

MONTHLY OIL DATA SERVICE

DATABASE DOCUMENTATION

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1. DATABASE STRUCTURE

The International Energy Agency (IEA) collects and analyses monthly oil data. The main source of the data is the Monthly Oil Survey (MOS). MOS is a monthly survey among the OECD countries. The national administrations submit data to the IEA Secretariat. Data are collected on an M-2 basis, the so-called MOS month. The questionnaire can be seen here: http://www.iea.org/stats/questionnaire/MOS_Oil.xls. Data are validated by the IEA Secretariat and published every month (see publishing schedule here: <http://mods.iea.org/schedule.htm>). Supply; Summary and Field by Field and Demand files include 6 to 18 months of forecasts.

For some countries stock data in the Stock file are available on an M-1 basis (the month following the MOS month) based on preliminary information.

For non-OECD countries a number of various sources are used.

The database *Monthly Oil Data Service (MODS)* includes monthly data for supply, demand, balances, stocks, trade and field-by-field supply. The database includes the following three packages:

- Supply, Demand, Balances and Stocks.
- Trade.
- Field by Field Production.

Data are available on <http://mods.iea.org/> as Beyond 2020 (B2020) files or as text files. B2020 is a browser to view multi-dimensional datasets (<http://mods.iea.org/software/software.htm>). Text files can easily be imported into database software.

Supply, Demand, Balances and Stocks

B2020 file	Text file	Content
SUPPLY.IVT	SUPPLY.TXT	Supply Supply data by type of primary oil product for most of the world (KBD). Monthly, quarterly and annual data from 2005 onwards. Includes forecasts for the remainder of current calendar year past the MOS month. Historic data from 1984 to 2004 with same granularity: HSUPPLY.IVT and HSUPPLY.TXT.

B2020 file	Text file	Content
CRUDBAL.IVT	CRUDEDAT.TXT	Balance: Crude oil Product balances for primary oil products for OECD countries (all balance items in thousand metric tons and some flows in thousand barrels). Monthly data from 2005 onwards. Historic data from 1984 to 2004 with same granularity: HCRUDBAL.IVT and HCRUDBAL.TXT.
PRODBAL.IVT	PRODDAT.TXT	Balance: Product Product balances for secondary oil products for OECD countries (all balance items in thousand metric tons and some flows in thousand barrels). Monthly data from 2005 onwards. Historic data from 1984 to 2004 with same granularity: HPRODBAL.IVT and HPRODBAL.TXT.
PRODSP.IVT	SPLITDAT.TXT	Balance: Sub product Product balances for secondary sub products for OECD countries (thousand metric tons). Monthly data from 2005 onwards. Historic data from 2000 to 2004 with same granularity: HPRODSP.IVT and SPLITDAT.TXT.
OECDDEM.IVT	OECDDE.TXT	OECD Demand Demand for oil products in OECD countries (KBD). Monthly, quarterly and annual data from 2005 onwards. Includes forecasts for 12-18 months past the MOS month. Historic data from 1984 to 2004 with same granularity: HOECDDEM.IVT and HOECDDEM.TXT.
NOECDDEM.IVT	NOECDDE.TXT	NON-OECD Demand Demand for oil products in non-OECD countries (KBD). Quarterly and annual data from 2005 onwards. Includes forecasts for 4-7 quarters. Timeliness and detail are highly variable. Historic data from 1984 to 2004 with same granularity from 1991 onward: HNOECDDEM.IVT and HNOECDDEM.TXT
STOCKS.IVT	STOCKDAT.TXT	Closing stocks, thousand barrels Closing stocks of six oil products for OECD countries (kbbbl). Monthly data from 2005 up to MOS month with forecast for the following month. Historic data from 1984 to 2004 with same granularity: HSTOCKS.IVT and HSTOCK.TXT.
SUMMARY.IVT	SUMMARY.TXT	Summary Table Supply, demand and stocks data for OECD and non-OECD countries (KBD). Quarterly data back to 1986.

Trade

B2020 file	Text file	Content
IMPORTS.IVT	IMPORDAT.TXT	Imports Imports data by trading country for primary and secondary oil products for OECD countries (kt). Monthly data from 2005 onwards. Historic data from 1984 to 2004 with same granularity: HIMPORTS.IVT and HIMPORTS.TXT.
EXPORTS.IVT	EXPORDAT.TXT	Exports Exports data by trading country for primary and secondary oil products for OECD countries (kt). Monthly data from 2005 onwards. Historic data from 1984 to 2004 with same granularity: HEXPORTS.IVT and EXPORTS.TXT.

Field by Field Production

CSV file	Excel file	Content
field_by_field.csv	field_by_field.xlsx	Field by Field Production Production by field for OECD and non-OECD countries (KBD). Monthly, quarterly and annual data from 1994 onwards.

The files are organised as indicated in the table below.

File	1st column	2nd column	3rd column	4th column	5 th column	5 th column	5 th column
Field_by_field.csv	FIELD	COUNTRY	PRODUCT	ENVIRONMENT	TIME	FREQUENCY	TIMESTAMP

File	1st column	2nd column	3rd column	4th column
SUPPLY.TXT	Country	Product	Time	
CRUDEDAT.TXT	Country	Product	Balance	Time
PRODDAT.TXT	Product	Country	Balance	Time
SPLITDAT.TXT	Product	Country	Balance	Time
OECDDE.TXT	Country	Product	Time	
NOECDDE.TXT	Country	Time		
STOCKDAT.TXT	Stock	Country	Product	Time
SUMMARY.TXT	Geography	Final	Time	
IMPORDAT.TXT	Country	Product	Import country	Time

File	1st column	2nd column	3rd column	4th column
EXPORDAT.TXT	Country	Product	Export country	Time

2. Supply, Demand, Balances and Stocks Package

The Supply, Demand, Balances and Stocks package consists of seven files:

- Supply
- Balance: Crude oil
- Balance: Product
- Balance: Sub product
- Demand
- Stocks
- World Oil Supply and Demand
- All of the above except Balance: Sub product

In the following is a more detailed description of the content of each of the seven files.

Supply (SUPPLY.IVT)

Structure

This data set contains data on supply of crude oil, condensates, natural gas liquids and nonconventional oils for OECD and non-OECD countries in thousand barrels per day from 2005 onwards.

Historical data from 1984 to 2004 are available with the same dimensions in HSUPPLY.IVT.

Sources

The Monthly Oil Survey carried out by the IEA is the main source for OECD countries. Non-OECD supply data is provided by a variety of sources, including governments and companies. The timeliness of the data varies.

Dimensions

Time

The data set contains data from monthly, quarterly and annual data from January 2005 to the end of the current or next calendar year (next calendar year is added with the July publication). Data after MOS month are estimated.

Products

Product	Short name	Definition
Crude oil	CRUDE	Crude oil is a mineral oil of natural origin comprising a mixture of hydrocarbons and associated impurities, such as sulphur. It exists in the liquid phase under normal surface temperature and pressure and its physical characteristics (density, viscosity, etc.) are highly variable. This category includes field or lease condensate recovered from associated and non-associated gas where it is commingled with the commercial crude oil stream.
Condensate	COND	Condensates are liquid hydrocarbon mixtures composed of C5 and higher carbon number hydrocarbons, normally recovered from fractionation of gaseous flows at associated and non-associated gas field. They normally have an API between 50° and 85°. They are included in crude for non-OPEC countries, and in NGLS for OPEC countries.
Natural gas liquids	NGLS	NGL are liquid or liquefied hydrocarbons recovered from natural gas in separation facilities or gas processing plants. Natural gas liquids include ethane, propane, butane (normal and iso-). For OPEC countries, condensates are included with NGL rather than crude oil.
Nonconventional oils	NONCONV	This category includes synthetic crude oil from tar sands, oil shale, etc., liquids from coal liquefaction, liquids from gas to liquids processes, hydrogen and emulsified oils (e.g. orimulsion), refinery additives and MTBE.
Total	TOTAL	The sum of crude oil, NGLs and non-conventional oils.

Countries

Country	Short name	Definition
Australia	AUSTRALIA	
Austria	AUSTRIA	
Canada	CANADA	
Chile	CHILE	
Czech Republic	CZECHREPUB	
Denmark	DENMARK	
Estonia	ESTONIA	
France	FRANCE	
Germany	GERMANY	
Germany Offshore	GERMOFF	Discontinued
Germany Onshore	GERMON	Discontinued

Country	Short name	Definition
Greece	GREECE	
Hungary	HUNGARY	
Israel	ISRAEL	
Italy	ITALY	
Korea	KOREA	
Japan	JAPAN	
Mexico	MEXICO	
Netherlands	NETHLAND	
Netherlands Offshore	NETHOFF	Discontinued
Netherlands Onshore	NETHON	Discontinued
New Zealand	NZ	
Norway	NORWAY	
Poland	POLAND	
Portugal	PORTUGAL	
Slovakia	SLOVAKIA	
Slovenia	SLOVENIA	
Spain	SPAIN	
Sweden	SWEDEN	
Turkey	TURKEY	
United Kingdom	UK	
UK Offshore	UKOFF	Discontinued
UK Onshore	UKON	Discontinued
North Sea	NORTHSEA	North Sea Includes Denmark, Norway and the UK.
OECD Europe ex North Sea	OEEUREXNS	
United States	USA	
Alaska	ALASKA	Discontinued
Lower 48	LOWER48	Discontinued
OECD Europe	OECDEUR	OECD Europe includes Austria, Czech Republic, Denmark, Estonia, France, Germany, Greece, Hungary, Italy, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Turkey, and the UK.
OECD Americas	OECDAME	OECD Americas includes Canada, Chile, Mexico and the United States.

Country	Short name	Definition
OECD Asia Oceania	OECD AOC	OECD Asia Oceania includes Australia, Israel, Japan, Korea and New Zealand.
Albania	ALBANIA	
Bulgaria	BULGARIA	
Croatia	CROATIA	
Romania	ROMANIA	
Serbia and Montenegro	SERBIAMONT	
Former Yugoslavia	FORMERYUGO	
Azerbaijan	AZERBAIJAN	
Belarus	BELARUS	
Georgia	GEORGIA	
Kazakhstan	KAZAKHSTAN	
Kyrgyzstan	KYRGYZSTAN	
Russia	RUSSIA	
Tajikistan	TAJIKISTAN	
Turkmenistan	TURKMENIST	
Ukraine	UKRAINE	
Uzbekistan	UZBEKISTAN	
Non-Russian republics of former USSR	NONRUSSIAN	Non-Russian republics of former USSR includes Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.
Benin	BENIN	
Cameroon	CAMEROON	
Chad	CHAD	
Democratic Republic of Congo	CONGOREP	
Egypt	EGYPT	
Ghana	GHANA	
Ivory Coast	IVORYCOAST	
Mauritania	MAURITANIA	
Morocco	MOROCCO	
South Africa	SOUTHAFRIC	
South Sudan	SOUTHSUDAN	
Sudan	SUDAN	

Country	Short name	Definition
Tunisia	TUNISIA	
Uganda	UGANDA	
Niger	NIGER	
Non-OPEC Africa	NOPAFRICA	Non-OPEC Africa includes Benin, Cameroon, Chad, Democratic Republic of Congo, Egypt, Ghana, Ivory Coast, Mauritania, Morocco, South Africa, South Sudan, Sudan and Tunisia.
Afghanistan	AFGHANIS	
Bangladesh	BANGLADESH	
Brunei	BRUNEI	
East Timor	EASTTIMOR	
India	INDIA	
Indonesia	INDONESIA	Indonesia suspended its OPEC membership from 2009 to 2015 and from December 2016 onwards and it is excluded from the OPEC Historical Composition total for these periods.
Malaysia	MALAYSIA	
Mongolia	MONGOLIA	
Myanmar	MYANMAR	
Nepal	NEPAL	
Pakistan	PAKISTAN	
Papua New Guinea	PAPUANEWGU	
China	CHINA	
Chinese Taipei	TAIPEI	
Philippines	PHILIPPINE	
Thailand	THAILAND	
Viet Nam	VIETNAM	
Non-OPEC Asia	NOPASIA	Non-OPEC Asia includes Afghanistan, Bangladesh, Brunei, East Timor, India, Indonesia, Malaysia, Mongolia, Myanmar, Nepal, Pakistan, Papua New Guinea, China, Chinese Taipei, Philippines, Thailand and Vietnam.
Non-OPEC Asia ex China	NOASIEXCH	
Argentina	ARGENTINA	
Barbados	BARBADOS	
Bolivia	BOLIVIA	
Brazil	BRAZIL	
Colombia	COLOMBIA	

Country	Short name	Definition
Cuba	CUBA	
Ecuador	ECUADOR	Ecuador was a member of OPEC through 1992 and from December 2007 to December 2019. It is included within secondary OPEC Historical Composition totals for these periods. Ecuador suspended its OPEC membership from January 2020 onward and is excluded from OPEC Historical Composition total for this period.
Guatemala	GUATEMALA	
Peru	PERU	
Surinam	SURINAM	
Trinidad and Tobago	TRINIDAD	
Non-OPEC Americas	NOPLATAM	Non-OPEC Latin America includes Argentina, Barbados, Bolivia, Brazil, Colombia, Cuba, Ecuador, Guatemala, Peru, Surinam and Trinidad and Tobago.
Bahrain	BAHRAIN	
Oman	OMAN	
Syria	SYRIA	
Yemen	YEMEN	
Non-OPEC Middle East	NOPMIDEAST	Non-OPEC Middle East includes Bahrain, Oman, Qatar, Syria and Yemen.
Non-OPEC Non-OECD Total	NOPNOECD	
Non-OPEC (including processing gains)	NONOPECCUR	Non-OPEC primary total based on its composition from January 2009, excluding all current OPEC members back through the historical time series and for the forecast.
Non-OPEC Historical Composition	NONOPEC	Non-OPEC Historical Composition secondary total including all countries not within OPEC membership at the prevailing time in history. Includes Ecuador between 1993 and November 2007 inclusive and from January 2020 onwards, Gabon from 1995 through June 2016, Angola prior to 2007, Equatorial Guinea prior to June 2017, Congo prior to July 2018, excludes Indonesia from 2009 to 2015 and from January through November 2016, Qatar production is excluded through 2018.
European Union 28	EU28	
European Union 27	EU27	
European Union 15	EU15	
Algeria	ALGERIA	
Angola/Cabinda	ANGOLA	Angola became a member of OPEC from 2007 onwards and is included within secondary OPEC Historical Composition totals for this period.

Country	Short name	Definition
Congo	CONGO	Congo became a member of OPEC from June 2018 onwards and is included within secondary OPEC Historical Composition totals for this period.
Gabon	GABON	Gabon was a member of OPEC through 1994 and again from July 2016. It is included within the OPEC Historical Composition totals for these periods.
Equatorial Guinea	EQUATORIAL	Equatorial Guinea became a member of OPEC from June 2017 onwards and is included within secondary OPEC Historical Composition totals for this period.
Iraq	IRAQ	
Iran	IRAN	
Kuwait	KUWAIT	
Libya	LIBYA	
Neutral Zone	NEUTRALZON	
Nigeria	NIGERIA	
Qatar	QATAR	Qatar suspended its OPEC membership from January 2019 onward and is excluded from OPEC Historical Composition total for this period.
Saudi Arabia	SAUDIARABI	
United Arab Emirates	UAE	
Abudhabi	ABUDHABI	Discontinued
Dubai	DUBAI	Discontinued
Sharjah/Ras Al Khaimah	SHARJRAS	Discontinued
Venezuela	VENEZUELA	
OPEC	OPECCUR	OPEC primary total based on its current composition, namely Angola, Algeria, Congo, Equatorial Guinea , Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, the UAE and Venezuela.
OPEC Historical Composition	OPEC	OPEC Historical Composition including OPECs members at any point in time. It includes Algeria, Iraq, Iran, Kuwait, Libya, Neutral Zone, Nigeria, Saudi Arabia, the United Arab Emirates and Venezuela. Also, Ecuador production is included through 1992 and from December 2007 to December 2019, Gabon production included through 1994 and from July 2016, Angola from 2007 onwards, Equatorial Guinea from June 2017 onwards, Congo from July 2018 onwards, Indonesia production is excluded from 2009 to 2015 and from December 2016 onwards and Qatar production is included through 2018.

Country	Short name	Definition
Non-OECD Europe	NONOECDEUR	Non-OECD Europe includes Albania, Bulgaria, Former Yugoslavia (Croatia and Federal Republic of Yugoslavia, excluding Slovenia) and Romania.
Former USSR excluding Estonia	FORMERUSSR	Former USSR includes Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.
Africa	AFRICA	Africa includes Algeria, Angola/Cabinda, Benin, Cameroon, Chad, Congo, Democratic Republic of Congo, Egypt, Equatorial Guinea, Gabon, Ghana, Ivory Coast, Libya, Nigeria, Mauritania, Morocco, South Africa, South Sudan, Sudan and Tunisia.
Asia	ASIACHINA	Asia includes Afghanistan, Bangladesh, Brunei, East Timor, India, Indonesia, Malaysia, Mongolia, Myanmar, Nepal, Pakistan, Papua New Guinea, China, Chinese Taipei, Philippines, Thailand and Vietnam.
Latin America excluding Mexico and Chile	LATINAMERI	Latin America includes Argentina, Barbados, Bolivia, Brazil, Colombia, Cuba, Ecuador, Guatemala, Peru, Surinam, Trinidad and Tobago and Venezuela.
Middle East	MIDDLEEAST	Middle East includes Bahrain, Oman, Syria, Yemen, Iraq, Iran, Kuwait, Neutral Zone, Qatar, Saudi Arabia and the United Arab Emirates.
Non-OECD Total	NONOECDTOT	
OECD Total	OECDTOT	OECD includes Austria, Czech Republic, Denmark, Estonia, France, Germany, Greece, Hungary, Italy, the Netherlands, Norway, Poland, Slovakia, Slovenia, Spain, Sweden, Turkey, and the UK, Canada, Chile, Mexico and the United States, Australia, Israel, Japan and New Zealand.
Processing Gains	PROCGAINS	
Global Biofuels	GLOBIOTOT	Global Biofuels comprise all world biofuel production including fuel ethanol from the US and Brazil.
Total World Supply	WORLD	

Balance: Crude oil (CRUDBAL.IVT)

Structure

This data set contains monthly balances for crude oil, natural gas liquids, refinery feedstocks, additives/oxygenates and other hydrocarbons for OECD countries in thousand metric tons and thousand barrels for some flows from 2005 onwards.

Historical data from 1984 to 2004 are available with the same dimensions in HCRUDBAL.IVT.

Sources

The source of the data is the Monthly Oil Survey (MOS) carried out by the IEA.

Dimensions**Time**

The data set contains monthly data from January 2005 up to the current MOS month.

Products

Product	Short name	Definition
Crude oil	CRUDEOIL	Crude oil is a mineral oil of natural origin comprising a mixture of hydrocarbons and associated impurities, such as sulphur. It exists in the liquid phase under normal surface temperature and pressure and its physical characteristics (density, viscosity, etc.) are highly variable. This category includes field or lease condensate recovered from associated and non-associated gas where it is commingled with the commercial crude oil stream.
Natural gas liquids	NGL	NGL are liquid or liquefied hydrocarbons recovered from natural gas in separation facilities or gas processing plants. Natural gas liquids include ethane, propane, butane (normal and iso-), (iso) pentane and pentanes plus (sometimes referred to as natural gasoline or plant condensate). For OPEC countries, field condensates are usually included with NGL rather than crude oil.
Refinery feedstocks	REFFEEDS	A refinery feedstock is a processed oil destined for further processing (e.g. straight run fuel oil or vacuum gas oil) excluding blending. With further processing, it will be transformed into one or more components and/or finished products. This definition also covers returns from the petrochemical industry to the refining industry (e.g. pyrolysis gasoline, C4 fractions, gasoil and fuel oil fractions).
Additives/oxygenates	ADDITIVE	Additives and oxygenates are non-hydrocarbon compounds added to or blended with a product to modify fuel properties (octane, cetane, cold properties, etc.) e.g. alcohols (methanol, ethanol), ethers (such as MTBE (methyl tertiary butyl ether), ETBE (ethyl tertiary butyl ether), TAME (tertiary amyl methyl ether) or esters (e.g. rapeseed or dimethylester, etc.). Additives include chemical compounds (such as TML (tetramethyl lead) or TEL (tetraethyl lead)) and detergents.
Other hydrocarbons	NONCRUDE	This category includes synthetic crude oil from tar sands, shale oil, etc., liquids from coal liquefaction, hydrogen and emulsified oils (e.g. orimulsion).
Crude + NGL + Feedstocks	CRNGFEED	Sum of Crude oil, NGL, Refinery feedstocks, Additives/oxygenates and Other hydrocarbons.

Balance

Balance	Short name	Definition
Indigenous production [in kt]	INDPRODT	<p>Indigenous production includes all production within national boundaries including off-shore production. Production only includes marketable production, excluding volumes returned to formation. Such production includes all crude oil, NGL, condensates and oil from shale and tar sands, etc. It also includes the receipts of additives/oxygenates by refineries and blending plants, from outside the refinery sector.</p> <p>Also includes supplies of additives/oxygenates and other hydrocarbons, the production of which has already been covered in other fuel balances e.g. in NZ the manufacture of synthetic gasoline requires natural gas as feedstock. The amount of gas for methanol manufacture is accounted for in the natural gas balance, while the receipts of methanol are reported as inputs 'from other sources' in the oil balance.</p> <p>Measured in thousand metric tons.</p>
Indigenous production [in kbbl]	INDPRODB	<p>Indigenous production includes all production within national boundaries including off-shore production. Production only includes marketable production, excluding volumes returned to formation. Such production includes all crude oil, NGL, condensates and oil from shale and tar sands, etc. It also includes the receipts of additives/oxygenates by refineries and blending plants, from outside the refinery sector.</p> <p>Also includes supplies of additives/oxygenates and other hydrocarbons, the production of which has already been covered in other fuel balances e.g. in NZ the manufacture of synthetic gasoline requires natural gas as feedstock. The amount of gas for methanol manufacture is accounted for in the natural gas balance, while the receipts of methanol are reported as inputs 'from other sources' in the oil balance.</p> <p>Measured in thousand barrels.</p>
Total imports [in kt]	TOTIMPST	<p>Total imports reflect amounts having crossed the national territorial boundaries, whether customs clearance has taken place or not. Quantities of crude oil and products imported under processing agreements (i.e. refining on account) are included. Crude oil and NGLs are reported as coming from the country of ultimate origin; refinery feedstocks and finished products are reported as coming from the country of last consignment. Any gas liquids (e.g. LPG) extracted during the regasification of imported liquefied natural gas are included as imports. Petroleum products imported directly by the petrochemical industry are included.</p>
Total exports [in kt]	TOTEXPST	<p>Total exports reflect amounts having crossed the national territorial boundaries, whether customs clearance has taken place or not. Quantities of crude oil and products exported under processing agreements (i.e. refining on account) are included. Petroleum products exported directly by the petrochemical industry are included.</p>
Direct use [in kt]	DIRECUSET	<p>Crude oil, NGL and other hydrocarbons which are used directly without being processed in oil refineries are reported as direct use. This includes, for example, crude oil burned for electricity generation.</p>

Balance	Short name	Definition
Products transferred + Backflows [in kt]	TRANSFERST	<p>For primary products, transfers are calculated as: Products transferred + Backflows from petrochemical industry.</p> <p>Products transferred: These are imported petroleum products which are reclassified as feedstocks for further processing in the refinery, without delivery to final consumers.</p> <p>Backflows from petrochemical industry: These are finished or semi-finished products which are returned from final consumers to refineries for processing, blending or sale. They are usually by-products of petrochemical manufacturing. For integrated petro-chemical industries this flow is estimated. Transfers from one refinery to another within the country are excluded.</p>
Stock change (national territory) [in kt]	STCHANATT	<p>Stock changes are defined in terms of stocks held on national territory as follows:</p> <p>Closing stocks - Opening stocks.</p>
Statistical difference [in kt]	STATDIFFT	<p>This accounts for differences in coverage and/or definitions in reporting systems.</p> <p>For primary products this is calculated so as to satisfy the following condition:</p> <p>Indigenous production (inc. From other sources) + Imports - Exports - Direct use + Transfers - Stock changes - Statistical difference = Refinery intake observed</p> <p>For refined products this is calculated so as to satisfy the following condition:</p> <p>Refinery gross output - Refinery fuel + Imports - Exports - International marine bunkers + Transfers - Stock changes - Statistical difference = Gross inland deliveries observed.</p>
Refinery intake (observed) [in kt]	REFINOBST	This is defined as the amount observed to have entered the refining process. Measured in thousand metric tons.
Refinery intake (observed) [in kbbl]	REFINOBSB	This is defined as the amount observed to have entered the refining process. Measured in thousand barrels.
Refinery losses [in kt]	REFLOSST	These are the differences between observed refinery intake and gross refinery output. Losses may occur during the distillation processes due to evaporation.

Balance	Short name	Definition
Opening stock level - national territory [in kt]	OSNATTERT	Opening stock levels, at the first day of the month, of stocks held on national territory. This includes all non-military stocks held by importers, refiners, governments, major non-importing final consumers whose stocks are subject to government control, and by foreign entities in the following facilities: bulk terminals, refinery tanks, pipeline tankage, barges, intercoastal tankers (when port of destination and departure are in the reporting country), tankers in port (if their cargo is to be discharged in the reporting country) and inland ship bunkers. Oil is reported regardless of the ownership of such storage facilities.
Closing stock level - national territory [in kt]	CSNATTERT	Closing stock levels, at the last day of the month, of stocks held on national territory. This includes all non-military stocks held by importers, refiners, governments, major non-importing final consumers whose stocks are subject to government control, and by foreign entities in the following facilities: bulk terminals, refinery tanks, pipeline tankage, barges, intercoastal tankers (when port of destination and departure are in the reporting country), tankers in port (if their cargo is to be discharged in the reporting country) and inland ship bunkers. Oil is reported regardless of the ownership of such storage facilities.
Closing government stock level [in kt]	CSGOVT	Closing stock levels, at the last day of the month, of primary stocks, exclusively for emergency purposes, owned by governments and organisations which have been established to hold stocks (stock holding organisations).

Countries

Countries	Short name	Definition
Australia	AUSTRALI	Australia excludes the overseas territories.
Austria	AUSTRIA	
Belgium	BELGIUM	
Canada	CANADA	
Chile	CHILE	
Czech Republic	CZECH	
Denmark	DENMARK	Denmark excludes the Danish Faroes and Greenland.
Estonia	ESTONIA	
Finland	FINLAND	
France	FRANCE	France includes Monaco and excludes the overseas territories Guadeloupe, Martinique, French Guyana, Reunion, St.-Pierre and Miquelon, New Caledonia, French Polynesia, Wallis and Futuna, and Mayotte. Following a methodological change in the French statistics coverage, data from January 2017 includes the overseas departments (French Guiana, Guadeloupe, Martinique, Mayotte and Reunion).
Germany	GERMANY	

Countries	Short name	Definition
Greece	GREECE	
Hungary	HUNGARY	
Iceland	ICELAND	
Ireland	IRELAND	
Israel ¹	ISRAEL	
Italy	ITALY	Italy includes San Marino and the Vatican.
Japan	JAPAN	Japan includes Okinawa.
Korea	KOREA	
Latvia	LATVIA	
Lithuania	LITHUANIA	
Luxembourg	LUXEMBOU	
Mexico	MEXICO	
Netherlands	NETHLAND	The Netherlands exclude Suriname and the Netherlands Antilles.
New Zealand	NZ	
Norway	NORWAY	
Poland	POLAND	
Portugal	PORTUGAL	Portugal includes the Azores and Madeira.
Slovak Republic	SLOVAKIA	
Slovenia	SLOVENIA	
Spain	SPAIN	Spain includes the Canary Islands, the Balearic Islands, and Ceuta and Melilla.
Sweden	SWEDEN	
Switzerland	SWITLAND	Switzerland includes Liechtenstein.
Turkey	TURKEY	
United Kingdom	UK	
United States	USA	The United States includes the 50 States, District of Columbia, Puerto Rico, Guam, the US Virgin Islands and the Hawaiian Foreign Trade Zone.
OECD Total	OECDTOT	Includes Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.

1. The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Countries	Short name	Definition
OECD Americas	OECDAME	Includes Canada, Chile, Mexico and the United States.
OECD Asia Oceania	OECD AOC	Includes Australia, Israel, Japan, Korea and New Zealand.
OECD Europe	OECD EUR	Includes Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Balance: Products (PRODBAL.IVT)

Structure

This data set contains monthly balances for secondary oil products for OECD countries from 2005 onwards in thousand metric tons and in thousand barrels for some balance flows.

Historical data from 1984 to 2004 are available with the same dimensions in HPRODBAL.IVT.

Sources

The source of the data is the Monthly Oil Survey (MOS) carried out by the IEA.

Dimensions

Time

The data set contains monthly data from January 2005 up to the current MOS month.

Products

Product	Short name	Definition
Crude oil	CRUDEOIL	Crude oil is a mineral oil of natural origin comprising a mixture of hydrocarbons and associated impurities, such as sulphur. It exists in the liquid phase under normal surface temperature and pressure and its physical characteristics (density, viscosity, etc.) are highly variable. This category includes field or lease condensate recovered from associated and non-associated gas where it is commingled with the commercial crude oil stream.
Natural gas liquids	NGL	NGL are liquid or liquefied hydrocarbons recovered from natural gas in separation facilities or gas processing plants. Natural gas liquids include ethane, propane, butane (normal and iso-), (iso) pentane and pentanes plus (sometimes referred to as natural gasoline or plant condensate). For OPEC countries, field condensates are included with NGL rather than crude oil.
Refinery gas	REFINGAS	Refinery gas includes a mixture of non-condensable gases mainly consisting of hydrogen, methane, ethane and olefins obtained during distillation of crude oil or treatment of oil products (e.g. cracking) in refineries. This also includes gases which are returned from the petrochemical industry.

Product	Short name	Definition
Ethane	ETHANE	A naturally gaseous straight-chain hydrocarbon (C ₂ H ₆), extracted from natural gas and refinery gas streams.
Liquefied petroleum gases	LPG	LPG are light saturated paraffinic hydrocarbons derived from the refinery processes, crude oil stabilisation and natural gas processing plants. They consist mainly of propane (C ₃ H ₈) and butane (C ₄ H ₁₀) or a combination of the two. They are normally liquefied under pressure for transportation and storage.
Naphtha	NAPHTHA	Naphtha is a feedstock destined for either the petrochemical industry (e.g. ethylene manufacture or aromatics production) or for gasoline production by reforming or isomerisation within the refinery. Naphtha comprises material in the 30°C and 210°C distillation range or part of this range. Naphtha imported for blending is reported as an import of naphtha, then shown on the interproduct transfer row, as a negative entry for naphtha, and a positive entry for the corresponding finished product (e.g. gasoline).
Motor gasoline	MOTORGAS	Motor gasoline consists of a mixture of light hydrocarbons distilling between 35°C and 215°C. It is used as a fuel for land based spark ignition engines. Motor gasoline may include additives, oxygenates and octane enhancers, including lead compounds such as TEL (tetraethyl lead) and TML (tetramethyl lead). This category includes motor gasoline blending components (excluding additives/oxygenates), e.g. alkylates, isomerate, reformate, cracked gasoline destined for use as finished motor gasoline.
Aviation gasoline	AVGAS	This is motor spirit prepared especially for aviation piston engines, with an octane number suited to the engine, a freezing point of -60°C and a distillation range usually within the limits of 30°C and 180°C.
Gasoline type jet fuel	JETGAS	This includes all light hydrocarbon oils for use in aviation turbine power units, distilling between 100°C and 250°C. They are obtained by blending kerosenes and gasolines or naphthas in such a way that the aromatic content does not exceed 25% in volume, and the vapour pressure is between 13.7kPa and 20.6kPa.
Kerosene type jet fuel	JETKERO	This is a distillate used for aviation turbine power units. It has the same distillation characteristics between 150°C and 300°C (generally not above 250°C) and flash point as kerosene. In addition, it has particular specifications (such as freezing point) which are established by the International Air Transport Association (IATA).
Other kerosene	OTHKERO	Kerosene comprises refined petroleum distillate and is used in sectors other than aircraft transport. It distils between 150°C and 300°C.

Product	Short name	Definition
Gas/diesel oil	GASDIES	<p>Gas/diesel oil is primarily a medium distillate, distilling between 180°C and 380°C.</p> <p>Several grades are available depending on uses:</p> <ul style="list-style-type: none"> - diesel oil for diesel compression ignition (cars, trucks, marine etc.); - light heating oil for industrial and commercial uses; - other gas oil including heavy gas oils which distil between 380°C and 540°C and which are used as petrochemical feedstocks.
Fuel oil (residual)	RESFUEL	<p>This covers all residual (heavy) fuel oils (including those obtained by blending). Kinematic viscosity is above 10cSt at 80°C. The flash point is always above 50°C and density is always more than 0.90 kg/l.</p>
Petroleum coke	PETCOKE	<p>Petroleum coke is a black solid residue, obtained mainly by cracking and carbonising residue feedstock, tar and pitches in processes such as delayed coking or fluid coking. It consists mainly of carbon (90 to 95%) and has a low ash content. It is used as a feedstock in coke ovens for the steel industry, for heating purposes, for electrode manufacture and for production of chemicals. The two most important qualities are "green coke" and "calcinated coke".</p> <p>This category also includes "catalyst coke" deposited on the catalyst during refining processes; this coke is not recoverable and is usually burned as refinery fuel.</p>

Product	Short name	Definition
Other products	OPRODS	<p>The category 'other products' includes the following:</p> <p>White spirit and SBP white spirit and SBP are defined as refined distillate intermediates with a distillation in the naphtha/kerosene range. They are sub-divided as:</p> <ol style="list-style-type: none"> Industrial spirit (SBP): Light oils distilling between 30° and 200°C. There are 7 or 8 grades of industrial spirit, depending on the position of the cut in the distillation range. The grades are defined according to the temperature difference between the 5% volume and 90% volume distillation points (which is not more than 60°C). White spirit: Industrial spirit with a flash point above 30°C. The distillation range of white spirit is 135° to 200°C. <p>Lubricants are hydrocarbons produced from distillate or residue; they are mainly used to reduce friction between bearing surfaces. This category includes all finished grades of lubricating oil, from spindle oil to cylinder oil, and those used in greases, including motor oils and all grades of lubricating oil base stocks.</p> <p>Bitumen is a solid, semi-solid or viscous hydrocarbon with a colloidal structure, being brown to black in colour, obtained as a residue in the distillation of crude oil, by vacuum distillation of oil residues from atmospheric distillation. Bitumen is often referred to as asphalt and is primarily used for construction of roads and for roofing material. This category includes fluidized and cut back bitumen.</p> <p>Paraffin waxes are saturated aliphatic hydrocarbons. These waxes are residues extracted when dewaxing lubricant oils. They have a crystalline structure which is more-or-less fine according to the grade. Their main characteristics are as follows: they are colourless, odourless and translucent, with a melting point above 45°C.</p> <p>Other are all products not specifically mentioned above, for example: tar and sulphur. This category also includes aromatics (e.g. BTX or benzene, toluene and xylene) and olefins (e.g. propylene) produced within refineries.</p>
Total products	TOTPRODS	Sum of refined products

Balance

Balance	Short name	Definition
Refinery gross output [in kt]	REFGROUTT	This is the production of finished petroleum products at a refining or blending plant. It excludes refinery losses, but includes refinery fuel. Measured in thousand metric tons.
Refinery gross output [in kbbl]	REFGROUTB	This is the production of finished petroleum products at a refining or blending plant. It excludes refinery losses, but includes refinery fuel. Measured in thousand barrels.
Refinery fuel [in kt]	REFFUEL	These are all petroleum products consumed in support of the operation of a refinery. This does not include products used by oil companies outside the refining process, e.g. bunkers or oil tankers.

Balance	Short name	Definition
Total imports [in kt]	TOTIMPST	Total imports reflect amounts having crossed the national territorial boundaries, whether customs clearance has taken place or not. Quantities of crude oil and products imported under processing agreements (i.e. refining on account) are included. Crude oil and NGLs are reported as coming from the country of ultimate origin; refinery feedstocks and finished products are reported as coming from the country of last consignment. Any gas liquids (e.g. LPG) extracted during the regasification of imported liquefied natural gas are included as imports. Petroleum products imported directly by the petrochemical industry are included.
Total exports [in kt]	TOTEXPST	Total exports reflect amounts having crossed the national territorial boundaries, whether customs clearance has taken place or not. Quantities of crude oil and products exported under processing agreements (i.e. refining on account) are included. Petroleum products exported directly by the petrochemical industry are included.
International marine bunkers [in kt]	BUNKERST	Bunkers cover the quantities of fuels delivered to sea-going ships of all flags, including warships. Consumption by ships engaged in transport in inland and coastal waters is not included. Note that fuel delivered for deep-sea fishing is not included.
Interproduct transfers + Recycled + Primary products receipts - Products transferred [in kt]	TRANSFERST	<p>These are calculated as:</p> <p>Interproduct transfers + Recycled products + Primary product receipts - Product transfers</p> <p>Interproduct transfers: Result from the reclassification of products either because their specification has changed, or because they are blended into another product. For example, quantities of kerosene may be reclassified as gasoil after blending with the latter in order to meet its winter diesel specification.</p> <p>Recycled products: These are finished products which pass a second time through the marketing network, after having been once delivered to final consumers (e.g. used lubricants which are reprocessed). These quantities should be distinguished from petrochemical backflows (see definitions).</p> <p>Primary product receipts: Quantities of indigenous or imported crude oil (including condensate) and indigenous NGL which are used directly without being processed in an oil refinery.</p> <p>Products transferred: These are imported petroleum products which are reclassified as feedstocks for further processing in the refinery, without delivery to final consumers.</p>
Stock change (national territory) [in kt]	STCHANATT	<p>Stock changes are defined in terms of stocks held on national territory as follows:</p> <p>Closing stocks - Opening stocks</p>

Balance	Short name	Definition
Statistical difference [in kt]	STATDIFFT	This accounts for differences in coverage and/or definitions in reporting systems This is calculated so as to satisfy the following condition: Refinery gross output - Refinery fuel + Imports - Exports - International marine bunkers + Transfers - Stock changes - Statistical difference = Gross inland deliveries observed
Gross inland deliveries (observed) [in kt]	GDINCTROT	These are the observed deliveries of finished petroleum products from primary sources (e.g. refineries, blending plants etc.) to the inland market.
Inland deliveries of automotive diesel and LPG [in kt]	AUDILPGT	All deliveries of diesel oil and LPG used for road transport vehicles. This flow is a memo item: the amounts are included in Gross inland deliveries (obs.).
Primary product receipts [in kt]	PPRECPTS	Quantities of indigenous or imported crude oil (including condensate) and indigenous NGL which are used directly without being processed in an oil refinery. This flow is a memo item: the amounts are included in TRANSFERST (Inter-product transfers + Recycled + Primary products receipts - Products transferred).
Gross deliveries adjustment for OMR [in kt]	OMRGRADJT	These are adjustment flows whose aim is to make the addition of 12 months of monthly data consistent with data coming from the IEA Annual Oil and Gas database and which are incorporated in demand aggregates shown in the Oil Market Report.
Backflows to refineries [in kt]	BACKFLOWT	Those quantities of backflows returned to refinery are shown as backflows in the primary products balance and subsequently as a part of refinery intake, gross refinery output and of final consumption of the relevant products.
Backflow adjustment for OMR [in kt]	OMRBFADJT	These are adjustment flows whose aim is to make the addition of 12 months of monthly data consistent with data coming from the IEA Annual Oil and Gas database and which are incorporated in demand aggregates shown in the Oil Market Report.
Demand as defined in the Oil Market Report [in kt]	OMRDEMT	This corresponds to demand as defined in the Oil Market Report, being the sum of adjusted gross inland deliveries, refinery fuel and international marine bunkers, minus adjusted backflows. Gross inland deliveries observed + Refinery fuel + International marine bunkers + OMR adjustment to Gross deliveries - Backflows - OMR adjustment to Backflows Measured in thousand metric tons.

Balance	Short name	Definition
Demand as defined in the Oil Market Report [in kbbl]	OMRDEMB	<p>This corresponds to demand as defined in the Oil Market Report, being the sum of adjusted gross inland deliveries, refinery fuel and international marine bunkers, minus adjusted backflows.</p> <p>Gross inland deliveries observed + Refinery fuel + International marine bunkers + OMR adjustment to gross deliveries - Backflows - OMR adjustment to Backflows</p> <p>Measured in thousand barrels.</p>
Opening stock level - national territory [in kt]	OSNATTERT	<p>Opening stock levels, at the first day of the month, of stocks held on national territory. This includes all non-military stocks held by importers, refiners, Governments, major non-importing final consumers whose stocks are subject to government control, and by foreign entities in the following facilities: bulk terminals, refinery tanks, pipeline tankage, barges, intercoastal tankers (when port of destination and departure are in the reporting country), tankers in port (if their cargo is to be discharged in the reporting country) and inland ship bunkers. Oil is reported regardless of the ownership of such storage facilities.</p>
Closing stock level - national territory [in kt]	CSNATTERT	<p>Closing stock levels, at the last day of the month, of stocks held on national territory. This includes all non-military stocks held by importers, refiners, Governments, major non-importing final consumers whose stocks are subject to government control, and by foreign entities in the following facilities: bulk terminals, refinery tanks, pipeline tankage, barges, intercoastal tankers (when port of destination and departure are in the reporting country), tankers in port (if their cargo is to be discharged in the reporting country) and inland ship bunkers. Oil is reported regardless of the ownership of such storage facilities.</p>
Closing government stock level [in kt]	CSGOVT	<p>Closing stock levels, at the last day of the month, of primary stocks, exclusively for emergency purposes, owned by governments and organisations which have been established to hold stocks (stock holding organisations).</p>

Countries

OECD countries (see the list of countries under CRUDBAL.IVT for a list of long and short names as well as definitions for OECD countries).

Balance: Sub products (PRODSP.IVT)

Structure

This data set contains monthly balances for selected secondary oil products and their sub products for OECD countries in thousand metric tons from 2005 onwards.

Historical data from 2000 to 2004 are available with the same dimensions in HHPRODSP.IVT.

Sources

The source of the data is the Monthly Oil Survey (MOS) carried out by the IEA.

Dimensions

Time

The data set contains monthly data from January 2005 up to the current MOS month.

Products

Product	Short name	Definition
Motor gasoline	MOTORGAS	Motor gasoline consists of a mixture of light hydrocarbons distilling between 35°C and 215°C. It is used as a fuel for land based spark ignition engines. Motor gasoline may include additives, oxygenates and octane enhancers, including lead compounds such as TEL (tetraethyl lead) and TML (tetramethyl lead). This category includes motor gasoline blending components (excluding additives/oxygenates), e.g. alkylates, isomerase, reformate, cracked gasoline destined for use as finished motor gasoline.
Biogasoline	BIOGASOL	This category includes bioethanol (ethanol produced from biomass and/or the biodegradable fraction of waste), biomethanol (methanol produced from biomass and/or the biodegradable fraction of waste), bioETBE (ethyl-tertiobutyl-ether produced on the basis of bioethanol: the percentage by volume of bioETBE that is calculated as biofuel is 37%) and bioMTBE (methyl-tertio-butyl-ether produced on the basis of biomethanol: the percentage by volume of bioMTBE that is calculated as biofuel is 22%).
Non-biogasoline	NONBIOGASO	This category covers Motor gasoline as defined above excluding Biogasoline. If no information on the biofuel portion was submitted, the non-biofuel is assumed to be 100% of the product.
Kerosene type jet fuel	JETKERO	This is a distillate used for aviation turbine power units. It has the same distillation characteristics between 150°C and 300°C (generally not above 250°C) and flash point as kerosene. In addition, it has particular specifications (such as freezing point) which are established by the International Air Transport Association (IATA).
Bio jet kerosene	BIOJETKERO	Liquid biofuels derived from biomass and blended with Jet kerosene.
Non-bio jet kerosene	NONBIOJETK	This category covers jet kerosene as defined above excluding Bio jet kerosene. If no information on the biofuel portion was submitted, the non-biofuel is assumed to be 100% of the product.
Road diesel	DIESEL	Diesel oil for diesel compression ignition (cars, trucks, marine etc) "usually of low sulphur content;"
Heat and other gas oil	HEATOIL	Light heating oil for industrial and commercial uses; Marine diesel and diesel used in rail traffic; Other gas oil including heavy gas oils which distil between 380°C and 540°C and which are used as petrochemical feedstocks.

Product	Short name	Definition
Total gas/diesel oil	GASDIES	Gas/diesel oil is primarily a medium distillate, distilling between 180°C and 380°C. Several grades are available depending on uses:- diesel oil for diesel compression ignition (cars, trucks, marine etc.); - light heating oil for industrial and commercial uses; - other gas oil including heavy gas oils which distil between 380°C and 540°C and which are used as petrochemical feedstocks.
Biodiesel	BIODIESEL	This category includes biodiesel (a methyl-ester produced from vegetable or animal oil, of diesel quality), biodimethylether (dimethylether produced from biomass), Fischer Tropsch (Fischer Tropsch produced from biomass), cold pressed biooil (oil produced from oil seed through mechanical processing only) and all other liquid biofuels which are added to, blended with Gas/diesel oil.
Non-bio gas/diesel oil	NONBIODIES	This category consists of gas diesel oil as defined above excluding Biodiesel. If no information on the biofuel portion was submitted, the non-biofuel is assumed to be 100% of the product.
Fuel oil (residual)	RESFUEL	This covers all residual (heavy) fuel oils (including those obtained by blending). Kinematic viscosity is above 10cSt at 80°C. The flash point is always above 50°C and density is always more than 0.90 kg/l.
Fuel oil - low sulphur	LOWSULF	Heavy fuel oil with sulphur content lower than 1%.
Fuel oil - high sulphur	HIGHSULF	Heavy fuel oil with sulphur content of 1% or higher.

Balance

Balance	Short name	Definition
Refinery gross output [in kt]	REFGROUTT	This is the production of finished petroleum products at a refining or blending plant. It excludes refinery losses, but includes refinery fuel. Measured in thousand metric tons.
Refinery fuel [in kt]	REFFUEL	These are all petroleum products consumed in support of the operation of a refinery. This does not include products used by oil companies outside the refining process, e.g. bunkers or oil tankers.
Total imports [in kt]	TOTIMPST	Total imports reflect amounts having crossed the national territorial boundaries, whether customs clearance has taken place or not. Quantities of crude oil and products imported under processing agreements (i.e. refining on account) are included. Crude oil and NGLs are reported as coming from the country of ultimate origin; refinery feedstocks and finished products are reported as coming from the country of last consignment. Any gas liquids (e.g. LPG) extracted during the regasification of imported liquefied natural gas are included as imports. Petroleum products imported directly by the petrochemical industry are included.

Balance	Short name	Definition
Total exports [in kt]	TOTEXPST	Total exports reflect amounts having crossed the national territorial boundaries, whether customs clearance has taken place or not. Quantities of crude oil and products exported under processing agreements (i.e. refining on account) are included. Petroleum products exported directly by the petrochemical industry are included.
International marine bunkers [in kt]	BUNKERST	Bunkers cover the quantities of fuels delivered to sea-going ships of all flags, including warships. Consumption by ships engaged in transport in inland and coastal waters is not included. Note that fuel delivered for deep-sea fishing is not included.
Interproduct transfers + Recycled + Primary products receipts - Products transferred [in kt]	TRANSFERST	<p>These are calculated as:</p> <p>Interproduct transfers + Recycled products + Primary product receipts - Product transfers</p> <p>Interproduct transfers: Result from the reclassification of products either because their specification has changed, or because they are blended into another product. For example, quantities of kerosene may be reclassified as gasoil after blending with the latter in order to meet its winter diesel specification.</p> <p>Recycled products: These are finished products which pass a second time through the marketing network, after having been once delivered to final consumers (e.g. used lubricants which are reprocessed). These quantities should be distinguished from petrochemical backflows (see definitions).</p> <p>Primary product receipts: Quantities of indigenous or imported crude oil (including condensate) and indigenous NGL which are used directly without being processed in an oil refinery.</p> <p>Products transferred: These are imported petroleum products which are reclassified as feedstocks for further processing in the refinery, without delivery to final consumers.</p>
Stock change (national territory) [in kt]	STCHANATT	Stock changes are defined in terms of stocks held on national territory as follows: Closing stocks - Opening stocks
Statistical difference [in kt]	STATDIFFT	<p>This accounts for differences in coverage and/or definitions in reporting systems.</p> <p>This is calculated so as to satisfy the following condition:</p> <p>Refinery gross output - Refinery fuel + Imports - Exports - International marine bunkers + Transfers - Stock changes - Statistical difference = Gross inland deliveries observed</p>
Gross inland deliveries (observed) [in kt]	GDINCTROT	These are the observed deliveries of finished petroleum products from primary sources (e.g. refineries, blending plants etc.) to the inland market.

Balance	Short name	Definition
Inland deliveries of automotive diesel and LPG [in kt]	AUDILPGT	All deliveries of diesel oil and LPG used for road transport vehicles. This flow is a memo item: the amounts are included in Gross inland deliveries (obs.).
Primary product receipts [in kt]	PPRECPTS	Quantities of indigenous or imported crude oil (including condensate) and indigenous NGL which are used directly without being processed in an oil refinery. This flow is a memo item: the amounts are included in TRANSFERST (Inter-product transfers + Recycled + Primary products receipts - Products transferred).
Backflows to refineries [in kt]	BACKFLOWT	Those quantities of backflows returned to refinery are shown as backflows in the primary products balance and subsequently as a part of refinery intake, gross refinery output and of final consumption of the relevant products.
Opening stock level - national territory [in kt]	OSNATTERT	Opening stock levels, at the first day of the month, of stocks held on national territory. This includes all non-military stocks held by importers, refiners, governments, major non-importing final consumers whose stocks are subject to government control, and by foreign entities in the following facilities: bulk terminals, refinery tanks, pipeline tankage, barges, intercoastal tankers (when port of destination and departure are in the reporting country), tankers in port (if their cargo is to be discharged in the reporting country) and inland ship bunkers. Oil is reported regardless of the ownership of such storage facilities.
Closing stock level - national territory [in kt]	CSNATTERT	Closing stock levels, at the last day of the month, of stocks held on national territory. This includes all non-military stocks held by importers, refiners, governments, major non-importing final consumers whose stocks are subject to government control, and by foreign entities in the following facilities: bulk terminals, refinery tanks, pipeline tankage, barges, intercoastal tankers (when port of destination and departure are in the reporting country), tankers in port (if their cargo is to be discharged in the reporting country) and inland ship bunkers. Oil is reported regardless of the ownership of such storage facilities.
Closing government stock level [in kt]	CSGOVT	Closing stock levels, at the last day of the month, of primary stocks, exclusively for emergency purposes, owned by governments and organisations which have been established to hold stocks (stock holding organisations).

Countries

OECD countries (see the list of countries under CRUDBAL.IVT for a list of long and short names as well as definitions for OECD countries).

OECD demand (OECDDEM.IVT)

Structure

This data set contains monthly data on demand for secondary oil products for OECD countries in thousand barrels per day (KBD) from 2005 onwards. There might be small differences between the demand in this file and in the product balances (PRODBAL.IVT). Differences that cannot be explained by rounding are adjustments made by the IEA analysts. The IEA oil analysts may make small adjustments to original values submitted by the national administration to better reflect market information.

Historical data from 1984 to 2004 are available with the same dimensions in HOECDDEM.IVT.

Sources

The main source of the data is the Monthly Oil Survey (MOS) carried out by the IEA.

Dimensions

Time

The data set contains data from monthly, quarterly and annual data from January 2005 to the end of the current or next calendar year (next calendar year is added with the July publication). Data after MOS month are estimated.

Products

Products	Short name	Definition
LPG and ethane	LPGETHANE	Liquefied petroleum gases. Ethane, ethylene, propane, propylene, normal butane, butylene, isobutane and isobutylene produced at refineries or natural gas processing plants, including plants which fractionate raw natural gas liquids. The IEA's statistical questionnaire collects data separately for LPG (excluding ethane and ethylene) and for ethane and ethylene; this table combines the two categories.
Naphtha	NAPHTHA	Naphtha is a feedstock destined for either the petrochemical industry (e.g. ethylene manufacture or aromatics production) or for gasoline production by reforming or isomerisation within the refinery. Naphtha comprises material in the 30°C and 210°C distillation range or part of this range.
Motor gasoline	MOTORGAS	Motor gasoline consists of a mixture of light hydrocarbons distilling between 35°C and 215°C. It is used as a fuel for land based spark ignition engines. Motor gasoline may include additives, oxygenates and octane enhancers, including lead compounds such as TEL (tetraethyl lead) and TML (tetramethyl lead). This category includes motor gasoline blending components (excluding additives/oxygenates), e.g. alkylates, isomerate, reformate, cracked gasoline destined for use as finished motor gasoline.

Products	Short name	Definition
Jet and kerosene	JETANDKERO	Includes kerosene-type jet fuel and other kerosene: Kerosene-type jet fuel is a distillate used for aviation turbine power units. It has the same distillation characteristics between 150°C and 300°C (generally not above 250°C) and flash point as kerosene. In addition, it has particular specifications (such as freezing point) which are established by the International Air Transport Association (IATA). Other kerosene comprises refined petroleum distillate and is used in sectors other than aircraft transport. It distils between 150°C and 300°C.
Gas/diesel oil	GASDIES	Gas/diesel oil is primarily a medium distillate, distilling between 180°C and 380°C. Several grades are available depending on uses: - diesel oil for diesel compression ignition (cars, trucks, marine etc.); - light heating oil for industrial and commercial uses; - other gas oil including heavy gas oils which distil between 380°C and 540°C and which are used as petrochemical feedstocks.
Diesel	DIESEL	Diesel oil for diesel compression ignition (cars, trucks, etc.).
Other gasoil	OTHGASOIL	Other gasoil includes: - light heating oil for industrial and commercial uses; - marine gasoil and diesel used in rail traffic; - other gas oil including heavy gas oils which distil between 380°C and 540°C and which are used as petrochemical feedstocks.
Residual fuel	RESFUEL	This covers all residual (heavy) fuel oils (including those obtained by blending). Kinematic viscosity is above 10cSt at 80°C. The flash point is always above 50°C and density is always more than 0.90 kg/l.
Other products	OTHERPRODS	The category other products includes the following : Crude oil, 'other' NGL, synthetic fuels, orimulsion, hydrogen, synthetic crude, refinery gas, aviation gasoline, naphtha type jet fuel, white spirit, industrial spirit (SBP), lubricants, bitumen, paraffin waxes, petroleum coke, tar, sulphur, aromatics and olefins.
Total products	TOTPRODS	Sum of all products

Countries

OECD countries (see the list of countries under CRUDBAL.IVT for a list of long and short names as well as definitions for OECD countries).

Non-OECD Demand (NOECDDEM.IVT)

Structure

This data set contains quarterly and annual data on demand for secondary oil products for non-OECD countries in thousand barrels per day (KBD) from 2005. Include forecasts for 4-7 quarters. Historical data from 1984 to 2004 are available with the same dimensions in HNOECDDEM.IVT.

Sources

Non-OECD supply data are provided by a variety of sources, including governments and companies. The timeliness of the data varies.

Dimensions

Time

The data set contains quarterly and annual data from January 2005 to the end of the current or next calendar year (next calendar year is added with the July publication). Data after MOS month are estimated.

Countries

Country	Shortname	Country	Shortname	Country	Shortname
Algeria	ALGERIA	Korea DPR	KOREADPR	Colombia	COLOMBIA
Angola	ANGOLA	India	INDIA	Costa Rica	COSTARICA
Benin	BENIN	Indonesia	INDONESIA	Cuba	CUBA
Cambodia	CAMBODIA	Malaysia	MALAYSIA	Dominican Republic	DOMINICANR
Cameroon	CAMEROON	Myanmar	MYANMAR	Ecuador	ECUADOR
Congo	CONGO	Nepal	NEPAL	El Salvador	ELSALVADOR
Democratic Republic of Congo	CONGOREP	Pakistan	PAKISTAN	Guatemala	GUATEMALA
Curacao	CURACAO	China	CHINA	Haiti	HAITI
Egypt	EGYPT	Hong Kong (China)	HONGKONG	Honduras	HONDURAS
Ethiopia	ETHIOPIA	Philippines	PHILIPPINE	Jamaica	JAMAICA
Gabon	GABON	Singapore	SINGAPORE	Nicaragua	NICARAGUA
Ghana	GHANA	Sri Lanka	SRILANKA	Panama	PANAMA
Ivory Coast	COTEIVOIRE	Chinese Taipei	TAIPEI	Paraguay	PARAGUAY
Kenya	KENYA	Thailand	THAILAND	Peru	PERU
Kosovo	KOSOVO	Viet Nam	VIETNAM	Trinidad and Tobago	TRINIDAD
Libya	LIBYA	Other Asia	OTHERASIA	Uruguay	URUGUAY
Mongolia	MONGOLIA	TOTAL OTHER ASIA	OMROTHASIA	Venezuela	VENEZUELA

Country	Shortname	Country	Shortname	Country	Shortname
Montenegro	MONTENEGRO	Albania	ALBANIA	Other Non-OECD Americas	OTHERLATIN
Morocco	MOROCCO	Bosnia and Herzegovina	BOSNIAHERZ	TOTAL Non OECD Americas	OMRLAM
Mozambique	MOZAMBIQUE	Bulgaria	BULGARIA	Bahrain	BAHRAIN
Nigeria	NIGERIA	Croatia	CROATIA	Iraq	IRAQ
Senegal	SENEGAL	Cyprus	CYPRUS	Iran	IRAN
Serbia	SERBIA	North Macedonia	NORTHMACED	Jordan	JORDAN
South Africa	SOUTHAFRIC	Gibraltar	GIBRALTAR	Kuwait	KUWAIT
South Sudan	SSUDAN	Malta	MALTA	Lebanon	LEBANON
Sudan	SUDAN	Romania	ROMANIA	Neutral Zone	NEUTRALZON
Tunisia	TUNISIA	Former Yugoslavia	FORMERYUGO	Oman	OMAN
Tanzania	TANZANIA	TOTAL EUROPE	OMRNEUR	Qatar	QATAR
Zambia	ZAMBIA	Former Soviet Union	FSU	Saudi Arabia	SAUDARABI
Zimbabwe	ZIMBABWE	Russia	RUSSIA	Syria	SYRIA
Other Africa	OTHERAFRIC	Other FSU	OTHFUSSR	United Arab Emirates	UAE
TOTAL AFRICA	AFRICA	Argentina	ARGENTINA	Yemen	YEMEN
Bangladesh	BANGLADESH	Bolivia	BOLIVIA	TOTAL MIDDLE EAST	MIDDLEEAST
Brunei	BRUNEI	Brazil	BRAZIL	Suriname	SURINAME
TOTAL NON-OECD	NONOECD				

Stocks (STOCKS.IVT)

Structure

This data set contains monthly balances for secondary oil products for OECD countries in thousand barrels from 2005 onwards.

Historical data from 1984 to 2004 are available with the same dimensions in HSTOCK.IVT.

Sources

The main source of the data is the Monthly Oil Survey (MOS) carried out by the IEA.

Dimensions

Time

The data set contains monthly data from January 2005 up to the MOS month. For some countries stock data are available on an M-1 basis (the month following the MOS month) based on preliminary information.

Products

Products	Short name	Definition
Crude oil	CRUDEOIL	Crude oil is a mineral oil of natural origin comprising a mixture of hydrocarbons and associated impurities, such as sulphur. It exists in the liquid phase under normal surface temperature and pressure and its physical characteristics (density, viscosity, etc.) are highly variable. This category includes field or lease condensate recovered from associated and non-associated gas where it is commingled with the commercial crude oil stream.
NGL + Feedstocks and other	NGLFEED	Sum of NGL, Refinery feedstocks, Additives/oxygenates and Other hydrocarbons
Crude + NGL + Feedstocks	CRNGFEED	Sum of Crude oil, NGL, Refinery feedstocks, Additives/oxygenates and Other hydrocarbons.
Motor gasoline	MOTORGAS	Motor gasoline consists of a mixture of light hydrocarbons distilling between 35°C and 215°C. It is used as a fuel for land based spark ignition engines. Motor gasoline may include additives, oxygenates and octane enhancers, including lead compounds such as TEL (tetraethyl lead) and TML (tetramethyl lead). This category includes motor gasoline blending components (excluding additives/oxygenates), e.g. alkylates, isomate, reformat, cracked gasoline destined for use as finished motor gasoline.
Middle distillates	MIDDIST	Sum of gas/diesel oil, kerosene type jetfuel and other kerosene.
Fuel oil (residual)	RESFUEL	This covers all residual (heavy) fuel oils (including those obtained by blending). Kinematic viscosity is above 10cSt at 80°C. The flash point is always above 50°C and density is always more than 0.90 kg/l.
Other products	OTHER	Other products include the following: Refinery gas (not liquefied) includes a mixture of non-condensed gases mainly consisting of hydrogen, methane, ethane and olefins obtained during distillation of crude oil or treatment of oil products (e.g. cracking) in refineries. This also includes gases which are returned from the petrochemical industry. Ethane is naturally gaseous straight-chain hydrocarbon (C ₂ H ₆), extracted from natural gas and refinery gas streams. Liquefied petroleum gases (LPG) are light saturated paraffinic hydrocarbons derived from the refinery processes, crude oil stabilisation and natural gas processing plants. They consist mainly of propane (C ₃ H ₈) and butane (C ₄ H ₁₀) or a combination of the two. They also include propylene, isobutene and isobutylene. LPG are normally liquefied under pressure for transportation and storage. Naphtha is a feedstock destined for either the petrochemical industry (e.g. ethylene manufacture or aromatics production) or for gasoline production by reforming or isomerisation within the refinery. Naphtha

Products	Short name	Definition
		<p>comprises material in the 30°C and 210°C distillation range or part of this range.</p> <p>Aviation gasoline is a motor spirit prepared especially for aviation piston engines, with an octane number suited to the engine, a freezing point of -60°C and a distillation range usually within the limits of 30°C and 180°C.</p> <p>Gasoline type jet fuel (naphtha type jet fuel or JP4) includes all light hydrocarbon oils for use in aviation turbine power units, distilling between 100°C and 250°C. They are obtained by blending kerosenes and gasolines or naphthas in such a way that the aromatic content does not exceed 25% in volume, and the vapour pressure is between 13.7kPa and 20.6kPa.</p> <p>Petroleum coke is a black solid residue, obtained mainly by cracking and carbonising residue feedstock, tar and pitches in processes such as delayed coking or fluid coking. It consists mainly of carbon (90 to 95%) and has a low ash content. It is used as a feedstock in coke ovens for the steel industry, for heating purposes, for electrode manufacture and for production of chemicals. The two most important qualities are "green coke" and "calcinated coke". This category also includes "catalyst coke" deposited on the catalyst during refining processes; this coke is not recoverable and is usually burned as refinery fuel.</p>

Products	Short name	Definition
		<p>White spirit and SBP are defined as refined distillate intermediates with a distillation in the naphtha/kerosene range. They are sub-divided as:</p> <p>i. Industrial spirit (SBP): Light oils distilling between 30° and 200°C. There are 7 or 8 grades of industrial spirit, depending on the position of the cut in the distillation range. The grades are defined according to the temperature difference between the 5% volume and 90% volume distillation points (which is not more than 60°C).</p> <p>ii. White spirit: Industrial spirit with a flash point above 30°C. The distillation range of white spirit is 135° to 200°C.</p> <p>Lubricants are hydrocarbons produced from distillate or residue; they are mainly used to reduce friction between bearing surfaces. This category includes all finished grades of lubricating oil, from spindle oil to cylinder oil, and those used in greases, including motor oils and all grades of lubricating oil base stocks.</p> <p>Bitumen is a solid, semi-solid or viscous hydrocarbon with a colloidal structure, being brown to black in colour, obtained as a residue in the distillation of crude oil, by vacuum distillation of oil residues from atmospheric distillation. Bitumen is often referred to as asphalt and is primarily used for construction of roads and for roofing material. This category includes fluidized and cut back bitumen.</p> <p>Paraffin waxes are saturated aliphatic hydrocarbons. These waxes are residues extracted when dewaxing lubricant oils. They have a crystalline structure which is more-or-less fine according to the grade. Their main characteristics are as follows: they are colourless, odourless and translucent, with a melting point above 45°C.</p> <p>Other: All products not specifically mentioned above, for example: tar and sulphur. This category also includes aromatics (e.g. BTX or benzene, toluene and xylene) and olefins (e.g. propylene) produced within refineries.</p>
Total products	TOTPRODS	Sum of refined products.
Crude + NGL + Feedstocks + prods	TOTALOIL	Sum of crude oil, NGL, Refinery feedstocks and refined products.

Flow

Flow	Short name	Definition
Industry stocks	INDUSTRY	Primary stocks held by oil companies, importers, traders and other organisations except those holding government-controlled stocks. They include stocks held by industry to meet IEA, EU and national emergency reserve commitments.
Government stocks	GOVERNMENT	Primary stocks, exclusively for emergency purposes, owned by governments and organisations which have been established to hold stocks (stock holding organisations).
Total stocks	TOTAL	Industry and government-controlled stocks aggregated.

Countries

OECD countries (see the list of countries under CRUDBAL.IVT for a list of long and short names as well as definitions for OECD countries).

Summary table (SUMMARY.IVT)

Structure

This data set contains quarterly and annual supply, demand, stock changes and other selected variables data for secondary oil products for regions in thousand barrels per day (KBD) from 1st quarter 1986 onwards.

Sources

The Monthly Oil Survey carried out by the IEA is the main source for OECD countries. Non-OECD supply data are provided by a variety of sources, including governments and companies.

Dimensions

Time

The data set contains quarterly and annual data from 1st quarter 1986 to the end of the current calendar year. Timeliness of the data varies and most recent data are forecasts.

Geography

Country	Short name	Definition
OECD Americas Demand	AMEDEM	OECD Americas is comprised of Canada, Chile, Mexico and the US.
OECD Europe Demand	EURODEM	OECD Europe is comprised of Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Poland, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey and the UK.
OECD Asia Oceania Demand	AOCDEM	OECD Asia Oceania is comprised of Australia, Israel, Japan, Korea and New Zealand.
TOTAL OECD Demand	OECDDEM	
FSU Demand	FSUDEM	Excludes Estonia and Latvia.
Europe Demand	EASTEURDEM	
China Demand	CHINADEM	
Other Asia Demand	OTHASIADEM	
Non-OECD Americas Demand	LATAMDEM	
Middle East Demand	MIDEASTDEM	
Africa Demand	AFRICADEM	
TOTAL NON-OECD Demand	NOECDDEM	

Country	Short name	Definition
TOTAL Demand	TOTALDEM	Measured as deliveries from refineries and primary stocks. Comprises inland deliveries, international marine bunkers and refinery fuel. It includes crude for direct burning, oil from non-conventional sources and other sources of supply.
OECD Americas Supply	AMESUP	
OECD Europe Supply	EUROSUP	
OECD Asia Oceania Supply	AOCSUP	
TOTAL OECD Supply	OECDSUP	
FSU Supply	FSUSUP	Excludes Estonia and Latvia.
Europe Supply	EASTEURSUP	
China Supply	CHINASUP	
Other Asia Supply	OTHASIASUP	Includes production from Non-OPEC, Non-OECD Other Asia based on current composition, excluding all current OPEC members back through the historical time series and for the forecast. Includes Indonesia.
Non-OECD Americas Supply	LATAMSUP	Includes production from Non-OPEC, Non-OECD Americas based on current composition, excluding all current OPEC members back through the historical time series and for the forecast. Excludes Venezuela. .
Middle East Supply	MIDEASTSUP	
Africa Supply	AFRICASUP	Includes production from Non-OPEC, Non-OECD Africa based on current composition, excluding all current OPEC members back through the historical time series and for the forecast. Excludes Algeria, Angola, Gabon, Libya and Nigeria.
TOTAL NON-OECD SUPPLY	NOECDSUP	Includes production from Non-OPEC, Non-OECD countries based on current composition, excluding all current OPEC members back through the historical time series and for the forecast.
Processing Gains	PROCGAIN	Is the volumetric increase achieved in refinery processes which breakdown large hydrocarbon molecules into smaller ones (for example in the conversion of vacuum gas oils into light products). Refinery and marine transportation losses are subtracted from the estimate of global refinery processing gains to show a net volumetric gain.
Global Biofuels	GLOBIOTOT	Global Biofuels comprise all world biofuel production including fuel ethanol from the US and Brazil.
TOTAL NON-OPEC SUPPLY	NONOPECCUR	Non-OPEC primary total based on its current composition, excluding all current OPEC members back through the historical time series and for the forecast.

Country	Short name	Definition
Non-OPEC Historical Composition	NOPECTOT	Non-OPEC Historical Composition secondary total including all countries not within OPEC membership at the prevailing time in history. Includes Ecuador between 1993 and November 2007 inclusive and from January 2020 onwards, Gabon from 1995 through June 2016, Angola prior to 2007, Equatorial Guinea prior to June 2017, Congo prior to July 2018, Indonesia from 2009 to December 2015 and from December 2016 onwards and Qatar production is excluded through 2018.
OPEC Crude	OPECCRUD	
OPEC NGLs	OPECNGLS	
TOTAL OPEC SUPPLY	OPECCUR	OPEC primary total based on its current composition, namely Angola, Algeria, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, the UAE and Venezuela.
OPEC Historical Composition	OPECTOT	OPEC Historical Composition secondary total including Algeria, Iraq, Iran, Kuwait, Libya, Neutral Zone, Nigeria, Saudi Arabia, the United Arab Emirates and Venezuela. Also, Ecuador production is included through 1992 and from December 2007 to December 2019, Gabon production included through 1994 and from July 2016, Indonesia production is included through 2008 and from January 2016 to November 2016, Angola from 2007 onwards. Equatorial Guinea from June 2017 onwards, Congo from July 2018 onwards and Qatar production is included through 2018.
TOTAL SUPPLY	TOTALSUP	Comprises crude oil, condensates, NGLs, oil from non-conventional sources and other sources of supply.
Industry Stock Changes	STCHINDUS	Stock changes are closing stocks minus opening stocks. Industry stocks are primary stocks owned by oil companies, traders and other organisations except those holding government-controlled stocks. They include stocks held by industry to meet IEA, EU and national emergency reserve commitments.
Government Stock Changes	STCHGOVT	Stock changes are closing stocks minus opening stocks. Government-Controlled Stocks are primary stocks, exclusively for emergency purposes, owned by governments and organisations that have been established to hold stocks (stock-holding organisations).
TOTAL OECD Stock Changes	STCHOECD	Stock changes are closing stocks minus opening stocks.
Floating Storage/Oil in Transit	FLOATSTOR	Changes in floating storage/oil in transit represent estimates of the change in global crude oil stocks in transit at sea between producing and consuming countries or held in moored tankers used for temporary storage.

Country	Short name	Definition
Miscellaneous to balance	MISBAL	Difference between supply and demand, reported OECD stock changes, changes in floating storage. It includes changes in non-reported stocks in OECD and non-OECD areas.
TOTAL STOCK CHANGE & MISC	TOTALSTCH	
Call on OPEC Crude + Stock Ch.	CALLOPECCU	Call on OPEC Crude + Stock Changes equals total demand minus total non-OPEC supply minus OPEC NGLs and thus includes "Miscellaneous to balance" for historical time periods.

Refinery throughputs (ref_throughput.csv and ref_throughput.xlsx)

Structure

This data set contains monthly, quarterly and annual refinery throughputs for total OECD and total non-OECD in thousand barrels per day (KBD) from 1st January 2005 onwards.

Sources

The Monthly Oil Survey carried out by the IEA is the main source for OECD countries. Non-OECD data are provided by a variety of sources, including governments and companies.

Dimensions

Time

The data set contains monthly, quarterly and annual data from January 2005 up to the current MOS month.

Timestamp

This dimension contains the same information as the TIME dimension but in date format.

Frequency

The data set contains monthly, quarterly and yearly data.

Region

The data set contains data for total OECD and total non-OECD.

3. Trade package

Imports and exports (IMPORTS.IVT and EXPORTS.IVT)

The trade package contains detailed information on trade between OECD countries as well as trade between OECD countries and the rest of the world. There are two files in this package with identical detail (except for differences in the country lists).

Structure

The data sets on imports and exports contain monthly data on primary and secondary oil products to OECD countries by country in thousand metric tons from 2005 to latest MOS month. Crude oil and NGLs are reported as country of ultimate origin whereas refinery feedstocks and finished products are reported as coming from the country of last consignment.

Historical data from 1984 to 2004 are available with the same dimensions in HIMPORTS.IVT and HEXPORTS.IVT.

Sources

The source of the data is the Monthly Oil Survey (MOS) carried out by the IEA.

Dimensions

Time

The data set contains monthly data from January 2005 up to the current MOS month.

Products

Product	Short name	Definition
Crude oil	CRUDEOIL	Crude oil is a mineral oil of natural origin comprising a mixture of hydrocarbons and associated impurities, such as sulphur. It exists in the liquid phase under normal surface temperature and pressure and its physical characteristics (density, viscosity, etc.) are highly variable. This category includes field or lease condensate recovered from associated and non-associated gas where it is commingled with the commercial crude oil stream.
Natural gas liquids	NGL	NGL are liquid or liquefied hydrocarbons recovered from natural gas in separation facilities or gas processing plants. Natural gas liquids include ethane, propane, butane (normal and iso-), (iso) pentane and pentanes plus (sometimes referred to as natural gasoline or plant condensate). For OPEC countries, field condensates are usually included with NGL rather than crude oil.

Product	Short name	Definition
Refinery feedstocks	REFFEEDS	A refinery feedstock is a processed oil destined for further processing (e.g. straight run fuel oil or vacuum gas oil) excluding blending. With further processing, it will be transformed into one or more components and/or finished products. This definition also covers returns from the petrochemical industry to the refining industry (e.g. pyrolysis gasoline, C4 fractions, gasoil and fuel oil fractions).
Additives/oxygenates	ADDITIVE	Additives and oxygenates are non-hydrocarbon compounds added to or blended with a product to modify fuel properties (octane, cetane, cold properties, etc.) e.g. alcohols (methanol, ethanol), ethers (such as MTBE (methyl tertiary butyl ether), ETBE (ethyl tertiary butyl ether), TAME (tertiary amyl methyl ether) or esters(e.g. rapeseed or dimethylester, etc.). Additives include chemical compounds (such as TML (tetramethyl lead) or TEL (tetraethyl lead)) and detergents.
Other hydrocarbons	NONCRUDE	This category includes synthetic crude oil from tar sands, shale oil, etc., liquids from coal liquefaction, hydrogen and emulsified oils (e.g. Orimulsion).
Crude + NGL + Feedstocks	CRNGFEED	Sum of Crude oil, NGL, Refinery feedstocks, Additives/oxygenates and Other hydrocarbons.
Refinery gas	REFINGAS	Refinery gas includes a mixture of non-condensed gases mainly consisting of hydrogen, methane, ethane and olefins obtained during distillation of crude oil or treatment of oil products (e.g. cracking) in refineries. This also includes gases which are returned from the petrochemical industry.
Ethane	ETHANE	A naturally gaseous straight-chain hydrocarbon (C ₂ H ₆), extracted from natural gas and refinery gas streams.
Liquefied petroleum gases	LPG	LPG are light saturated paraffinic hydrocarbons derived from the refinery processes, crude oil stabilisation and natural gas processing plants. They consist mainly of propane (C ₃ H ₈) and butane (C ₄ H ₁₀) or a combination of the two. They are normally liquefied under pressure for transportation and storage.
Naphtha	NAPHTHA	Naphtha is a feedstock destined for either the petrochemical industry (e.g. ethylene manufacture or aromatics production) or for gasoline production by reforming or isomerisation within the refinery. Naphtha comprises material in the 30°C and 210°C distillation range or part of this range.
Motor gasoline	MOTORGAS	Motor gasoline consists of a mixture of light hydrocarbons distilling between 35°C and 215°C. It is used as a fuel for land based spark ignition engines. Motor gasoline may include additives, oxygenates and octane enhancers, including lead compounds such as TEL (tetraethyl lead) and TML (tetramethyl lead). This category includes motor gasoline blending components (excluding additives/oxygenates), e.g. alkylates, isomate, reformat, cracked gasoline destined for use as finished motor gasoline.

Product	Short name	Definition
Aviation gasoline	AVGAS	This is motor spirit prepared especially for aviation piston engines, with an octane number suited to the engine, a freezing point of -60°C and a distillation range usually within the limits of 30°C and 180°C.
Gasoline type jet fuel	JETGAS	This includes all light hydrocarbon oils for use in aviation turbine power units, distilling between 100°C and 250°C. They are obtained by blending kerosenes and gasolines or naphthas in such a way that the aromatic content does not exceed 25% in volume, and the vapour pressure is between 13.7kPa and 20.6kPa.
Kerosene type jet fuel	JETKERO	This is a distillate used for aviation turbine power units. It has the same distillation characteristics between 150°C and 300°C (generally not above 250°C) and flash point as kerosene. In addition, it has particular specifications (such as freezing point) which are established by the International Air Transport Association (IATA).
Other kerosene	OTHKERO	Kerosene comprises refined petroleum distillate and is used in sectors other than aircraft transport. It distils between 150°C and 300°C.
Gas/diesel oil	GASDIES	Gas/diesel oil is primarily a medium distillate, distilling between 180°C and 380°C. Several grades are available depending on uses: - diesel oil for diesel compression ignition (cars, trucks, marine etc.); - light heating oil for industrial and commercial uses; - other gas oil including heavy gas oils which distil between 380°C and 540°C and which are used as petrochemical feedstocks.
Fuel oil (residual)	RESFUEL	This covers all residual (heavy) fuel oils (including those obtained by blending). Kinematic viscosity is above 10cSt at 80°C. The flash point is always above 50°C and density is always more than 0.90 kg/l.
Petroleum coke	PETCOKE	Petroleum coke is a black solid residue, obtained mainly by cracking and carbonising residue feedstock, tar and pitches in processes such as delayed coking or fluid coking. It consists mainly of carbon (90 to 95%) and has a low ash content. It is used as a feedstock in coke ovens for the steel industry, for heating purposes, for electrode manufacture and for production of chemicals. The two most important qualities are "green coke" and "calcinated coke". This category also includes "catalyst coke" deposited on the catalyst during refining processes; this coke is not recoverable and is usually burned as refinery fuel.

Product	Short name	Definition
Other products	OPRODS	<p>Other products include the following:</p> <p>White spirit and SBP are defined as refined distillate intermediates with a distillation in the naphtha/kerosene range. They are sub-divided as:</p> <p>i. Industrial spirit (SBP): Light oils distilling between 30° and 200°C. There are 7 or 8 grades of industrial spirit, depending on the position of the cut in the distillation range. The grades are defined according to the temperature difference between the 5% volume and 90% volume distillation points (which is not more than 60°C).</p> <p>ii. White spirit: Industrial spirit with a flash point above 30°C. The distillation range of white spirit is 135° to 200°C.</p> <p>Lubricants are hydrocarbons produced from distillate or residue; they are mainly used to reduce friction between bearing surfaces. This category includes all finished grades of lubricating oil, from spindle oil to cylinder oil, and those used in greases, including motor oils and all grades of lubricating oil base stocks.</p> <p>Bitumen is a solid, semi-solid or viscous hydrocarbon with a colloidal structure, being brown to black in colour, obtained as a residue in the distillation of crude oil, by vacuum distillation of oil residues from atmospheric distillation. Bitumen is often referred to as asphalt and is primarily used for construction of roads and for roofing material. This category includes fluidized and cut back bitumen.</p> <p>Paraffin waxes are saturated aliphatic hydrocarbons. These waxes are residues extracted when dewaxing lubricant oils. They have a crystalline structure which is more-or-less fine according to the grade. Their main characteristics are as follows: they are colourless, odourless and translucent, with a melting point above 45°C.</p> <p>Other: All products not specifically mentioned above, for example: tar and sulphur. This category also includes aromatics (e.g. BTX or benzene, toluene and xylene) and olefins (e.g. propylene) produced within refineries.</p>
Total products	TOTPRODS	Sum of refined products.
Crude + NGL + Feedstocks + Prods	TOTALOIL	Sum of Crude oil, NGL, Refinery feedstocks and refined products.

Countries

OECD countries (see the list of countries under CRUDBAL.IVT for a list of long and short names as well as definitions for OECD countries).

Imports and Exports

Imports/exports	Short name	Imports/exports	Definition
Australia	AUSTRALI	Both	
Austria	AUSTRIA	Both	
Belgium	BELGIUM	Both	

Imports/exports	Short name	Imports/exports	Definition
Canada	CANADA	Both	
Chile	CHILE	Both	
Czech Republic	CZECH	Both	
Denmark	DENMARK	Both	
Estonia	ESTONIA	Both	
Finland	FINLAND	Both	
France	FRANCE	Both	
Germany	GERMANY	Both	
Greece	GREECE	Both	
Hungary	HUNGARY	Both	
Iceland	ICELAND	Both	
Ireland	IRELAND	Both	
Israel	ISRAEL	Both	
Italy	ITALY	Both	
Japan	JAPAN	Both	
Korea	KOREA	Both	
Latvia	LATVIA	Both	
Lithuania	LITHUANIA	Both	
Luxembourg	LUXEMBOU	Both	
Mexico	MEXICO	Both	
Netherlands	NETHLAND	Both	
New Zealand	NZ	Both	
Norway	NORWAY	Both	
Poland	POLAND	Both	
Portugal	PORTUGAL	Both	
Slovak Republic	SLOVAKIA	Both	
Slovenia	SLOVENIA	Both	
Spain	SPAIN	Both	
Sweden	SWEDEN	Both	
Switzerland	SWITLAND	Both	
Turkey	TURKEY	Both	
United Kingdom	UK	Both	
United States	USA	Both	

Imports/exports	Short name	Imports/exports	Definition
Total OECD	TOTOECD	Both	Includes Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States.
Algeria	ALGERIA	Both	
Angola	ANGOLA	IMPORTS	
Congo	CONGO	IMPORTS	
Equatorial Guinea	EQGUINEA	IMPORTS	
Gabon	GABON	IMPORTS	
Iran	IRAN	Both	
Iraq	IRAQ	Both	
Kuwait	KUWAIT	IMPORTS	
Libya	LIBYA	Both	
Nigeria	NIGERIA	Both	
Neutral Zone	NEUTRALZON	IMPORTS	
Saudi Arabia	SAUDIARABI	Both	
United Arab Emirates	UAE	IMPORTS	
Venezuela	VENEZUELA	IMPORTS	
Total OPEC	TOTOPEC	IMPORTS	Algeria, Angola, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, the UAE and Venezuela
Argentina	ARGENTINA	Both	
Bahamas	BAHAMAS	IMPORTS	
Brazil	BRAZIL	Both	
Colombia	COLOMBIA	Both	
Ecuador	ECUADOR	IMPORTS	
Netherlands Antilles	CURACAO	Both	

Imports/exports	Short name	Imports/exports	Definition
Peru	PERU	IMPORTS	
Trinidad and Tobago	TRINIDAD	Both	
Venezuela	VENEZUELA	EXPORTS	
Other Non-OECD Americas	OTHERLATIN	EXPORTS	Includes Antigua and Barbuda, Bahamas, Barbados, Belize, Bermuda, Bolivia, Cayman Islands, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Falkland Islands (Malvinas), Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Pierre and Miquelon, Saint Vincent and the Grenadines, Suriname, Turks and Caicos Islands, Uruguay.
Other Non-OECD Americas	OTHERLATIN	IMPORTS	Includes Antigua and Barbuda, Barbados, Belize, Bermuda, Bolivia, Cayman Islands, Costa Rica, Cuba, Dominica, Dominican Republic, El Salvador, Falkland Islands (Malvinas), Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Saint Kitts and Nevis, Saint Lucia, Saint Pierre and Miquelon, Saint Vincent and the Grenadines, Suriname, Turks and Caicos Islands, Uruguay.
Bulgaria	BULGARIA	Both	
Romania	ROMANIA	Both	
Total Former Soviet Union	FSU	Both	Before 1990, Former Soviet Union (if no detail) includes Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan. After 1990, Estonian, Latvian and Lithuanian data are available as a part of OECD total.
Azerbaijan	AZERBAIJAN	Both	

Imports/exports	Short name	Imports/exports	Definition
Belarus	BELARUS	Both	
Georgia	GEORGIA	IMPORTS	
Kazakhstan	KAZAKHSTAN	IMPORTS	
Moldova	MOLDOVA	Both	
Russian Federation	RUSSIA	Both	
Ukraine	UKRAINE	Both	
Other Former USSR	OTHFUSSR	EXPORTS	Includes Armenia, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and non-specified former FSU.
Other Former USSR	OTHFUSSR	IMPORTS	Includes Armenia, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and non-specified former FSU.
Bosnia and Herzegovina	BOSNIAHERZ	Both	
Croatia	CROATIA	Both	
North Macedonia	NORTHMACED	Both	
Montenegro	MONTENEGRO	Both	
Serbia	SERBIA	Both	
Other Former Yugoslavia (if no detail)	FORMERYUGO	Both	
Other Europe	OTHEREUROP	Both	Includes Albania, Cyprus ² , Gibraltar and Malta.
Lebanon	LEBANON	EXPORTS	
Qatar	QATAR	Both	
Syrian Arab Republic	SYRIA	EXPORTS	
Other Near/Middle East	OTHERNEARM	EXPORTS	Includes Bahrain, Jordan, Oman, United Arab Emirates, Yemen, former Neutral Zone

2. Note by Turkey: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of United Nations, Turkey shall preserve its position concerning the "Cyprus issue". Note by all the European Union Member States of the OECD and the European Union: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Imports/exports	Short name	Imports/exports	Definition
Other Near/Middle East	OTHERNEARM	IMPORTS	Includes Jordan and Lebanon
Bahrain	BAHRAIN	IMPORTS	
Yemen	YEMEN	IMPORTS	
Oman	OMAN	IMPORTS	
Syrian Arab Republic	SYRIA	IMPORTS	
Other Near/Middle East	OTHERNEARM	IMPORTS	
Brunei Darussalam	BRUNEI	IMPORTS	
China (People's Republic of)	CHINA	Both	
Hong Kong, China	HONGKONG	Both	
India	INDIA	Both	
Indonesia	INDONESIA	Both	
Malaysia	MALAYSIA	Both	
Pakistan	PAKISTAN	EXPORTS	
Philippines	PHILIPPINE	EXPORTS	
Papua New Guinea	PAPUANEWGU	IMPORTS	
Singapore	SINGAPORE	Both	
Chinese Taipei	TAIPEI	EXPORTS	
Thailand	THAILAND	EXPORTS	
Viet Nam	VIETNAM	Both	
Other Asia	OTHERASIA	EXPORTS	Includes Afghanistan, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, Democratic People's republic of Korea, Fiji, Kiribati, Lao People's Democratic Republic, Macau (China), Maldives, Mongolia, Myanmar, Nauru, Nepal, Palau, Papua New Guinea, Samoa, Solomon Islands, Sri Lanka, Tonga, Tuvalu and Vanuatu.

Imports/exports	Short name	Imports/exports	Definition
Other Asia	OTHERASIA	IMPORTS	Includes Afghanistan, Bangladesh, Bhutan, Cambodia, Democratic People's Republic of Korea, Fiji, Kiribati, Lao People's Democratic Republic, Macau (China), Maldives, Mongolia, Myanmar, Nauru, Nepal, Pakistan, Palau, Philippines, Samoa, Solomon Islands, Sri Lanka, Chinese Taipei, Thailand, Tonga, Tuvalu and Vanuatu.
Cameroon	CAMEROON	IMPORTS	
Democratic Republic of the Congo	CONGOREP	IMPORTS	
Egypt	EGYPT	Both	
South Africa	SOUTHAFRIC	EXPORTS	
Tunisia	TUNISIA	Both	
Other Africa	OTHERAFRIC	EXPORTS	Includes Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cabo Verde, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Rwanda, Saint Helena, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, Sudan, South Sudan, Tanzania, Togo, Uganda, Zambia and Zimbabwe.

Imports/exports	Short name	Imports/exports	Definition
Other Africa	OTHERAFRIC	IMPORTS	Includes Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Central African Republic, Chad, Comoros, Côte d'Ivoire, Djibouti, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Rwanda, Saint Helena, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Lesotho, Swaziland, Sudan, South Sudan, Tanzania, Togo, Uganda, Zambia and Zimbabwe.
Not elsewhere specified	NONSPEC	Both	Includes non-specified origins.
Total exports	TOTEXPST	EXPORTS	
Total imports	TOTIMPST	IMPORTS	

4. Field by field package

Field by field (field_by_field.csv and field_by_field.xlsx)

Structure

The field by field database contains monthly, quarterly and annual production data, starting in 1994, with forecasts for oil fields covering the total world oil production. Where data on a field level basis is unavailable, balancing items (signalled by OTHER or MISCBAL) will be used. Every field has an associated country and product. For every product the country production is equal to the sum of all its fields.

Dimensions

Time

The data set contains monthly, quarterly and annual data from January 1994 to the end of the current calendar year. Timeliness of the data varies and most recent data are forecasts.

Frequency

The data set contains monthly, quarterly and yearly data.

Timestamp

This dimension contains the same information as the TIME dimension but in date format.

Products

Product	Short name	Definition
Crude oil	CRUDE	Crude oil is a mineral oil of natural origin comprising a mixture of hydrocarbons and associated impurities, such as sulphur. It exists in the liquid phase under normal surface temperature and pressure and its physical characteristics (density, viscosity, etc.) are highly variable. This category includes field or lease condensate recovered from associated and non-associated gas where it is commingled with the commercial crude oil stream.

Product	Short name	Definition
Condensate	COND	Condensates are liquid hydrocarbon mixtures composed of C5 and higher carbon number hydrocarbons, normally recovered from fractionation of gaseous flows at associated and non-associated gas field. They normally have an API between 50° and 85°. They are included in crude for non-OPEC countries, and in NGLS for OPEC countries.
Natural gas liquids	NGLS	NGL are liquid or liquefied hydrocarbons recovered from natural gas in separation facilities or gas processing plants. Natural gas liquids include ethane, propane, butane (normal and iso-). For OPEC countries, condensates are included with NGL rather than crude oil.
Nonconventional oils	NONCONV	This category includes synthetic crude oil from tar sands, oil shale, etc., liquids from coal liquefaction, liquids from gas to liquids processes, hydrogen and emulsified oils (e.g. orimulsion), refinery additives and MTBE.
Total	TOTAL	The sum of crude oil, NGLs and non-conventional oils.

Country

The list of all the country is available in the 'country_details.csv' file in the field_by_field.csv.zip archive. For each country you will find the following information:

- COUNTRY_CODE: The country code as used in the database
- COUNTRY_NAME: A long name for the country
- ISO_ALPHA_2: The ISO alpha 2 code
- ISO_ALPHA_3: The ISO alpha 3 code

Fields

The list of all the field country is available in the 'field_details.csv' file in the field_by_field.csv.zip archive. For each field you will find the following information:

- FIELD_CODE: The field code as used in the database
- FIELD_NAME: A long name for the field
- COUNTRY: The code of the country to which the field is associated
- GROUP_CODE: Each can belong to a group which can be a basin, a system or other. This is the code of the group to which the field belongs. The default value is NONSPEC.
- GROUP_NAME: A long name for the group to which the field belongs.
- PRODUCT: The code of the product to which the field is associated
- ENVIRONMENT: The environment of the field (Onshore, Offshore or NonSpec)

5. UNITS AND CONVERSIONS

Average conversion factors

	Bbls/metric ton
LPG	11.60
Ethane	16.85
Naphtha	8.50
Gasoline	8.53
Kerosene	7.88
Kerosene and type jet fuel	7.93
Gas/diesel oil	7.46
Residual fuel oil	6.66
Other products	8.00

General conversion factors for energy

To	TJ	Gcal	Mtoe	MBtu	GWh
From	multiply by				
Terajoule (TJ)	1	2.388×10^2	2.388×10^{-5}	9.478×10^2	2.778×10^{-1}
Gigacalorie (Gcal)	4.187×10^{-3}	1	1.000×10^{-7}	3.968	1.163×10^{-3}
Million tonnes of oil equivalent (Mtoe)	4.187×10^4	1.000×10^7	1	3.968×10^7	1.163×10^4
Million British thermal units (MBtu)	1.055×10^{-3}	2.520×10^{-1}	2.520×10^{-8}	1	2.931×10^{-4}
Gigawatt hour (GWh)	3.600	8.598×10^2	8.598×10^{-5}	3.412×10^3	1

Conversion factors for mass

To	kg	t	lt	st	lb
From	multiply by				
Kilogramme (kg)	1	1.000×10^{-3}	9.842×10^{-4}	1.102×10^{-3}	2.205
Tonne (t)	1.000×10^3	1	9.842×10^{-1}	1.102	2.205×10^3
Long ton (lt)	1.016×10^3	1.016	1	1.120	2.240×10^3
Short ton (st)	9.072×10^2	9.072×10^{-1}	8.929×10^{-1}	1	2.000×10^3
Pound (lb)	4.536×10^{-1}	4.536×10^{-4}	4.464×10^{-4}	5.000×10^{-4}	1

Conversion factors for volume

To	gal U.S.	gal U.K.	bbl	ft ³	l	m ³
From	multiply by					
U.S. gallon (gal U.S.)	1	8.327×10^{-1}	2.381×10^{-2}	1.337×10^{-1}	3.785	3.785×10^{-3}
U.K. gallon (gal U.K.)	1.201	1	2.859×10^{-2}	1.605×10^{-1}	4.546	4.546×10^{-3}
Barrel (bbl)	4.200×10^1	3.497×10^1	1	5.615	1.590×10^2	1.590×10^{-1}
Cubic foot (ft³)	7.481	6.229	1.781×10^{-1}	1	2.832×10^1	2.832×10^{-2}
Litre (l)	2.642×10^{-1}	2.200×10^{-1}	6.290×10^{-3}	3.531×10^{-2}	1	1.000×10^{-3}
Cubic metre (m³)	2.642×10^2	2.200×10^2	6.290	3.531×10^1	1.000×10^3	1