



## **Guidance document for responding to the *Notice with respect to certain high priority petroleum substances* published on March 8, 2008**

This document provides guidance for responding to the *Notice with respect to certain high priority petroleum substances*. This notice was published in the *Canada Gazette*, Part I, on March 8, 2008, pursuant to paragraph 71(1)(b) of the *Canadian Environmental Protection Act, 1999* (CEPA 1999). The guidance document is made available for information only and in case of discrepancy between this document and the notice or the *Act*, the notice and the *Act* take precedence.

The Domestic Substances List (DSL) includes substances that were, between January 1, 1984, and December 31, 1986, in Canadian commerce, used for manufacturing purposes, or manufactured in or imported into Canada in a quantity of 100 kg or more in any calendar year. Types of substances on the DSL include simple organic chemicals, pigments, organometallic compounds, surfactants, polymers, metal elements, metal salts and other inorganic substances, products of biotechnology as well as substances that are of "Unknown or Variable Composition, complex reaction products, or Biological materials" (referred to as UVCBs).

As required by CEPA 1999, the Minister of the Environment and the Minister of Health completed, in September 2006, an exercise to sort or "categorize" all 23,000 existing substances on the DSL in order to determine which substances require further attention in the form of assessment, research and/or measures to control their use or release. There were approximately 4,000 chemical substances identified as needing further attention.

A number of substances have been identified as high priorities for action based on the information obtained through the categorization process. This includes substances:

- that were found to meet all of the ecological categorization criteria, including persistence, bioaccumulation potential and inherent toxicity to aquatic organisms (PBiT), and that are known to be in commerce, or of commercial interest, in Canada, and/or
- that were found either to meet the categorization criteria for greatest potential for human exposure or to present an intermediate potential for exposure, and were identified as posing a high hazard to human health based on available evidence on carcinogenicity, mutagenicity, developmental toxicity or reproductive toxicity.

On December 8, 2006 the Government of Canada announced the Chemicals Management Plan. The Plan includes a number of proactive measures to make sure that chemical substances are managed properly.

A key element of the Chemicals Management Plan is the initiative known as the "Challenge" for about 200 high priority substances. This initiative was announced in a Notice published on December 9, 2006 in the *Canada Gazette* entitled: *Notice of Intent to develop and implement measures to assess and manage the risks posed by certain substances to the health of Canadians and their environment*. These 200 substances have been divided up into a number of smaller groups (batches) of substances. Every three months, the Government of Canada is challenging industry to provide new information on the properties and uses of a new batch of these substances.

Another key element of the Chemicals Management Plan is the **Petroleum Sector Stream Approach**. There are approximately 160 petroleum substances that are high priority, but were set aside from the Challenge to be addressed under a sectoral approach. These substances were identified by the Canadian Petroleum Products Institute (CPPI) and Health Canada as petroleum process stream

mixtures (referred to as UVCBs). The high priority petroleum substances were set aside from the Challenge because of the following considerations:

- Large number of substances;
- Substances that are primarily, if not exclusively, related to the petroleum sector; and
- Most are complex mixtures that may need to be considered differently from discrete substances.

The expectation is that the majority of these substances will be addressed according to the same timeline as the Challenge since they would have been part of the Challenge if they had not been set aside.

The March 8, 2008 notice requires information for 145 of these ~160 high priority petroleum substances. Some of the substances are not included because the government already has access to the information that would be collected for these substances through this notice.

For further information on the **Petroleum Sector Stream Approach**, please consult the Government of Canada's Chemical Substances Web site at [www.chemicalsubstances.gc.ca](http://www.chemicalsubstances.gc.ca) (*click on link to 'The Petroleum Sector Stream Approach'*). An advisory letter, concerning this notice and the collection of information, was sent to a target community of approximately 14 companies and industry associations.

## Information for Completion of the March 8, 2008 notice

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## 1. What is the purpose of the notice?

Section 71 notices may be used for the purpose of assessing whether a substance is toxic or capable of becoming toxic, or for the purpose of assessing whether to control, or the manner in which to control, a substance.

The purpose of the current section 71 notice is to identify:

- whether the substances covered under the notice are manufactured or acquired for use as feedstock by facilities in Canada that engage in petroleum refining and/or upgrading;
- the relative quantity ranges of these substances manufactured or acquired for use as feedstock in Canada;
- whether the substances leave the petroleum refining or upgrading facilities, and if so, how.

## 2. Where can I get a copy of the notice?

The notice was published in Part 1 of the *Canada Gazette*, pursuant to paragraph 71(1)(b) of CEPA 1999 on March 8, 2008. Electronic copies of the notice can be found on the Internet site at the following addresses: [www.ec.gc.ca/CEPARegistry/notices](http://www.ec.gc.ca/CEPARegistry/notices) or [www.chemicalsubstances.gc.ca](http://www.chemicalsubstances.gc.ca) (click on link to 'The Petroleum Sector Stream Approach').

## 3. How should I respond to the notice?

If the notice applies to you, you are encouraged to provide the required information using the electronic format distributed by Environment Canada. If you do not have a copy of the electronic format, please contact Environment Canada at phone number 1-888-228-0530 or 819-956-9313, or at the following email address: [DSL.SurveyCo@ec.gc.ca](mailto:DSL.SurveyCo@ec.gc.ca). Please indicate on the phone or in the Subject line of your email that you have a "CMP Petroleum Stream Inquiry".

The data should be entered in the electronic format, saved on a compact disk and returned by mail. For the submission to be complete, you must also return an original signed copy of the "Identification and Declaration Form" (Section 3 of Schedule 3).

The electronic format is a straightforward way to report all information required. If you choose not to use the electronic format, please note that the information you are required to report is specified in Schedule 3 of the notice.

## 4. What substances are included (Schedule 1)?

The table in Schedule 1 to the notice lists the substances covered by the notice (listed by CAS RN<sup>1</sup> and substance name). However, in Section 13 of this guidance document, you will also find a table that presents these substances along with a description and some common synonyms for most of the substances. This additional information is provided to assist you in identifying information related to each substance at your facility, but may not present all potential descriptions and synonyms that might exist for each substance. In case of discrepancy between this document and the notice, the notice takes precedence.

<sup>1</sup> CAS RN: Chemical Abstracts Service Registry Number. The Chemical Abstracts Service information is the property of the American Chemical Society and any use or redistribution, except as required in supporting regulatory requirements and/or for reports to the Government of Canada when the information and the reports are required by law or administrative policy, is not permitted without the prior, written permission of the American Chemical Society.

Information from this survey may be used to identify substances that are no longer in commerce and may be recommended for application of the “Significant New Activity” (SNAc) provisions of the *Canadian Environmental Protection Act, 1999*. Significant New Activity notices are a flag put on a chemical substance so that any major changes in the way it is used are reported to the Government of Canada. This way government experts can evaluate whether this new use poses a risk to human health or the environment.

This notice is collecting information relevant to the 2006 calendar year. However, if you have no information to report for a particular substance relative to 2006, but have manufactured the substance or acquired the substance for use as a feedstock prior to 2006 and/or are planning to manufacture it or acquire it for use as a feedstock later than 2006, you will likely wish to remain a stakeholder for this substance. Therefore, if you are not reporting information on a particular substance, but would like Environment Canada to be aware of your interest in it, please include a note in the Comments section of the electronic format.

## **5. Who is required to respond (Schedule 2)?**

As outlined in the notice, the notice applies to any person who, during the 2006 calendar year, owned or operated:

- a petroleum refining facility;
- an upgrading facility; or
- a facility that engaged in both petroleum refining and upgrading.

Persons satisfying this criterion are required to provide the information specified in Schedule 3 of the notice for the 2006 calendar year. If the person subject to the notice is a company, response to the notice shall be submitted on a company-wide basis but the person must include information separately with respect to each facility that engages in petroleum refining, upgrading, or both refining and upgrading in their single response on behalf of the entire company.

Subsection 71(3) of CEPA 1999 states that every person to whom a notice issued under section 71(1)(b) of the Act is directed, must comply with the notice within the time specified in the notice.

### ***5.1- Do I own or operate a petroleum refining facility?***

As outlined in Schedule 3 of the notice, a petroleum refining facility means a facility that engages in petroleum refining, which means the refining of crude oil or bitumen diluted with a hydrocarbon, into petroleum products, and includes storage and processes such as cogeneration, hydrogen generation and sulphur recovery, but excludes the production of synthetic crude oil.

### ***5.2- Do I own or operate an upgrading facility?***

As outlined in Schedule 3 of the notice, an upgrading facility means a facility that engages in upgrading, which means the conversion of bitumen or blends of bitumen or heavy crude oil or blends of heavy crude oil to produce synthetic crude oil or petroleum products and synthetic crude oil.

### ***5.3- Do I own or operate a facility that engages in both petroleum refining and upgrading?***

If you own or operate a facility that performs both petroleum refining and upgrading (as defined in Schedule 3 of the notice), you are required to report the information listed in Schedule 3 for both the petroleum refining and upgrading activities that occur at your facility.

## **6. Information Required (Schedule 3)**

### **6.1- Identification and Declaration Form (Section 3)**

The "Identification and Declaration Form" is provided for three reasons:

- to obtain the identification and contact information of each responder;
- to require certification of the accuracy of the response; and
- to request confidentiality.

As outlined in Schedule 3 of the notice, if the person subject to the notice is a company, response to the notice shall be submitted on a company-wide basis but the person must include information separately with respect to each facility that engages in petroleum refining, upgrading, or both refining and upgrading in their single response on behalf of the entire company. On the "Identification and Declaration Form" you must list each facility to which the response and declaration pertains.

Each response must be signed. For the submission to be complete, you must return an original signed copy of the "Identification and Declaration Form" to the Minister of the Environment (as outlined in Sections 3 and 8 of this document).

#### **Confidentiality requests**

Pursuant to section 313 of CEPA 1999, any person who provides information in response to the notice may submit, with the information, a written request that it be treated as confidential.

A request for confidentiality may be submitted for any information item provided on a particular substance in response to the notice. When requesting confidential treatment by the Minister of the Environment of information provided under the notice, you should provide a reason for your request. The reason may be based upon considerations such as those that appear as examples below:

- the information is confidential to your company and has consistently been treated as such by your company;
- your company has taken, and intends to continue to take, measures that are reasonable in the circumstances to maintain the confidentiality of the information;
- the information is not, and has not been, reasonably obtainable by third persons by use of legitimate means, except with the consent of your company;
- the information is not available to the public;
- disclosure of the information may reasonably be expected to cause substantial harm to the competitive position of your company;
- disclosure of the information may reasonably be expected to result in a material financial loss to your company or a material financial gain to your company's competitors.

Upon receipt of a request for confidentiality under section 313 of CEPA 1999, in relation to information submitted pursuant to the section 71 notice of CEPA 1999, the Minister of the Environment shall not disclose that information, except in accordance with section 315, 316 or 317 of CEPA 1999.

### **6.2- Facility Identification Form (Section 4)**

The "Facility Identification Form" is provided for two reasons:

- to obtain the identification and contact information of each facility for which the responder is reporting; and
- to assign an identification number to each facility for which the responder is reporting.

The facility identification number (the left hand column in the facility identification form), along with the facility name will be used to identify the specific facility for which reported information pertains.

If you wish to have a single contact person for your entire submission, you can submit the same contact name for each facility. The electronic format will give you the option to indicate this, via a checkbox, and will automatically copy the contact name and information from the Identification and Declaration Form into the corresponding facility contact name and information boxes on the Facility Identification Form.

### **6.3- Information on the Substances (Section 5)**

#### **a) What is the Facility Identifier?**

Each facility to which a submission pertains will be numbered (starting at number 1) on the facility identification form (Section 4 of Schedule 3). This same number should appear on the page(s) where information on each substance is provided for that particular facility. This will help to ensure that the information is reported for the correct facility.

#### **b) How do I report the activities performed at the facility**

The notice applies to any person who, during the 2006 calendar year, owned or operated: a petroleum refining facility; an upgrading facility; or a facility that engaged in both petroleum refining and upgrading. For each facility to which a submission pertains, the reporter must identify whether that facility performs petroleum refining, upgrading or both.

#### **c), d), e) & f) Manufacture, Acquire and Quantity Ranges**

##### **Do I manufacture?**

The term “manufacture” in the notice reads as follows: “manufacture” includes to produce or to prepare a substance as a product, as a feedstock, or as part of an intermediate stream.

You are not required to report information for a substance for which the total quantity manufactured is less than 100 kg.

This definition of manufacture relates to the creation/production of a substance, listed in Schedule 1 to the notice, regardless of whether that substance is considered a product or not.

It is recognized that intermediate streams are often identified as complex mixtures with only one CAS RN<sup>1</sup>. However, this definition is meant to include both this situation and the possibility that an intermediate stream may contain more than one listed CAS RN<sup>1</sup>.

The term intermediate stream refers to a stream that will be further processed by, e.g. blending, chemical transformation or burning.

For example, substance X is produced at your facility at an early stage in the process (e.g. as a stream leaving a fractionating tower). Substance X is later chemically converted to substance Y in a subsequent process (e.g. in a hydrocracker).

- *If substance X and/or substance Y appear on the list in Schedule 1 of the notice, then you are required to report that you manufactured both at your facility, and to estimate the quantity ranges that were manufactured.*

<sup>1</sup> **CAS RN**: Chemical Abstracts Service Registry Number. The Chemical Abstracts Service information is the property of the American Chemical Society and any use or redistribution, except as required in supporting regulatory requirements and/or for reports to the Government of Canada when the information and the reports are required by law or administrative policy, is not permitted without the prior, written permission of the American Chemical Society.

The term “manufacture”, as used in the notice, applies only to the production of the substance itself, and not to that of a product or mixture containing a reportable substance.

For example, you purchase substance X but do not produce it at your facility. You then blend substance X with other substances to make a product (substance Y).

- *If substance Y (the substance that was created at your facility) appears on the list, you should report that you manufactured it.*
- *However, if substance X appears on the list in Schedule 1 of the notice, you should not report that you manufactured it. You should report that you acquired it for use as a feedstock (see below).*

### **Do I acquire for use as a feedstock?**

As outlined in Schedule 3 of the notice, persons subject to this notice will provide information for substances that they acquire for use as a feedstock if that person did not manufacture the substance.

For example, substance X is produced at your facility. However, you also purchase a quantity of substance X from another facility.

- *If substance X appears on the list in Schedule 1 of the notice, you should report that you manufacture it (and estimate the quantity range manufactured) but you do not need to report that you also acquire it.*

The term “acquire” in the notice reads as follows: “acquire” includes any means of obtaining a substance other than manufacturing it at the facility to which the reported information pertains, including import, purchase domestically, and transfer.

It is expected that transfers would occur from another facility.

You are not required to report information for a substance for which the total quantity acquired for use as a feedstock is less than 100 kg.

For example, you do not produce substance X at your facility. However, you do purchase substance X from a distributor to blend with other substances at your facility to make a product (substance Y).

- *If substance X appears on the list in Schedule 1 of the notice, you should report that you acquired it for use as a feedstock.*
- *If substance Y (the substance that was created at your facility) appears on the list, you should report that you manufactured it.*

Activities included in the term “acquire” include:

- Obtaining any substance identified in Schedule 1 at a relevant facility by movement through Canada, including purchases or transfers from other companies as well as internal company transfers from another facility.
- Obtaining any substance identified in Schedule 1 at a relevant facility by import into Canada, which relates specifically to the movement of the substance into Canada from another country including purchases or transfers from other companies as well as internal company transfers across the Canadian border.

For example, you do not produce substance X at your facility. However, a different facility owned by your company does produce it, and transfers it to your facility.

- *If substance X appears on the list in Schedule 1 of the notice, you should report that you acquired it, and the facility that transferred it to you would report that they manufactured substance X.*

The term “feedstock” in the notice reads as follows: “feedstock” means any raw material that is used in or upgraded by an industrial process. The person is not required to report on substances that they acquire for uses other than as a feedstock.

For example, you do not manufacture substance X at your facility, nor do you obtain it by some other means (e.g. purchase it) to use as a feedstock in your process. However, there is the possibility that substance X is an ingredient in a cleaning product that you purchase for maintenance at your facility.

- *If substance X appears on the list in Schedule 1 of the notice, there is no need to verify the ingredient lists of all the products that you purchase at your facility. If you are sure that you do not manufacture the substance, nor use it as a feedstock – you do not have reporting requirements associated with this substance.*

### **How do I report the quantity ranges manufactured or acquired for use as a feedstock?**

It is necessary to report the total quantity ranges manufactured for the substances listed on Schedule 1 to the notice. For any substances that the person acquires for use as a feedstock but does not manufacture, it is necessary to report the total quantity ranges acquired for use as a feedstock for the substances listed on Schedule 1 to the notice.

Quantities must be estimated for the substance itself, and not the mixture, product or manufactured item in which it may be contained.

You are not required to report information for a substance for which the total quantity manufactured or acquired for use as a feedstock is less than 100 kg.

Quantity ranges must be reported by selecting the most appropriate of the quantity options given:

- > 100, < 1,001 (value is greater than 100 but less than 1,001)
- 1,001, < 100,001 (value is greater than or equal to 1,001 but less than 100,001)
- 100,001, < 1,000,001 or (value is greater than or equal to 100,001 but less than 1,000,001)
- ≥ 1,000,001 (value is greater than or equal to 1,000,001)

And by selecting one of the units given:

- Kilograms
- Tonnes (meaning metric tonnes, equal to 1000 kg)
- Cubic Metres

### **g) How do I report the fate(s) of the substance (under the specified CAS RN<sup>1</sup>) during or following the petroleum refining or upgrading activities?**

This question must be answered by selecting all of the applicable options given. In addition, it's important to remember that this question pertains to the substance itself (under the specified CAS RN<sup>1</sup>). For example, if you manufacture 100 kg of a substance and 90 kg are consumed at your facility but 10 kg are transferred (under that CAS RN<sup>1</sup>) to another petroleum sector facility to be used as a feedstock, you would check the first two options. However, if all 100 kg are transformed or chemically reacted to form a different substance, then you would only check the first option (that the substance has been consumed), even if the other substance that has been produced leaves the facility.

The following are some examples / further explanation to help you decide which options to choose when answering this question:

- It is consumed at the facility
  - Select this option if any amount of the substance does not leave the facility at all.

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- An example of this situation would be if an amount of the substance is used as a feedstock in a process, and through that process is chemically converted into a different substance.
- Another example would be if an amount of the substance is burned as a fuel at your facility, or is consumed during use as a grease or lubricant.
- It is transferred to another petroleum sector facility to be used as feedstock
  - Select this option if an amount of the substance leaves the facility (under the specified CAS RN<sup>1</sup>) to be used as a feedstock at a different facility in the petroleum sector.
- It is sold or otherwise supplied to a facility in another sector for use as feedstock.
  - Select this option if an amount of the substance leaves the facility (under the specified CAS RN<sup>1</sup>) to be used as a feedstock at a different facility in a sector other than the petroleum sector
- It enters commerce as a final product
  - Select this option if an amount of the substance (under the specified CAS RN<sup>1</sup>) leaves the facility to enter commerce
- It leaves the facility for disposal / recycling
  - Select this option if an amount of the substance (under the specified CAS RN<sup>1</sup>) leaves the facility to be transferred to an off-site waste facility, including a third party facility, which will handle, recycle or dispose of the substance.
- It leaves the facility through stack or point source air releases
  - Select this option if an amount of the substance (under the specified CAS RN<sup>1</sup>) leaves the facility as an air release through a stack or point source.
- It does not leave the facility under the specified CAS RN<sup>1</sup>, but it is a component of a mixture that leaves the facility
  - Select this option if an amount of the substance does not leave the facility on its own (under the specified CAS RN<sup>1</sup>), but is a component of a mixture that does leave the facility.
  - An example of this situation would be if the substance is blended with one or more other substances to form a mixture that leaves the facility, but the substance is not chemically converted into a different substance.
- It is injected into onsite deep disposal wells
  - Select this option if an amount of the substance is injected into onsite deep disposal wells.
- It is discharged to an onsite wastewater treatment unit
  - Select this option if an amount of the substance is discharged to an onsite wastewater treatment unit.
- It is disposed of in an onsite landfill or landfarm
  - Select this option if an amount of the substance is disposed of onsite to a landfill and/or land farm.
- Other (specify) \_\_\_\_\_
  - Select this option if an amount of the substance (under the specified CAS RN<sup>1</sup>) undergoes a fate not specified above – either at the facility or as a means of leaving the facility. Include a written description of how the substance leaves the facility.

## 7. Information you may reasonably be expected to have access to

You are required to provide information that your company possesses or to which you may reasonably be expected to have access. For example, when importing a substance, mixture, product or manufactured item you may reasonably be expected to have access to the relevant Material Safety Data Sheet (MSDS). An MSDS is an important source of information on the composition of a purchased product. Note that the goal of the MSDS is to protect the health of the workers, not the environment. Therefore, an MSDS may not list all product ingredients on which the Minister of the Environment is requiring information under the notice. You are encouraged to contact your supplier for more detailed information on product composition.

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Also, a company may reasonably be expected to have access to a parent company's information regarding substances, mixtures, products or manufactured items. You are not required to conduct tests to comply with this notice.

## 8. To whom do I respond and at what address?

As indicated above, you are encouraged to provide the information using the electronic format distributed by Environment Canada. The information should be saved on a compact disk. In order for the submission to be complete, you must also return an original signed copy of the "Identification and Declaration Form" (Section 3 of Schedule 3. This should be included with the compact disk, and mailed to Environment Canada.

Responses to the notice must be submitted to the Minister of the Environment, to the attention of the:

**By mail:**

DSL Surveys Coordinator  
Existing Substances Program  
351 Saint-Joseph Boulevard  
20<sup>th</sup> Floor  
Gatineau QC K1A 0H3

**By courier:**

DSL Surveys Coordinator  
Existing Substances Program  
351 Saint-Joseph Boulevard  
20<sup>th</sup> Floor  
Gatineau QC K1A 0H3

**By fax:**

1-800-410-4314  
or  
819-953-4936

Note on envelope:  
**CMP Petroleum Stream  
Submission**

Note on envelope:  
**CMP Petroleum Stream  
Submission**

Include in subject line:  
**CMP Petroleum Stream  
Submission**

## 9. What is the deadline for response?

Every person to whom the notice applies is required to comply with the notice no later than **July 15, 2008, 3 p.m. Eastern Daylight Saving Time.**

## 10. What if I need an extension?

As provided in subsection 71(4) of CEPA 1999, you may submit a written request for an extension of time to comply with the notice. The request for an extension should include the CAS RN<sup>1</sup>s of the substances on which information will be reported and provide a reason for the request. Address your request to the Minister of the Environment, to the attention of the:

DSL Surveys Coordinator  
Existing Substances Program  
351 Saint-Joseph Boulevard, 20<sup>th</sup> Floor  
Gatineau QC K1A 0H3  
Fax: 1-800-410-4314/819-953-4936  
Email: [DSL.SurveyCo@ec.gc.ca](mailto:DSL.SurveyCo@ec.gc.ca)

and indicate on the envelope or in the subject line "**CMP Petroleum Stream Extension Request**". Please note that you must request an extension of time before expiry of **the July 15, 2008, 3 p.m. Eastern Daylight Saving Time** deadline. **No extensions will be granted after the deadline has expired.** It is recommended to allow five business days so that a request can be processed by the Minister of the Environment before expiry of the deadline.

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## 11. If I do not fall under the requirements of this notice but wish to indicate stakeholder interest in any of the substances, how do I do that?

This notice is seeking to gather information on the substances listed in Schedule 1 to the notice, from anyone who owns or operates a petroleum refining facility or an upgrading facility. The goal is to ensure regulatory decisions are made considering all business activity in Canada.

### 11.1- Declaration of Stakeholder Interest

Persons, including companies other than those that engage in petroleum refining or upgrading (**and thus do not fall under the requirements to respond to the notice**), who have a current or future interest in any high priority petroleum substances, may identify themselves as a “stakeholder” for the substance by completing the Declaration of Stakeholder Interest. This form is available on the Chemical Substances web site at [www.chemicalsubstances.gc.ca](http://www.chemicalsubstances.gc.ca) (click on link to ‘The Petroleum Sector Stream Approach’).

Please identify the substances of interest to your company and specify your activity or potential activity with the substance (import, manufacture, use). You will be included in any future mailings regarding section 71 notices applicable for these substances and may be contacted for further information regarding your activity/interest in these substances.

## 12. Inquiries- who to contact

If you have an inquiry, please contact the DSL Surveys Coordinator at the following numbers or email address:

- telephone: 1-888-228-0530 or 819-956-9313
- fax: 1-800-410-4314 or 819-953-4936
- email: [DSL.SurveyCo@ec.gc.ca](mailto:DSL.SurveyCo@ec.gc.ca) (and indicate in the subject line “CMP Petroleum Stream Inquiry”).

## 13. List of Substances

**NOTE: The following table is provided for information only. For the official list of substances covered, please refer to Schedule 1 of the notice.**

CAS RN <sup>1</sup>	Chemical Name	Description	Other Names
8030-30-6	Naphtha	Refined, partly refined, or unrefined petroleum products produced by the distillation of natural gas. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>5</sub> through C <sub>6</sub> and boiling in the range of approximately 38°C to 93°C (100°F to 200°F). (DSL)	<ul style="list-style-type: none"> <li>• Amsco H-J</li> <li>• Amsco H-SB</li> <li>• Benzin</li> <li>• Benzin B 70</li> <li>• Exxon Naphtha 5</li> <li>• Exxsol D 3135</li> <li>• Hi-flash naphtha</li> <li>• HI-SOPL</li> <li>• Kwick Dry</li> <li>• Naphtesol M</li> <li>• Naphtha 5</li> <li>• NAPHTHA, SOLVENT</li> <li>• Petroleum benzin</li> <li>• Petroleum naphtha</li> <li>• Solvents, naphthas</li> <li>• Super VMP</li> <li>• UN 1255 (DOT)</li> <li>• UN 1256 (DOT)</li> <li>• UN 1271 (DOT)</li> <li>• UN 2553 (DOT)</li> </ul>
64741-41-9	Naphtha (petroleum), heavy straight-run	A complex combination of hydrocarbons produced by distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>6</sub> through C <sub>12</sub> and boiling in the range of approximately 65°C to 230°C (149°F to 446°F).	<ul style="list-style-type: none"> <li>• Atmospheric gas oil (petroleum)</li> <li>• Heavy straight run naphtha</li> <li>• Heavy straight run naphtha (petroleum)</li> </ul>
64741-42-0	Naphtha (petroleum), full-range straight-run	A complex combination of hydrocarbons produced by distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>4</sub> through C <sub>11</sub> and boiling in the range of approximately minus 20°C to 220°C (-4°F to 428°F).	<ul style="list-style-type: none"> <li>• Full range straight run naphtha (petroleum)</li> </ul>
64741-45-3	Residues (petroleum), atm. tower	A complex residuum from the atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly greater than C <sub>20</sub> and boiling above approximately 350°C (662°F). This stream is likely to contain 5 wt. % or more of 4- to 6-membered condensed ring aromatic hydrocarbons.	<ul style="list-style-type: none"> <li>• Atmospheric tower residuum (petroleum)</li> <li>• Vacuum tower, atmospheric tower bottom</li> </ul>
64741-46-4	Naphtha (petroleum), light straight-run	A complex combination of hydrocarbons produced by distillation of crude oil. It consists predominantly of aliphatic hydrocarbons having carbon numbers predominantly in the range of C <sub>4</sub> through C <sub>10</sub> and boiling in the range of approximately minus 20°C to 180°C (-4°F to 356°F).	<ul style="list-style-type: none"> <li>• Light straight run gasoline</li> <li>• Light straight run naphtha (petroleum)</li> </ul>
64741-47-5	Natural gas condensates (petroleum)	A complex combination of hydrocarbons separated as a liquid from natural gas in a surface separator by retrograde condensation. It consists mainly of hydrocarbons having carbon numbers predominantly in the range of C <sub>2</sub> to C <sub>20</sub> . It is a liquid at atmospheric temperature and pressure.	<ul style="list-style-type: none"> <li>• Natural gas condensate</li> </ul>
64741-48-6	Natural gas (petroleum), raw liq. mix	A complex combination of hydrocarbons separated as a liquid from natural gas in a gas recycling plant by processes such as refrigeration or absorption. It consists mainly of saturated aliphatic hydrocarbons having carbon numbers in the range of C <sub>2</sub> through C <sub>8</sub> .	<ul style="list-style-type: none"> <li>• Natural gas liquid</li> <li>• Natural gas liquids</li> <li>• Raw natural gas liquid mix (petroleum)</li> </ul>

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CAS RN <sup>1</sup>	Chemical Name	Description	Other Names
64741-50-0	Distillates (petroleum), light paraffinic	A complex combination of hydrocarbons produced by vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>15</sub> through C <sub>30</sub> and produces a finished oil with a viscosity of less than 100 SUS at 100°F (19cSt at 40°C). It contains a relatively large proportion of saturated aliphatic hydrocarbons normally present in this distillation range of crude oil.	<ul style="list-style-type: none"> <li>Distillates, (petroleum), light paraffinic</li> </ul>
64741-51-1	Distillates (petroleum), heavy paraffinic	A complex combination of hydrocarbons produced by vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>20</sub> through C <sub>50</sub> and produces a finished oil with a viscosity of at least 100 SUS at 100°F (19cSt at 40°C). It contains a relatively large proportion of saturated aliphatic hydrocarbons.	<ul style="list-style-type: none"> <li>Distillates, (petroleum), heavy paraffinic</li> <li>Heavy paraffinic distillate (petroleum)</li> <li>PD Slack Wax MDI</li> </ul>
64741-52-2	Distillates (petroleum), light naphthenic	A complex combination of hydrocarbons produced by vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>15</sub> through C <sub>30</sub> and produces a finished oil with a viscosity of less than 100 SUS at 100°F (19cSt at 40°C). It contains relatively few normal paraffins.	<ul style="list-style-type: none"> <li>Light naphthenic distillate (petroleum) 15%</li> <li>Light naphthenic petroleum distillates</li> </ul>
64741-53-3	Distillates (petroleum), heavy naphthenic	A complex combination of hydrocarbons produced by vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>20</sub> through C <sub>50</sub> and produces a finished oil with a viscosity of at least 100 SUS at 100°F (19cSt at 40°C). It contains relatively few normal paraffins.	<ul style="list-style-type: none"> <li>Distillates, heavy naphthenic</li> <li>Heavy naphthenic distillate (petroleum)</li> <li>Naphthenic oil mixture heavy naphthenic distillate (petroleum) 50%</li> </ul>
64741-54-4	Naphtha (petroleum), heavy catalytic cracked	A complex combination of hydrocarbons produced by a distillation of products from a catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>6</sub> through C <sub>12</sub> and boiling in the range of approximately 65°C to 230°C (149°F to 446°F). It contains a relatively large proportion of unsaturated hydrocarbons.	<ul style="list-style-type: none"> <li>Heavy catalytic cracked naphtha</li> <li>Heavy catalytic cracked naphtha (petroleum)</li> <li>Naphtha, heavy catalytic cracked</li> </ul>
64741-55-5	Naphtha (petroleum), light catalytic cracked	A complex combination of hydrocarbons produced by the distillation of products from a catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>4</sub> through C <sub>11</sub> and boiling in the range of approximately minus 20°C to 190°C (-4°F to 374°F). It contains a relatively large proportion of unsaturated hydrocarbons.	<ul style="list-style-type: none"> <li>Light catalytic cracked naphtha (petroleum)</li> </ul>
64741-57-7	Gas oils (petroleum), heavy vacuum	A complex combination of hydrocarbons produced by the vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>20</sub> through C <sub>50</sub> and boiling in the range of approximately 350°C to 600°C (662°F to 1112°F). This stream is likely to contain 5 wt. % or more of 4- to 6-membered condensed ring aromatic hydrocarbons.	<ul style="list-style-type: none"> <li>Heavy vacuum gas oil (petroleum)</li> <li>Vacuum gas oil (petroleum)</li> </ul>
64741-59-9	Distillates (petroleum), light catalytic cracked	A complex combination of hydrocarbons produced by the distillation of products from a catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>9</sub> through C <sub>25</sub> and boiling in the range of approximately 150°C to 400°C (302°F to 752°F). It contains a relatively large proportion of bicyclic aromatic hydrocarbons.	<ul style="list-style-type: none"> <li>Catalytically cracked distillate, light</li> <li>Distillates (petroleum), light catalytic cracked, low-boiling</li> <li>Distillates (petroleum), light catalytic cracked, low-boiling fraction</li> <li>Light catalytic cracked</li> </ul>

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CAS RN <sup>1</sup>	Chemical Name	Description	Other Names
			distillate (petroleum) <ul style="list-style-type: none"> <li>• Petroleum distillate (light catalytic cracked)</li> <li>• Polymer entrained light catalytic cracked distillate</li> </ul>
64741-61-3	Distillates (petroleum), heavy catalytic cracked	A complex combination of hydrocarbons produced by the distillation of products from a catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>15</sub> through C <sub>35</sub> and boiling in the range of approximately 260°C to 500°C (500°F to 932°F). This stream is likely to contain 5 wt. % or more of 4- to 6-membered condensed ring aromatic hydrocarbons.	<ul style="list-style-type: none"> <li>• Heavy catalytic cracked distillate (petroleum)</li> <li>• Heavy cycle oil (petroleum)</li> </ul>
64741-62-4	Clarified oils (petroleum), catalytic cracked	A complex combination of hydrocarbons produced as the residual fraction from distillation of the products from a catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly greater than C <sub>20</sub> and boiling above approximately 350°C (662°F). This stream is likely to contain 5 wt. % or more of 4- to 6-membered condensed ring aromatic hydrocarbons.	<ul style="list-style-type: none"> <li>• Carbon black oil (petroleum)</li> <li>• Catalytic cracked clarified oil (petroleum)</li> <li>• Clarified oils (petroleum), catalytic cracked</li> <li>• Intermediate clarified oil solvent extract</li> <li>• Recycle catalytic cracked slurry oil</li> </ul>
64741-63-5	Naphtha (petroleum), light catalytic reformed	A complex combination of hydrocarbons produced from the distillation of products from a catalytic reforming process. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>5</sub> through C <sub>11</sub> and boiling in the range of approximately 35°C to 190°C (95°F to 374°F). It contains a relatively large proportion of aromatic and branched chain hydrocarbons. This stream may contain 10 vol. % or more benzene.	<ul style="list-style-type: none"> <li>• Light catalytic reformed naphtha (petroleum)</li> <li>• Naphthalene plant light gasoline</li> <li>• Platformate</li> </ul>
64741-64-6	Naphtha (petroleum), full-range alkylate	A complex combination of hydrocarbons produced by distillation of the reaction products of isobutane with monoolefinic hydrocarbons usually ranging in carbon numbers from C <sub>3</sub> through C <sub>5</sub> . It consists of predominantly branched chain saturated hydrocarbons having carbon numbers predominantly in the range of C <sub>7</sub> through C <sub>12</sub> and boiling in the range of approximately 90°C to 220°C (194°F to 428°F).	<ul style="list-style-type: none"> <li>• Full range alkylate naphtha (petroleum)</li> </ul>
64741-65-7	Naphtha (petroleum), heavy alkylate	A complex combination of hydrocarbons produced by distillation of the reaction products of isobutane with monoolefinic hydrocarbons usually ranging in carbon numbers from C <sub>3</sub> to C <sub>5</sub> . It consists of predominantly branched chain saturated hydrocarbons having carbon numbers predominantly in the range of C <sub>9</sub> through C <sub>12</sub> and boiling in the range of approximately 150°C to 220°C (302°F to 428°F).	<ul style="list-style-type: none"> <li>• Aliphatic HC's, iso-paraffins</li> <li>• Heavy alkylate naphtha (petroleum)</li> <li>• Low boiling point modified naphtha</li> <li>• Naphtha (petroleum) heavy alkylate</li> <li>• UN 1268</li> </ul>
64741-66-8	Naphtha (petroleum), light alkylate	A complex combination of hydrocarbons produced by distillation of the reaction products of isobutane with monoolefinic hydrocarbons usually ranging in carbon numbers from C <sub>3</sub> through C <sub>5</sub> . It consists of predominantly branched chain saturated hydrocarbons having carbon numbers predominantly in the range of C <sub>7</sub> through C <sub>10</sub> and boiling in the range of approximately 90°C to 160°C (194°F to 320°F).	<ul style="list-style-type: none"> <li>• Light alkylate naphtha (petroleum)</li> </ul>

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64741-67-9	Residues (petroleum), catalytic reformer fractionator	A complex combination of hydrocarbons produced as the residual fraction from distillation of the product from a catalytic reforming process. It consists of predominantly aromatic hydrocarbons having carbon numbers predominantly in the range of C <sub>10</sub> through C <sub>25</sub> and boiling in the range of approximately 160°C to 400°C (320°F to 752°F). This stream is likely to contain 5 wt. % or more of 4- or 6-membered condensed ring aromatic hydrocarbons.	<ul style="list-style-type: none"> <li>• Catalytic reformer fractionator residue (petroleum)</li> <li>• Naphthalene plant residue</li> </ul>
64741-68-0	Naphtha (petroleum), heavy catalytic reformed	A complex combination of hydrocarbons produced from the distillation of products from a catalytic reforming process. It consists of predominantly aromatic hydrocarbons having carbon numbers predominantly in the range of C <sub>7</sub> through C <sub>12</sub> and boiling in the range of approximately 90°C to 230°C (194°F to 446°F).	<ul style="list-style-type: none"> <li>• Naphthalene plant heavy gasoline</li> <li>• Naphtha (petroleum), heavy catalytic reformed</li> </ul>
64741-69-1	Naphtha (petroleum), light hydrocracked	A complex combination of hydrocarbons from distillation of the products from a hydrocracking process. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly in the range of C <sub>4</sub> through C <sub>10</sub> , and boiling in the range of approximately minus 20°C to 180°C (-4°F to 356°F).	<ul style="list-style-type: none"> <li>• Light hydrocracked naphtha (petroleum)</li> <li>• Naphtha, light hydrocracked</li> </ul>
64741-74-8	Naphtha (petroleum), light thermal cracked	A complex combination of hydrocarbons from distillation of products from a thermal cracking process. It consists predominantly of unsaturated hydrocarbons having carbon numbers predominantly in the range of C <sub>4</sub> through C <sub>8</sub> and boiling in the range of approximately minus 10°C to 130°C (14°F to 266°F).	<ul style="list-style-type: none"> <li>• Light coker naphtha (petroleum)</li> <li>• Light thermal cracked C<sub>4</sub>-C<sub>5</sub> naphtha and gas oil distillate</li> <li>• Light thermal cracked naphtha (petroleum)</li> </ul>
64741-75-9	Residues (petroleum), hydrocracked	A complex combination of hydrocarbons produced as the residual fraction from distillation of the products of a hydrocracking process. It consists of hydrocarbons having carbon numbers predominantly greater than C <sub>20</sub> and boiling above approximately 350°C (662°F).	<ul style="list-style-type: none"> <li>• Hydrocracked residuum (petroleum)</li> </ul>
64741-76-0	Distillates (petroleum), heavy hydrocracked	A complex combination of hydrocarbons from the distillation of the products from a hydrocracking process. It consists predominantly of saturated hydrocarbons having carbon numbers in the range of C <sub>15</sub> -C <sub>39</sub> and boiling in the range of approximately 260°C to 600°C (500°F to 1112°F).	<ul style="list-style-type: none"> <li>• Heavy hydrocracked distillate (petroleum)</li> <li>• Heavy hydrocracked distillate (shale oil)</li> <li>• Resid hydroprocessing unit middle distillate</li> </ul>
64741-77-1	Distillates (petroleum), light hydrocracked	A complex combination of hydrocarbons from distillation of the products from a hydrocracking process. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly in the range of C <sub>10</sub> through C <sub>18</sub> , and boiling in the range of approximately 160°C to 320°C (320°F to 608°F).	<ul style="list-style-type: none"> <li>• Light hydrocracked distillate (petroleum)</li> </ul>
64741-78-2	Naphtha (petroleum), heavy hydrocracked	A complex combination of hydrocarbons from distillation of the products from a hydrocracking process. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly in the range of C <sub>6</sub> through C <sub>12</sub> , and boiling in the range of approximately 65°C to 230°C (148°F to 446°F).	<ul style="list-style-type: none"> <li>• Heavy hydrocracked naphtha (petroleum)</li> </ul>
64741-80-6	Residues (petroleum), thermal cracked	A complex combination of hydrocarbons produced as the residual fraction from distillation of the product from a thermal cracking process. It consists predominantly of unsaturated hydrocarbons having carbon numbers predominantly greater than C <sub>20</sub> and boiling above approximately 350°C (662°F). This stream is likely to contain 5 wt. % or more of 4- to 6-membered condensed ring aromatic hydrocarbons.	<ul style="list-style-type: none"> <li>• Thermal cracked residuum (petroleum)</li> </ul>

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CAS RN <sup>1</sup>	Chemical Name	Description	Other Names
64741-81-7	Distillates (petroleum), heavy thermal cracked	A complex combination of hydrocarbons from the distillation of the products from a thermal cracking process. It consists predominantly of unsaturated hydrocarbons having carbon numbers predominantly in the range of C <sub>15</sub> through C <sub>36</sub> and boiling in the range of approximately 260°C to 480°C (500°F to 896°F). This stream is likely to contain 5 wt. % or more of 4- to 6-membered ring aromatic hydrocarbons.	<ul style="list-style-type: none"> <li>• Distillate (petroleum), heavy thermal cracked</li> <li>• Distillates (petroleum), full-range thermal cracked</li> <li>• Heavy coker gas oil (petroleum)</li> <li>• Heavy cracked distillate (Petroleum)</li> <li>• Heavy thermal cracked distillate</li> <li>• Heavy thermal cracked distillate (petroleum)</li> </ul>
64741-82-8	Distillates (petroleum), light thermal cracked	A complex combination of hydrocarbons from the distillation of the products from a thermal cracking process. It consists predominantly of unsaturated hydrocarbons having carbon numbers predominantly in the range of C <sub>10</sub> through C <sub>22</sub> and boiling in the range of approximately 160°C to 370°C (320°F to 698°F).	<ul style="list-style-type: none"> <li>• Light thermal cracked distillate</li> <li>• Light thermal cracked distillate (petroleum)</li> </ul>
64741-84-0	Naphtha (petroleum), solvent-refined light	A complex combination of hydrocarbons obtained as the raffinate from a solvent extraction process. It consists predominantly of aliphatic hydrocarbons having carbon numbers predominantly in the range of C <sub>5</sub> through C <sub>11</sub> and boiling in the range of approximately 35°C to 190°C (95°F to 374°F).	<ul style="list-style-type: none"> <li>• Solvent refined light naphtha (petroleum)</li> <li>• Solvent refined light naphtha heartcut (petroleum)</li> </ul>
64741-86-2	Distillates (petroleum), sweetened middle	A complex combination of hydrocarbons obtained by subjecting a petroleum distillate to a sweetening process to convert mercaptans or to remove acidic impurities. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>9</sub> through C <sub>20</sub> and boiling in the range of approximately 150°C to 345°C (302°F to 653°F).	<ul style="list-style-type: none"> <li>• Distillate (petroleum), sweetened middle</li> <li>• Distillates (petroleum) sweetened middle</li> <li>• Sweetened middle distillate (petroleum)</li> <li>• Sweetened middle distillates (petroleum)</li> <li>• Sweetened middle petroleum distillates</li> </ul>
64741-87-3	Naphtha (petroleum), sweetened	A complex combination of hydrocarbons obtained by subjecting a petroleum naphtha to a sweetening process to convert mercaptans or to remove acidic impurities. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>4</sub> through C <sub>12</sub> and boiling in the range of approximately minus 10°C to 230°C (14°F to 446°F).	<ul style="list-style-type: none"> <li>• Sweetened hydrotreated light aromatic solvent naphtha</li> <li>• Sweetened naphtha (petroleum)</li> </ul>
64741-88-4	Distillates (petroleum), solvent-refined heavy paraffinic	A complex combination of hydrocarbons obtained as the raffinate from a solvent extraction process. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly in the range of C <sub>20</sub> through C <sub>50</sub> and produces a finish oil with a viscosity of at least 100 SUS at 100°F (19cSt at 40°C).	<ul style="list-style-type: none"> <li>• Base oil, bright stock, lubricant</li> <li>• Base oil, lubricant base stock</li> <li>• Solvent refined heavy paraffinic distillate</li> <li>• Solvent refined heavy paraffinic distillate (petroleum)</li> </ul>
64741-89-5	Distillates (petroleum), solvent-refined light paraffinic	A complex combination of hydrocarbons obtained as the raffinate from a solvent extraction process. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly in the range of C <sub>15</sub> through C <sub>30</sub> and produces a finished oil with a viscosity of less than 100 SUS at 100°F (19cSt at 40°C).	<ul style="list-style-type: none"> <li>• Solvent refined light paraffinic distillate</li> <li>• Solvent refined light paraffinic distillate (petroleum)</li> </ul>

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64741-91-9	Distillates (petroleum), solvent-refined middle	A complex combination of hydrocarbons obtained as the raffinate from a solvent extraction process. It consists predominantly of aliphatic hydrocarbons having carbon numbers predominantly in the range of C <sub>9</sub> through C <sub>20</sub> and boiling in the range of approximately 150°C to 345°C (302°F to 653°F).	• Solvent refined middle distillate (petroleum)
64741-95-3	Residual oils (petroleum), solvent deasphalted	A complex combination of hydrocarbons obtained as the solvent soluble fraction from C <sub>3</sub> - C <sub>4</sub> solvent deasphalting of a residuum. It consists of hydrocarbons having carbon numbers predominantly higher than C <sub>25</sub> and boiling above approximately 400°C (752°F).	• Solvent deasphalted residual oil (petroleum)
64741-96-4	Distillates (petroleum), solvent-refined heavy naphthenic	A complex combination of hydrocarbons obtained as the raffinate from a solvent extraction process. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>20</sub> through C <sub>50</sub> and produces a finished oil with a viscosity of at least 100 SUS at 100°F (19cSt at 40°C). It contains relatively few normal paraffins.	• Solvent refined heavy naphthenic distillate (petroleum)
64741-97-5	Distillates (petroleum), solvent-refined light naphthenic	A complex combination of hydrocarbons obtained as the raffinate from a solvent extraction process. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>15</sub> through C <sub>30</sub> and produces a finished oil with a viscosity of less than 100 SUS at 100°F (19 cSt at 40°C). It contains relatively few normal paraffins.	• Base oil • Distillates, petroleum, solvent-refined light naphthenic • Lubricant base oil • Lubricant oil • Mineral oil • Refined light naphthenic petroleum distillate • Solvent refined light naphthenic distillate (petroleum)
64742-01-4	Residual oils (petroleum), solvent-refined	A complex combination of hydrocarbons obtained as the solvent insoluble fraction from solvent refining of a residuum using a polar organic solvent such as phenol or furfural. It consists of hydrocarbons having carbon numbers predominantly higher than C <sub>25</sub> and boiling above approximately 400°C (752°F).	• Solvent refined residual oil (petroleum)
64742-04-7	Extracts (petroleum), heavy paraffinic distillate solvent	A complex combination of hydrocarbons obtained as the extract from a solvent extraction process. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C <sub>20</sub> through C <sub>50</sub> . This stream is likely to contain 5 wt. % or more of 4- to 6-membered condensed ring aromatic hydrocarbons.	• Heavy paraffinic distillate solvent extract • Heavy paraffinic distillate solvent extract (petroleum) • Heavy paraffinic distillate solvent extracts (petroleum)
64742-05-8	Extracts (petroleum), light paraffinic distillate solvent	A complex combination of hydrocarbons obtained as the extract from a solvent extraction process. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C <sub>15</sub> through C <sub>30</sub> . This stream is likely to contain 5 wt. % or more of 4- to 6-membered condensed ring aromatic hydrocarbons.	• Extracts (petroleum) light paraffinic distillate solvent • Light paraffinic distillate solvent extract (petroleum)
64742-11-6	Extracts (petroleum), heavy naphthenic distillate solvent	A complex combination of hydrocarbons obtained as the extract from a solvent extraction process. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C <sub>20</sub> through C <sub>50</sub> . This stream is likely to contain 5 wt. % or more of 4- to 6-membered condensed ring aromatic hydrocarbons.	• Heavy naphthenic distillate solvent extract (petroleum)

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64742-13-8	Distillates (petroleum), acid-treated middle	A complex combination of hydrocarbons obtained as a raffinate from a sulfuric acid treating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>11</sub> through C <sub>20</sub> and boiling in the range of approximately 205°C to 345°C (401°F to 653°F).	<ul style="list-style-type: none"> <li>• Acid treated light hydrocracked distillate (shale oil)</li> <li>• Acid-treated middle distillate (petroleum)</li> <li>• Distillates, petroleum, acid-treated middle</li> </ul>
64742-18-3	Distillates (petroleum), acid-treated heavy naphthenic	A complex combination of hydrocarbons obtained as a raffinate from a sulfuric acid treating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>20</sub> through C <sub>50</sub> and produces a finished oil with a viscosity of at least 100 SUS at 100°F (19cSt at 40°C). It contains relatively few normal paraffins.	<ul style="list-style-type: none"> <li>• Acid treated heavy naphthenic distillate (petroleum)</li> <li>• Distillates (petroleum) acid-treated heavy naphthenic</li> </ul>
64742-22-9	Naphtha (petroleum), chemically neutralized heavy	A complex combination of hydrocarbons produced by a treating process to remove acidic materials. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>6</sub> through C <sub>12</sub> and boiling in the range of approximately 65°C to 230°C (149°F to 446°F).	<ul style="list-style-type: none"> <li>• Chemically neutralized heavy naphtha (petroleum)</li> <li>• Naphtha, chemically neutralized heavy, petroleum</li> </ul>
64742-23-0	Naphtha (petroleum), chemically neutralized light	A complex combination of hydrocarbons produced by a treating process to remove acidic materials. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>4</sub> through C <sub>11</sub> and boiling in the range of approximately minus 20°C to 190°C (-4°F to 374°F).	<ul style="list-style-type: none"> <li>• Chemically neutralized light naphtha (petroleum)</li> <li>• Naphtha, chemically neutralized light, petroleum</li> </ul>
64742-30-9	Distillates (petroleum), chemically neutralized middle	A complex combination of hydrocarbons produced by a treating process to remove acidic materials. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>11</sub> through C <sub>20</sub> and boiling in the range of approximately 205°C to 345°C (401°F to 653°F).	<ul style="list-style-type: none"> <li>• Chemically neutralized middle distillate (petroleum)</li> </ul>
64742-34-3	Distillates (petroleum), chemically neutralized heavy naphthenic	A complex combination of hydrocarbons produced by a treating process to remove acidic materials. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>20</sub> through C <sub>50</sub> and produces a finished oil with a viscosity of at least 100 SUS at 100°F (19cSt at 40°C). It contains relatively few normal paraffins.	<ul style="list-style-type: none"> <li>• Chemically neutralized heavy naphthenic distillate</li> <li>• Chemically neutralized heavy naphthenic distillate (petroleum)</li> <li>• Chemically neutralized heavy naphthenic petroleum distillates</li> </ul>
64742-46-7	Distillates (petroleum), hydrotreated middle	A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>11</sub> through C <sub>25</sub> and boiling in the range of approximately 205°C to 400°C (401°F to 752°F).	<ul style="list-style-type: none"> <li>• Distillates (petroleum) hydrotreated middle</li> <li>• Distillates (petroleum), straight run middle, hydrotreated</li> <li>• Hydrotreated middle distillate</li> <li>• Hydrotreated middle distillate (petroleum)</li> <li>• Hydrotreated middle distillates (petroleum)</li> <li>• Hydrotreated middle petroleum distillates</li> </ul>
64742-48-9	Naphtha (petroleum), hydrotreated heavy	A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>6</sub> through C <sub>13</sub> and boiling in the range of approximately 65°C to 230°C (149°F to 446°F).	<ul style="list-style-type: none"> <li>• Catalytic Reformer Feed</li> <li>• Hydrotreated heavy naphtha</li> <li>• Hydrotreated heavy naphtha (petroleum)</li> <li>• Hydrotreated light steam</li> </ul>

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CAS RN <sup>1</sup>	Chemical Name	Description	Other Names
			cracked naphtha residuum (petroleum) <ul style="list-style-type: none"> <li>• Low boiling point hydrogen treated naphtha</li> <li>• Naphtha (petroleum), hydrotreated heavy, nonarom.</li> <li>• Naphtha, hydrotreated heavy</li> <li>• UN 3295</li> </ul>
64742-49-0	Naphtha (petroleum), hydrotreated light	A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>4</sub> through C <sub>11</sub> and boiling in the range of approximately minus 20°C to 190°C (-4°F to 374°F).	<ul style="list-style-type: none"> <li>• Hydrotreated light naphtha (petroleum)</li> <li>• Hydrotreated light straight run (petroleum)</li> <li>• Hydrotreated naphtha, light</li> </ul>
64742-52-5	Distillates (petroleum), hydrotreated heavy naphthenic	A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>20</sub> through C <sub>50</sub> and produces a finished oil of at least 100 SUS at 100°F (19cSt at 40°C). It contains relatively few normal paraffins.	<ul style="list-style-type: none"> <li>• Dist., petr., hydrotreated heavy naphthenic</li> <li>• Distill. (petroleum), hydrotreated heavy naphthenic</li> <li>• Distillates (petroleum) hydrotreated heavy naphthenic</li> <li>• Hydrotreated heavy naphthenic distillate</li> <li>• Hydrotreated heavy naphthenic distillate (petroleum)</li> <li>• Hydrotreated heavy naphthenic distillate solvent extract (petroleum)</li> <li>• Hydrotreated heavy naphthenic petroleum distillates</li> <li>• Petroleum distillates, hydrotreated heavy naphthenic</li> </ul>
64742-53-6	Distillates (petroleum), hydrotreated light naphthenic	A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>15</sub> through C <sub>30</sub> and produces a finished oil with a viscosity of less than 100 SUS at 100°F (19cSt at 40°C). It contains relatively few normal paraffins.	<ul style="list-style-type: none"> <li>• Distill. (petroleum), hydrotreated light naphthenic</li> <li>• Distillates (petroleum), hydrotreated, light naphthenic</li> <li>• Hydraulic petroleum oil</li> <li>• Hydrotreated light naphthenic (petroleum)</li> <li>• Hydrotreated light naphthenic distillate</li> <li>• Hydrotreated light naphthenic distillate (petroleum)</li> <li>• Hydrotreated light naphthenic distillate solvent extract (petroleum)</li> <li>• Severely hydro treated light naphthenic distillate</li> </ul>

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CAS RN <sup>1</sup>	Chemical Name	Description	Other Names
64742-54-7	Distillates (petroleum), hydrotreated heavy paraffinic	A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>20</sub> through C <sub>50</sub> and produces a finished oil of at least 100 SUS at 100°F (19cSt at 40°C). It contains a relatively large proportion of saturated hydrocarbons.	<ul style="list-style-type: none"> <li>• Distillates (petroleum) hydrotreated heavy paraffinic</li> <li>• Distillates, hydrotreated heavy paraffinic</li> <li>• Hydrotreated heavy paraffinic distillate (petroleum)</li> <li>• Petroleum hydrotreated heavy paraffinic</li> </ul>
64742-55-8	Distillates (petroleum), hydrotreated light paraffinic	A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>15</sub> through C <sub>30</sub> and produces a finished oil with a viscosity of less than 100 SUS at 100°F (19cSt at 40°C). It contains a relatively large proportion of saturated hydrocarbons.	<ul style="list-style-type: none"> <li>• Hydrotreated light paraffinic distillate</li> <li>• Hydrotreated light paraffinic distillate (petroleum)</li> <li>• Hydrotreated light paraffinic distillate petroleum</li> </ul>
64742-56-9	Distillates (petroleum), solvent-dewaxed light paraffinic	A complex combination of hydrocarbons obtained by removal of normal paraffins from a petroleum fraction by solvent crystallization. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C <sub>15</sub> through C <sub>30</sub> and produces a finished oil with a viscosity of less than 100 SUS at 100°F (19cSt at 40°C).	<ul style="list-style-type: none"> <li>• Solvent dewaxed light paraffinic distillate (petroleum)</li> </ul>
64742-57-0	Residual oils (petroleum), hydrotreated	A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly greater than C <sub>25</sub> and boiling above approximately 400°C (752°F).	<ul style="list-style-type: none"> <li>• Hydrotreated petroleum residual oil</li> <li>• Hydrotreated residual oil (petroleum)</li> <li>• Residual oils (petroleum) hydrotreated</li> </ul>
64742-59-2	Gas oils (petroleum), hydrotreated vacuum	A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>13</sub> through C <sub>50</sub> and boiling in the range of approximately 230°C to 600°C (446°F to 1112°F). This stream is likely to contain 5 wt. % or more of 4- to 6- membered condensed ring aromatic hydrocarbons.	<ul style="list-style-type: none"> <li>• Hydrotreated vacuum gas oil (petroleum)</li> </ul>
64742-61-6	Slack wax (petroleum)	A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>13</sub> through C <sub>50</sub> and boiling in the range of approximately 230°C to 600°C (446°F to 1112°F). This stream is likely to contain 5 wt. % or more of 4- to 6- membered condensed ring aromatic hydrocarbons.	<ul style="list-style-type: none"> <li>• PD Slack Wax MDI</li> <li>• Slack way (petroleum)</li> </ul>
64742-62-7	Residual oils (petroleum), solvent-dewaxed	A complex combination of hydrocarbons obtained by removal of long, branched chain hydrocarbons from a residual oil by solvent crystallization. It consists of hydrocarbons having carbon numbers predominantly greater than C <sub>25</sub> and boiling above approximately 400°C (752°F).	<ul style="list-style-type: none"> <li>• Residual oils, (petroleum), solvent-dewaxed</li> <li>• Solvent dewaxed residual oil (petroleum)</li> <li>• Solvent-dewaxed petroleum residual oil</li> </ul>
64742-63-8	Distillates (petroleum), solvent-dewaxed heavy naphthenic	A complex combination of hydrocarbon obtained by removal of normal paraffins from a petroleum fraction by solvent crystallization. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>20</sub> through C <sub>50</sub> and produces a finished oil of not less than 100 SUS at 100°F (19cSt at 40°C). It contains relatively few normal paraffins.	<ul style="list-style-type: none"> <li>• Solvent dewaxed heavy naphthenic distillate (petroleum)</li> </ul>

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CAS RN <sup>1</sup>	Chemical Name	Description	Other Names
64742-65-0	Distillates (petroleum), solvent-dewaxed heavy paraffinic	A complex combination of hydrocarbons obtained by removal of normal paraffins from a petroleum fraction by solvent crystallization. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C <sub>20</sub> through C <sub>50</sub> and produces a finished oil with a viscosity not less than 100 SUS at 100°F (19cSt at 40°C).	<ul style="list-style-type: none"> <li>Petroleum distillates, solvent dewaxed heavy paraffinic</li> <li>Solvent dewaxed heavy paraffinic distillate (petroleum)</li> <li>Solvent-dewaxed heavy paraffinic petroleum distillates</li> </ul>
64742-73-0	Naphtha (petroleum), hydrodesulfurized light	A complex combination of hydrocarbons obtained from a catalytic hydrodesulfurization process. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>4</sub> through C <sub>11</sub> and boiling in the range of approximately minus 20°C to 190°C (-4°F to 374°F).	<ul style="list-style-type: none"> <li>Hydrodesulfurized light naphtha (petroleum)</li> <li>Hydrotreated light steam cracked naphtha heartcut (petroleum)</li> </ul>
64742-79-6	Gas oils (petroleum), hydrodesulfurized	A complex combination of hydrocarbons obtained from a petroleum stock by treating with hydrogen to convert organic sulfur to hydrogen sulfide which is removed. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C <sub>13</sub> through C <sub>25</sub> and boiling in the range of approximately 230°C to 400°C (446°F to 752°F).	<ul style="list-style-type: none"> <li>Gas oils (petroleum) hydrodesulfurized</li> <li>Hydrodesulfurized gas oil (petroleum)</li> </ul>
64742-80-9	Distillates (petroleum), hydrodesulfurized middle	A complex combination of hydrocarbons obtained from a petroleum stock by treating with hydrogen to convert organic sulfur to hydrogen sulfide which is removed. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>11</sub> through C <sub>25</sub> and boiling in the range of approximately 205°C to 400°C (401°F to 752°F).	<ul style="list-style-type: none"> <li>Hydrodesulfurized middle distillate (petroleum)</li> <li>Hydrodesulfurized middle petroleum distillates</li> </ul>
64742-82-1	Naphtha (petroleum), hydrodesulfurized heavy	A complex combination of hydrocarbons obtained from a catalytic hydrodesulfurization process. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>7</sub> through C <sub>12</sub> and boiling in the range of approximately 90°C to 230°C (194°F to 446°F).	<ul style="list-style-type: none"> <li>Hydrodesulfurized heavy naphtha (petroleum)</li> </ul>
64742-89-8	Solvent naphtha (petroleum), light aliph.	A complex combination of hydrocarbons obtained from the distillation of crude oil or natural gasoline. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly in the range of C <sub>5</sub> through C <sub>10</sub> and boiling in the range of approximately 35°C to 160°C (95°F to 320°F).	<ul style="list-style-type: none"> <li>Light aliphatic solvent naphtha</li> <li>Light aliphatic solvent naphtha (petroleum)</li> <li>Skellysolve H</li> <li>Skellysolve L</li> <li>Solvent naphtha, petroleum, light aliph.</li> </ul>
64742-90-1	Residues (petroleum), steam-cracked	A complex combination of hydrocarbons obtained as the residual fraction from the distillation of the products of a steam cracking process (including steam cracking to produce ethylene). It consists predominantly of unsaturated hydrocarbons having carbon numbers predominantly greater than C <sub>14</sub> and boiling above approximately 260°C (500°F). This stream is likely to contain 5 wt. % or more of 4- to 6-membered condensed ring aromatic hydrocarbons.	<ul style="list-style-type: none"> <li>Steam cracked residuum (petroleum)</li> <li>Steam cracked residuum pitch (petroleum)</li> </ul>
64742-95-6	Solvent naphtha (petroleum), light arom.	A complex combination of hydrocarbons obtained from distillation of aromatic streams. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C <sub>8</sub> through C <sub>10</sub> and boiling in the range of approximately 135°C to 210°C (275°F to 410°F).	<ul style="list-style-type: none"> <li>Light aromatic solvent naphtha</li> <li>Light aromatic solvent naphtha (petroleum)</li> <li>Solvent naphth (petroleum), light arom.</li> <li>Solvent naphtha (petroleum) light arom.</li> </ul>

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CAS RN <sup>1</sup>	Chemical Name	Description	Other Names
			<ul style="list-style-type: none"> <li>• Solvent naphtha, petroleum, light arom.</li> <li>• Solvent, naphtha (petroleum), light aromatic</li> </ul>
64743-01-7	Petrolatum (petroleum), oxidized	A complex combination of organic compounds, predominantly high molecular weight carboxylic acids, obtained by the air oxidation of petrolatum.	• Oxidized petrolatum (petroleum)
68131-75-9	Gases (petroleum), C <sub>3-4</sub>	A complex combination of hydrocarbons produced by distillation of products from the cracking of crude oil. It consists of hydrocarbons having carbon numbers in the range of C <sub>3</sub> through C <sub>4</sub> , predominantly of propane and propylene, and boiling in the range of approximately -51°C to -1°C (-60°F to 30°F).	• Mixed (C3-C4) stream (petroleum)
68307-99-3	Tail gas (petroleum), catalytic polymn. naphtha fractionation stabilizer	A complex combination of hydrocarbons from the fractionation stabilization products from polymerization of naphtha. It consists predominantly of hydrocarbons having carbon numbers in the range of C1 through C4.	<ul style="list-style-type: none"> <li>• Catalytic polymerization stabilizer tail gas, hydrocarbon stream</li> <li>• Tail gas (petroleum), catalytic polym. naphtha fractionation stabilizer</li> </ul>
68333-22-2	Residues (petroleum), atmospheric	A complex residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly greater than C <sub>11</sub> and boiling above approximately 200°C (392°F). This stream is likely to contain 5 wt.% or more of 4- to 6-membered condensed ring aromatic hydrocarbons.	• Reduced crude (petroleum)
68333-25-5	Distillates (petroleum), hydrodesulfurized light catalytic cracked	A complex combination of hydrocarbons obtained by treating light catalytic cracked distillates with hydrogen to convert organic sulfur to hydrogen sulfide which is removed. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>9</sub> through C <sub>25</sub> and boiling in the range of approximately 150°C to 400°C (302°F to 752°F). It contains a relatively large proportion of bicyclic aromatic hydrocarbons.	• Hydrodesulfurized light catalytic cracked distillate
68333-27-7	Distillates (petroleum), hydrodesulfurized intermediate catalytic cracked	A complex combination of hydrocarbons obtained by treating intermediate catalytic cracked distillates with hydrogen to convert organic sulfur to hydrogen sulfide which is removed. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>11</sub> through C <sub>30</sub> and boiling in the range of approximately 205°C to 450°C (401°F to 842°F). It contains a relatively large proportion of tricyclic aromatic hydrocarbons.	• Hydrodesulfurized intermediate catalytic cracked distillate
68410-05-9	Distillates (petroleum), straight-run light	A complex combination of hydrocarbons produced by the distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>2</sub> through C <sub>7</sub> and boiling in the range of approximately -88°C to 99°C (-127°F to 210°F).	
68410-71-9	Raffinates (petroleum), catalytic reformer ethylene glycol-water countercurrent exts.	A complex combination of hydrocarbons obtained as the raffinate from the UDEX extraction process on the catalytic reformer stream. It consists of saturated hydrocarbons having carbon numbers predominantly in the range of C <sub>6</sub> through C <sub>9</sub> .	<ul style="list-style-type: none"> <li>• Catalytic reformat udex raffinate</li> <li>• Raffinates, catalytic reformer ethylene glycol-water counter current exts.</li> </ul>

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CAS RN <sup>1</sup>	Chemical Name	Description	Other Names
68410-96-8	Distillates (petroleum), hydrotreated middle, intermediate boiling	A complex combination of hydrocarbons obtained by the distillation of products from a middle distillate hydrotreating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>5</sub> through C <sub>10</sub> and boiling in the range of approximately 127°C to 188°C (260°F to 370°F).	<ul style="list-style-type: none"> <li>• Middle distillate hydrotreater gasoline</li> </ul>
68410-97-9	Distillates (petroleum), light distillate hydrotreating process, low-boiling	A complex combination of hydrocarbons obtained by the distillation of products from the light distillate hydrotreating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>6</sub> through C <sub>9</sub> and boiling in the range of approximately 3°C to 194°C (37°F to 382°F).	<ul style="list-style-type: none"> <li>• Light distillate hydrotreater stabilizer overhead liquid</li> </ul>
68476-26-6	Fuel gases	A combination of light gases. It consists predominantly of hydrogen and/or low molecular weight hydrocarbons.	<ul style="list-style-type: none"> <li>• Fuel gas</li> <li>• Fuel gas, manufactured</li> <li>• Fuels, gas</li> <li>• Gases, fuel</li> <li>• Generator fuel gases</li> <li>• Generator gas</li> <li>• Manufactured gas</li> <li>• Manufd. fuel gases</li> <li>• Methane number</li> <li>• Process off-gas (Petroleum)</li> <li>• UN1071</li> <li>• Wobbe index</li> </ul>
68476-32-4	Fuel oil, residues-straight-run gas oils, high-sulfur		<ul style="list-style-type: none"> <li>• High sulfur fuel oil</li> </ul>
68476-46-0	Hydrocarbons, C <sub>3-11</sub> , catalytic cracker distillates	A complex combination of hydrocarbons produced by the distillations of products from a catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>3</sub> through C <sub>11</sub> and boiling in a range approximately up to 204°C(400°F).	<ul style="list-style-type: none"> <li>• TCC raw gasoline (petroleum)</li> </ul>
68476-49-3	Hydrocarbons, C <sub>2-4</sub> , C <sub>3</sub> -rich		<ul style="list-style-type: none"> <li>• Hydrocarbons, C2-4, C3-rich, caustic-washed</li> <li>• Propane, propylene after caustic wash</li> <li>• Propane, propylene mix</li> </ul>
68477-31-6	Distillates (petroleum), catalytic reformer fractionator residue, low-boiling	The complex combination of hydrocarbons from the distillation of catalytic reformer fractionator residue. It boils approximately below 288°C (550°F).	<ul style="list-style-type: none"> <li>• Aromatic solvent (petroleum)</li> <li>• Steam-cracked petroleum distillates</li> </ul>
68477-33-8	Gases (petroleum), C <sub>3-4</sub> , isobutane-rich	A complex combination of hydrocarbons from the distillation of saturated and unsaturated hydrocarbons usually ranging in carbon numbers from C <sub>3</sub> through C <sub>6</sub> , predominantly butane and isobutane. It consists of saturated and unsaturated hydrocarbons having carbon numbers in the range of C <sub>3</sub> through C <sub>4</sub> , predominantly isobutane.	<ul style="list-style-type: none"> <li>• Isobutane extract</li> </ul>
68477-69-0	Gases (petroleum), butane splitter overheads	A complex combination of hydrocarbons obtained from the distillation of the butane stream. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C <sub>3</sub> through C <sub>4</sub> .	<ul style="list-style-type: none"> <li>• Butane splitter overhead</li> </ul>

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68477-71-4	Gases (petroleum), catalytic-cracked gas oil depropanizer bottoms, C <sub>4</sub> -rich acid-free	A complex combination of hydrocarbons obtained from fractionation of catalytic cracked gas oil hydrocarbon stream and treated to remove hydrogen sulfide and other acidic components. It consists of hydrocarbons having carbon numbers in the range of C <sub>3</sub> through C <sub>5</sub> , predominantly C <sub>4</sub> .	• Catalytic cracking depropanizer bottoms butane, butylene olefin, hydrocarbon stream
68477-72-5	Gases (petroleum), catalytic-cracked naphtha debutanizer bottoms, C <sub>3,5</sub> -rich	A complex combination of hydrocarbons obtained from the stabilization of catalytic cracked naphtha. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C <sub>3</sub> through C <sub>5</sub> .	• No. 5 catalytic cracking debutanizer bottoms butane, butylene olefin, hydrocarbon stream
68477-73-6	Gases (petroleum), catalytic cracked naphtha depropanizer overhead, C <sub>3</sub> -rich acid-free	A complex combination of hydrocarbons obtained from fractionation of catalytic cracked hydrocarbons and treated to remove acidic impurities. It consists of hydrocarbons having carbon numbers in the range of C <sub>2</sub> through C <sub>4</sub> , predominantly C <sub>3</sub> .	• No. 5 catalytic cracking depropanizer overhead propane, propylene olefin, hydrocarbon stream
68477-75-8	Gases (petroleum), catalytic cracker, C <sub>1,5</sub> -rich	A complex combination of hydrocarbons produced by the distillation of products from a catalytic cracking process. It consists of aliphatic hydrocarbons having carbon numbers in the range of C <sub>1</sub> through C <sub>6</sub> , predominantly C <sub>1</sub> through C <sub>5</sub> .	• TCC wet gas
68477-76-9	Gases (petroleum), catalytic polymd. naphtha stabilizer overhead, C <sub>2,4</sub> -rich	A complex combination of hydrocarbons obtained from the fractionation stabilization of catalytic polymerized naphtha. It consists of aliphatic hydrocarbons having carbon numbers in the range of C <sub>2</sub> through C <sub>6</sub> , predominantly C <sub>2</sub> through C <sub>4</sub> .	• Catalytic polymerization stabilizer overhead, hydrocarbon stream
68477-77-0	Gases (petroleum), catalytic reformed naphtha stripper overheads	A complex combination of hydrocarbons obtained from the stabilization of catalytic reformed naphtha. Its consists of hydrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C <sub>1</sub> through C <sub>4</sub> .	• Catalytic reforming stripper overhead gas, hydrocarbon stream
68477-85-0	Gases (petroleum), C <sub>4</sub> -rich	A complex combination of hydrocarbons produced by distillation of products from a catalytic fractionation process. It consists of aliphatic hydrocarbons having carbon numbers in the range of C <sub>3</sub> through C <sub>5</sub> , predominantly C <sub>4</sub> .	• Butane, butylene mix
68477-86-1	Gases (petroleum), deethanizer overheads	A complex combination of hydrocarbons produced from distillation of the gas and gasoline fractions from the catalytic cracking process. It contains predominantly ethane and ethylene.	
68477-87-2	Gases (petroleum), deisobutanizer tower overheads	A complex combination of hydrocarbons produced by the atmospheric distillation of a butane-butylene stream. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C <sub>3</sub> through C <sub>4</sub> .	• Deisobutanizer tower overhead
68477-89-4	Distillates (petroleum), depentanizer overheads	A complex combination of hydrocarbons obtained from a catalytic cracked gas stream. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C <sub>4</sub> through C <sub>6</sub> .	• Catalytic-cracked gas, depentanizer overhead C4-6 • Gases (petroleum), depentanizer overheads • Pentane stream
68477-93-0	Gases (petroleum), gas concn. reabsorber distn.	A complex combination of hydrocarbons produced by distillation of products from combined gas streams in a gas concentration reabsorber. It consists predominantly of hydrogen, carbon monoxide, carbon dioxide, nitrogen, hydrogen sulfide and hydrocarbons having carbon numbers in the range of C <sub>1</sub> through C <sub>3</sub> .	• Gas concentration reabsorber off gas
68477-97-4	Gases (petroleum), hydrogen-rich	A complex combination separated as a gas from hydrocarbon gases by chilling. It consists primarily of hydrogen with various small amounts of carbon monoxide, nitrogen, methane, and C <sub>2</sub>	• H2 Rich gas

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CAS RN <sup>1</sup>	Chemical Name	Description	Other Names
		hydrocarbons.	
68478-00-2	Gases (petroleum), recycle, hydrogen-rich	A complex combination obtained from recycled reactor gases. It consists primarily of hydrogen with various small amounts of carbon monoxide, carbon dioxide, nitrogen, hydrogen sulfide, and saturated aliphatic hydrocarbons having carbon numbers in the range of C <sub>1</sub> through C <sub>5</sub> .	
68478-01-3	Gases (petroleum), reformer make-up, hydrogen-rich	A complex combination obtained from the reformers. It consists primarily of hydrogen with various small amounts of carbon monoxide and aliphatic hydrocarbons having carbon numbers predominantly in the range of C <sub>1</sub> through C <sub>5</sub> .	<ul style="list-style-type: none"> <li>• Blend oil</li> <li>• Reformate gas, hydrogen rich make-up C1-5</li> </ul>
68478-05-7	Gases (petroleum), thermal cracking distn.	A complex combination produced by distillation of products from a thermal cracking process. It consists of hydrogen, hydrogen sulfide, carbon monoxide, carbon dioxide and hydrocarbons having carbon numbers predominantly in the range of C <sub>1</sub> through C <sub>6</sub> .	<ul style="list-style-type: none"> <li>• Coker wet gas</li> </ul>
68478-12-6	Residues (petroleum), butane splitter bottoms	A complex residuum from the distillation of butane stream. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C <sub>4</sub> through C <sub>6</sub> .	<ul style="list-style-type: none"> <li>• Butane splitter bottoms</li> </ul>
68478-17-1	Residues (petroleum), heavy coker gas oil and vacuum gas oil	A complex combination of hydrocarbons produced as the residual fraction from the distillation of heavy coker gas oil and vacuum gas oil. It predominantly consists of hydrocarbons having carbon numbers predominantly greater than C <sub>13</sub> and boiling above approximately 230°C (446°F).	<ul style="list-style-type: none"> <li>• Feed preparation bottoms (petroleum)</li> </ul>
68478-25-1	Tail gas (petroleum), catalytic cracker refractionation absorber	A complex combination of hydrocarbons obtained from refractionation of products from a catalytic cracking process. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C <sub>1</sub> through C <sub>3</sub> .	<ul style="list-style-type: none"> <li>• Absorber tail gas</li> </ul>
68478-29-5	Tail gas (petroleum), cracked distillate hydrotreater separator	A complex combination of hydrocarbons obtained by treating cracked distillates with hydrogen in the presence of a catalyst. It consists of hydrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C <sub>1</sub> through C <sub>5</sub> .	<ul style="list-style-type: none"> <li>• Hydrotreater separator tail gas, hydrocarbon stream</li> </ul>
68478-32-0	Tail gas (petroleum), saturate gas plant mixed stream, C <sub>4</sub> -rich	A complex combination of hydrocarbons obtained from the fractionation stabilization of straight-run naphtha, distillation tail gas and catalytic reformed naphtha stabilizer tail gas. It consists of hydrocarbons having carbon numbers in the range of C <sub>3</sub> through C <sub>6</sub> , predominantly butane and isobutane.	<ul style="list-style-type: none"> <li>• Saturate gas plant mixed butanes, hydrocarbon stream</li> </ul>
68478-34-2	Tail gas (petroleum), vacuum residues thermal cracker	A complex combination of hydrocarbons obtained from the thermal cracking of vacuum residues. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>1</sub> through C <sub>5</sub> .	<ul style="list-style-type: none"> <li>• Tail gas from delayed coking</li> </ul>
68512-91-4	Hydrocarbons, C <sub>3</sub> - <sub>4</sub> -rich, petroleum distillates	A complex combination of hydrocarbons produced by distillation and condensation of crude oil. It consists of hydrocarbons having carbon numbers in the range of C <sub>3</sub> through C <sub>5</sub> , predominantly C <sub>3</sub> through C <sub>4</sub> .	<ul style="list-style-type: none"> <li>• Crude compressor condensate (petroleum)</li> </ul>
68513-02-0	Naphtha (petroleum), full-range coker	A complex combination of hydrocarbons produced by the distillation of products from a fluid coker. It consists predominantly of unsaturated hydrocarbons having carbon numbers predominantly in the range of C <sub>4</sub> through C <sub>15</sub> and boiling in the range of	<ul style="list-style-type: none"> <li>• Full range coker naphtha (petroleum)</li> </ul>

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		approximately 43°C to 250°C (109°F-482°F).	
68513-16-6	Gases (petroleum), hydrocracking depropanizer off, hydrocarbon-rich	A complex combination of hydrocarbon produced by the distillation of products from a hydrocracking process. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C <sub>1</sub> through C <sub>4</sub> . It may also contain small amounts of hydrogen and hydrogen sulfide.	<ul style="list-style-type: none"> <li>Hydrocracking depropanizer off gas (petroleum)</li> </ul>
68513-17-7	Gases (petroleum), light straight-run naphtha stabilizer off	A complex combination of hydrocarbons obtained by the stabilization of light straight-run naphtha. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C <sub>2</sub> through C <sub>6</sub> .	<ul style="list-style-type: none"> <li>Light straight run stabilizer off-gas</li> </ul>
68513-18-8	Gases (petroleum), reformer effluent high-pressure flash drum off	A complex combination produced by the high-pressure flashing of the effluent from the reforming reactor. It consists primarily of hydrogen with various small amounts of methane, ethane, and propane.	<ul style="list-style-type: none"> <li>High pressure flash drum off-gas</li> </ul>
68514-31-8	Hydrocarbons, C <sub>1-4</sub>	A complex combination of hydrocarbons produced by thermal cracking and absorber operations and by distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>1</sub> through C <sub>4</sub> and boiling in the range of approximately minus 164°C to minus 0.5°C (-263°F to 31°F).	<ul style="list-style-type: none"> <li>Aliph. hydrocarbons, C1-4</li> <li>C1-4 hydrocarbons</li> <li>Mixed (C1-C4) gases from polymerization process</li> <li>Mixed (C1-C4) hydrocarbons from absorber</li> <li>Mixed (C1-C4) hydrocarbons from crude distillation</li> <li>Mixed (C1-C4) hydrocarbons from thermal cracking</li> </ul>
68514-36-3	Hydrocarbons, C <sub>1-4</sub> , sweetened	A complex combination of hydrocarbons obtained by subjecting hydrocarbon gases to a sweetening process to convert mercaptans or to remove acidic impurities. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>1</sub> through C <sub>4</sub> and boiling in the range of approximately -164°C to -0.5°C (-263°F to 31°F)	<ul style="list-style-type: none"> <li>Gas, refinery mixed, sweetened C1-4</li> <li>Sweetened mixed (C1-C4) gases</li> </ul>
68514-79-4	Petroleum products, hydrofiner-powerformer reformates	The complex combination of hydrocarbons obtained in a hydrofiner-powerformer process and boiling in a range of approximately 27°C to 210°C (80°F to 410°F).	<ul style="list-style-type: none"> <li>Reformate</li> </ul>
68527-16-2	Hydrocarbons, C <sub>1-3</sub>	A complex combination of hydrocarbons having carbon numbers predominantly in the range of C <sub>1</sub> through C <sub>3</sub> and boiling in the range of approximately minus 164°C to minus 42°C (-263°F to -44°F).	<ul style="list-style-type: none"> <li>Aliph. hydrocarbons, C1-3</li> <li>C1-3 hydrocarbons</li> <li>Mixed (C1-C3) gases from debutanizer</li> </ul>
68527-19-5	Hydrocarbons, C <sub>1-4</sub> , debutanizer fraction		<ul style="list-style-type: none"> <li>Butane (Natural Gas)</li> <li>Butane, butylene fraction</li> <li>Butane-butylene from catalytic cracking (petroleum)</li> <li>C4-Fraction</li> <li>Mixed (C4) hydrocarbons</li> <li>Mixed butene stream</li> <li>Mixed butylene stream</li> </ul>

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68527-27-5	Naphtha (petroleum), full-range alkylate, butane-contg.	A complex combination of hydrocarbons produced by the distillation of the reaction products of isobutane with monoolefinic hydrocarbons usually ranging in carbon numbers from C <sub>3</sub> through C <sub>5</sub> . It consists or predominantly branched chain saturated hydrocarbons having carbon numbers predominantly in the range of C <sub>7</sub> through C <sub>12</sub> with some butanes and boiling in the range of approximately 35°C to 220°C (95°F to 428°F).	• Full range alkylate naphtha with butanes (petroleum)
68602-83-5	Gases (petroleum), C <sub>1-5</sub> , wet	A complex combination of hydrocarbons produced by the distillation of crude oil and/or the cracking of tower gas oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>1</sub> through C <sub>5</sub> .	• Refinery wet gases
68602-84-6	Gases (petroleum), secondary absorber off, fluidized catalytic cracker overheads fractionater	A complex combination produced by the fractionation of the overhead products from the catalytic cracking process in the fluidized catalytic cracker. It consists of hydrogen, nitrogen, and hydrocarbons having carbon numbers predominantly in the range of C <sub>1</sub> through C <sub>3</sub> .	• Secondary absorber off-gas
68606-11-1	Gasoline, straight-run, topping-plant	A complex combination of hydrocarbons produced from the topping plant by the distillation of crude oil. It boils in the range of approximately 36°C to 193°C (97°F to 380°F).	• Raw, straight run gasoline
68606-27-9	Gases (petroleum), alkylation feed	A complex combination of hydrocarbons produced by the catalytic cracking of gas oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>3</sub> through C <sub>4</sub> .	• Alkylation unit feed
68607-11-4	Petroleum products, refinery gases	A complex combination which consists primarily of hydrogen with various small amounts of methane, ethane, and propane.	• Petroleum gases, refinery • Petroleum products, refinery gas • Petroleum refinery gases • Refinery gas • Refinery gas petroleum products • Refinery gases petroleum products
68783-08-4	Gas oils (petroleum), heavy atmospheric	A complex combination of hydrocarbons obtained by the distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>7</sub> through C <sub>35</sub> and boiling in the range of approximately 121°C to 510°C (250°F to 950°F).	• Heavy atmospheric gas oil (petroleum)
68783-12-0	Naphtha (petroleum), unsweetened	A complex combination of hydrocarbons produced from the distillation of naphtha streams from various refinery processes. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>5</sub> through C <sub>12</sub> and boiling in the range of approximately 0°C to 230°C (32°F to 446°F).	• Unsweetened naphtha (petroleum)
68814-67-5	Gases (petroleum), refinery	A complex combination obtained from various petroleum refining operations. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C <sub>1</sub> through C <sub>3</sub> .	• Refinery produced gas (petroleum)
68911-58-0	Gases (petroleum), hydrotreated sour kerosine depentanizer stabilizer off	The complex combination obtained from the depentanizer stabilization of hydrotreated kerosine. It consists primarily of hydrogen, methane, ethane, and propane with various small amounts of nitrogen, hydrogen sulfide, carbon monoxide and hydrocarbons having carbon numbers predominantly in the range of C <sub>4</sub> through C <sub>5</sub> .	• Stabilizer off gas
68918-99-0	Gases (petroleum), crude oil fractionation off	A complex combination of hydrocarbons produced by the fractionation of crude oil. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of	• Crude unit off-gas

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		C <sub>1</sub> through C <sub>5</sub> .	
68919-02-8	Gases (petroleum), fluidized catalytic cracker fractionation off	A complex combination produced by the fractionation of the overhead product of the fluidized catalytic cracking process. It consists of hydrogen, hydrogen sulfide, nitrogen, and hydrocarbons having carbon numbers predominantly in the range of C <sub>1</sub> through C <sub>5</sub> .	• FCC off-gas
68919-04-0	Gases (petroleum), heavy distillate hydrotreater desulfurization stripper off	A complex combination stripped from the liquid product of the heavy distillate hydrotreater desulfurization process. It consists of hydrogen, hydrogen sulfide, and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C <sub>1</sub> through C <sub>5</sub> .	• Heavy distillate hydrotreater stripper off-gas
68919-08-4	Gases (petroleum), preflash tower off, crude distn.	A complex combination produced from the first tower used in the distillation of crude oil. It consists of nitrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C <sub>1</sub> through C <sub>5</sub> .	• Preflash tower off-gas
68919-10-8	Gases (petroleum), straight-run stabilizer off	A complex combination of hydrocarbons obtained from the fractionation of the liquid from the first tower used in the distillation of crude oil. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C <sub>1</sub> through C <sub>4</sub> .	• Straight run stabilizer off-gas
68919-37-9	Naphtha (petroleum), full-range reformed	A complex combination of hydrocarbons produced by the distillation of the products from a catalytic reforming process. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>5</sub> through C <sub>12</sub> and boiling in the range of approximately 35°C to 230°C (95°F to 446°F).	• Full range reformed naphtha (Petroleum) • Naphtha, full-range reformed
68919-39-1	Natural gas condensates	A complex combination of hydrocarbons separated and/or condensed from natural gas during transportation and collected at the wellhead and/or from the production, gathering, transmission, and distribution pipelines in deeps, scrubbers, etc. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C <sub>2</sub> through C <sub>8</sub> .	• Condensate (natural gas) • Natural gas fluids • Natural gas liquids • Natural gas, condensate of
68952-79-4	Tail gas (petroleum), catalytic hydrodesulfurized naphtha separator	A complex combination of hydrocarbons obtained from the hydrodesulfurization of naphtha. It consists of hydrogen, methane, ethane, and propane.	• Catalytic hydrodesulfurizer separator tail gas, hydrocarbon stream
68955-27-1	Distillates (petroleum), petroleum residues vacuum	A complex combination of hydrocarbons produced by the vacuum distillation of the residuum from the atmospheric distillation of crude oil.	• Vacuum slop wax side stream
68955-35-1	Naphtha (petroleum), catalytic reformed	A complex combination of hydrocarbons produced by the distillation of products from a catalytic reforming process. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>4</sub> through C <sub>12</sub> and boiling in the range of approximately 32°C to 211°C (90°F to 430°F). It contains a relatively large proportion of aromatic and branched chain hydrocarbons. This stream may contain 10 vol. % or more benzene.	• Catalytic reformed naphtha (petroleum)

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70592-76-6	Distillates (petroleum), intermediate vacuum	A complex combination of hydrocarbons produced by the vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>14</sub> through C <sub>42</sub> and boiling in the range of approximately 250°C to 545°C (482°F to 1013°F). This stream is likely to contain 5 wt.% or more of 4- to 6-membered condensed ring aromatic hydrocarbons.	• Distillates (petroleum) intermediate vacuum
70592-77-7	Distillates (petroleum), light vacuum	A complex combination of hydrocarbons produced by the vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>11</sub> through C <sub>35</sub> and boiling in the range of approximately 250°C to 545°C (482°F to 1013°F).	
70592-78-8	Distillates (petroleum), vacuum	A complex combination of hydrocarbons produced by the vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C <sub>15</sub> through C <sub>50</sub> and boiling in the range of approximately 270°C to 600°C (518°F to 1112°F). This stream is likely to contain 5 wt.% or more of 4- to 6-membered condensed ring aromatic hydrocarbons.	• Heavy vacuum distillate (petroleum)
101316-57-8	Distillates (petroleum), hydrodesulfurized full-range middle	A complex combination of hydrocarbons obtained by treating a petroleum stock with hydrogen. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C <sub>9</sub> through C <sub>25</sub> and boiling in the range of approximately 150°C to 400°C (302°F to 752°F).	
101795-01-1	Naphtha (petroleum), sweetened light	A complex combination of hydrocarbons obtained by subjecting a petroleum naphtha to a sweetening process to convert mercaptans or to remove acidic impurities. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C <sub>5</sub> through C <sub>8</sub> and boiling in the range of approximately 20°C to 130°C (68°F to 266°F).	

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