Benzene, 1-ethyl-2-methyl	611143	0.0003
Benzene, 1,3,5-trimethyl	108678	0.0002
Benzene, 1-ethyl-4-methyl	622968	0.0002
Total		1.0000

CP41, Xylene		
compound	CAS	fraction
Benzene, 1,3-dimethyl	108383	0.4264
Benzene, 1,2-dimethyl	95476	0.1952
Benzene, 1,4-dimethyl	106423	0.1931
Benzene, ethyl	100414	0.1759
Toluene	108883	0.0039
Benzene, 1-ethyl-3-methyl	620144	0.0019
Benzene, isopropyl	98828	0.0014
Benzene, propyl	103651	0.0008
Benzene, 1-ethyl-4-methyl	622968	0.0006
Benzene, 1,3,5-trimethyl	108678	0.0004
Benzene, 1,2,4-trimethyl	95636	0.0003
Benzene, 1-ethyl-2-methyl	611143	0.0002
Total		1.0000

CP42, Aromatic 100		
Compound	CAS	fraction
Benzene, 1,2,4-trimethyl	95636	0.3027
Benzene, 1-ethyl-3-methyl	620144	0.1639
Benzene, 1,3,5-trimethyl	108678	0.0970
Benzene, 1-ethyl-4-methyl	622968	0.0753
Benzene, 1,2,3-trimethyl	526738	0.0589
Benzene, 1-ethyl-2-methyl	611143	0.0529
Benzene, 1,2-dimethyl	95476	0.0352
Benzene, propyl	103651	0.0335
Benzene, 1,2-dimethyl-4-ethyl	934805	0.0212
Benzene, 1,3-diethyl	141935	0.0192
Benzene, 1,3-dimethyl-5-ethyl	934747	0.0159
Benzene, 1-methyl-4-propyl	1074551	0.0143
Indan	496117	0.0129
Benzene, 1,3-dimethyl	108383	0.0123
Benzene, 1-methyl-3-propyl	1074437	0.0105
Benzene, isopropyl	98828	0.0103
Benzene, 1,2,3,5-tetramethyl	527537	0.0089
Benzene, 1,4-dimethyl-2-ethyl	1758889	0.0085
Benzene, 1,3-dimethyl-4-ethyl	874419	0.0080
Benzene, 1,2,4,5-tetramethyl	95932	0.0069
Benzene, 1,4-dimethyl	106423	0.0045
Benzene, 1-methyl-2-propyl	1074175	0.0034
Benzene, 1,2-dimethyl-3-ethyl	933982	0.0024
Indan, 5-methyl	874351	0.0024
Benzene, isobutyl	538932	0.0019
Indan, 4-methyl	824226	0.0018
Benzene, 1,2,3,4-tetramethyl	488233	0.0017
Benzene, ethyl	100414	0.0016
Benzene, 1-methylpropyl	135988	0.0015
Benzene, 1-isopropyl-3-methyl	535773	0.0013
Naphthalene	91203	0.0013
Benzene, butyl	104518	0.0011
Benzene, 1,2-diethyl	135013	0.0009
Benzene, 1,3-dimethyl-2-ethyl	2870044	0.0008
Benzene, 1,3-dimethyl-5-propyl	3982647	0.0007
Benzene, 1-isopropyl-2-methyl	527844	0.0007
Benzene, 1,3-diethyl-5-methyl	2050240	0.0006
Indan, 1-methyl	767588	0.0005
Unknown C10 Aromatics		0.0005
Benzene, 1,2-dimethyl-4-propyl	3982669	0.0004
Benzene, 1,3-diethyl-4-methyl	1758856	0.0003
Benzene, 1,4-dimethyl-2-propyl	3042500	0.0003
Tetralin	119642	0.0003
Indan, 2-methyl	824635	0.0003
Benzene, 2,4-dimethyl-1-propyl	61827858	0.0002
Benzene, pentyl	538681	0.0001

Benzene, 1-butyl-3-methyl	1595046	0.0001
Benzene, 1,3-diisopropyl	99627	0.0001
Total		1.0000

CP43, Mineral Spirits	CAS#	fraction
Decane	124185	0.1394
Nonane	111842	0.0883
i-Paraffin, C11		0.0576
Nonane, 2-methyl	871830	0.0412
Nonane, 4-methyl	17301949	0.0370
Undecane	1120214	0.0369
Nonane, 3-methyl	5911046	0.0352
Octane, 3,6-dimethyl	15869940	0.0248
u-Paraffin, C11		0.0232
Nonane, 2,6-dimethyl	17302282	0.0218
c-Paraffin, C10		0.0214
Nonane, 5-methyl	15869859	0.0174
Cyclohexane, propyl	1678928	0.0168
Decane, 4-methyl	2847725	0.0166
Decane, 2-methyl	6975980	0.0159
Octane, 3-methyl	2216333	0.0156
Cyclohexane, 1-ethyl-2,3-dimethyl	7058051	0.0154
Nonane, 3-ethyl	17302113	0.0145
Cyclohexane, 1,1,2,3-tetramethyl	6783922	0.0138
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0138
Octane, 2-methyl	3221612	0.0137
Decane, 3-methyl	13151343	0.0135
Cyclohexane, 1-methyl-4-propyl, trans	28352423	0.0132
Octane, 3,5-dimethyl	15869939	0.0130
Octane, 2,2-dimethyl	15869871	0.0121
Cyclohexane, 1-ethyl-3-methyl, trans	4926765	0.0117
Octane, 2,3-dimethyl	7146603	0.0114
Cyclohexane, butyl	1678939	0.0113
u-Paraffin, C10		0.0107
Cyclohexane, 1-ethyl-2-methyl, cis	4923777	0.0106
Heptane, 3-ethyl-2-methyl	14676290	0.0094
Octane, 4-methyl	2216344	0.0093
Cyclohexane, 1-ethyl-2-methyl, trans	4923788	0.0091
Cyclohexane, 1-methyl-2-propyl, cis	4926710	0.0077
Octane, 3,3-dimethyl	4110445	0.0068
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0067
Nonane, 4-ethyl	5911057	0.0061
Nonane, 3,7-dimethyl	17302328	0.0061
i-Paraffin, C9		0.0059
Octane, 3-ethyl	5881174	0.0059
Cyclohexane, 1-isopropyl-4-methyl	99821	0.0055
Octane	111659	0.0052
Cyclohexane, 1-ethyl-4-methyl, trans	6236880	0.0052
Cyclohexane, ethyl	1678917	0.0049
u-Paraffin, C12		0.0046
Octane, 2,7-dimethyl	1072168	0.0046
Heptane, 3,4-dimethyl	922281	0.0045
Cyclohexane, 1-isopropyl-2-methyl	16580237	0.0043
i-Paraffin, C10		0.0039
Cyclohexane, 1-methyl-2-propyl, trans	42806779	0.0039

Cyclohexane, 1,3,5-trimethyl	1839630	0.0034
Cyclohexane, 1,4-diethyl, trans	13990937	0.0034
Cyclopentane, 1-methyl-2-propyl	3728572	0.0033
Heptane, 2,5-dimethyl	2216300	0.0032
Cyclopentane, butyl	2040951	0.0031
Cyclohexane, 1-methyl-4-propyl, cis	28954429	0.0030
Cyclohexane, 1-ethyl-2,4-dimethyl	61142696	0.0030
Octane, 2,5-dimethyl	15869893	0.0028
Cyclohexane, isobutyl	1678984	0.0026
Heptane, 2,6-dimethyl	1072055	0.0026
Cyclohexane, 1,1,2-trimethyl	7094260	0.0025
c-Paraffin, C11		0.0025
Cyclohexane, 1-ethyl-4-methyl, cis	4926787	0.0025
Cyclohexane, 1,1,3-trimethyl	3073663	0.0025
Cyclohexane, 1,4-diethyl, cis	13990926	0.0023
Cyclohexane, 1,3-diethyl, cis	13991430	0.0022
Octane, 2,4-dimethyl	4032944	0.0022
Cyclohexane, 1,2,3-trimethyl, ctc	1678815	0.0019
u-Paraffin, C9		0.0019
Heptane, 3-ethyl	15869804	0.0019
Cyclohexane, 1-ethyl-3-methyl, cis	19489102	0.0017
Cyclohexane, 1,2,3-trimethyl, cct	7667552	0.0017
Cyclopentane, isobutyl	3788327	0.0016
Cyclohexane, 1-methyl-3-propyl, cis	42806757	0.0015
Decane, 2,6-dimethyl	13150817	0.0015
Cyclohexane, diethyl	1331437	0.0013
Nonane, 5-ethyl	17302124	0.0013
Cyclohexane, 1,3-diethyl, cis	13991430	0.0013
Cyclohexane, 1,2,4-trimethyl, ctc	7667596	0.0012
Octane, 3,5-dimethyl	15869939	0.0012
Decane, 2,5-dimethyl	17312504	0.0012
Cyclohexane, 1-isopropyl-3-methyl	16580248	0.0012
Cyclohexane, 1,2-dimethyl, cis	2207014	0.0012
Cyclohexane, 1,2,4-trimethyl, cct	7667585	0.0011
Cyclohexane, 1,2,3-trimethyl, ccc	1839889	0.0011
Cyclohexane, 1-methyl-3-propyl, trans	34522195	0.0010
Cyclopentane, 1,2,4-trimethyl, cct	4850286	0.0010
Indene, octahydro, trans	3296502	0.0010
Heptane, 4,4-dimethyl	1068195	0.0010
Decane, 2,9-dimethyl	1002171	0.0010
Heptane, 3-methyl	589811	0.0010
Cyclohexane, 1,2-diethyl, trans	13990959	0.0010
Heptane, 2-methyl	592278	0.0010
Decane, 4,5-dimethyl	17312468	0.0009
Cyclohexane, 1,4-dimethyl, cis	624293	0.0009
Decane, 4,6-dimethyl	17312491	0.0008
Heptane, 3,3-dimethyl	4032864	0.0008
Heptane, 4-ethyl	2216322	0.0008
Cyclohexane, 1,2-dimethyl, trans	6876239	0.0008
Decane, 2,7-dimethyl	17312515	0.0008
Dodecane	112403	0.0007
Heptane, 2,2-dimethyl	1071267	0.0007

Heptane, 2,3-dimethyl	3074713	0.0007
Decane, 2,4-dimethyl	2801845	0.0006
Decane, 3,5-dimethyl	17312480	0.0006
Undecane, 2-methyl	7045718	0.0006
Decane, 3-ethyl	17085960	0.0005
Cyclohexane, 1,1,4-trimethyl	7094271	0.0005
Decane, 2,8-dimethyl	17312526	0.0005
Hexane, 2,3,4-trimethyl	921471	0.0002
Total		1.0000