HANSE OIL Glossary of Petroleum Refinery Terms

Absorber
A vessel in which gases and vapours contact a fluid which absorbs and retains them. The absorbing fluid is sprayed from the top of the tower or vessel to increase surface area to increase efficiency.

Acid number
The number of milligrams of potassium hydroxide necessary to neutralise (pH7) 1 gram of oil

Acid Tar
The organic residue in acid sludge. Acid sludge is composed of acid and tar

Acid Treatment
Products such as petrol, kerosene, diesel fuel and lubricating oil are contacted with sulphuric acid to improve colour, odour and other properties

Accumulator
A vessel for the temporary storage of gas or liquid. Used for collecting sufficient material for a continuous charge to a refining process

Additive
A chemical which in small quantities improves the quality

Afterburning
The combustion of carbon monoxide or entrained coke particles in the coker burner or catalytic cracking unit regenerator

Agitator
Tank with a cone bottom used for mixing several liquids by blowing with air; also by a rotating paddle in a kettle.

Air Blowing
Forcing compressed air through a tank or line to mix, treat or purge / clear material from the line.

Air Fin Coolers
A radiator like device to cool or condense hot fluids. The tubes containing hot fluid have fins fastened to the outside surface over which air is blown by motor driven fans.

Alicyclic Hydrocarbons
Hydrocarbons which contain a ring of carbon atoms but do not belong to the aromatic series

Aliphatic Hydrocarbons
Hydrocarbons of open chain structure such as ethane, propane, acetylene
Alkylate
A product from the alkylation process

Alkylation
Formation of a complex saturated hydrocarbon molecule by direct union of an unsaturated and unsaturated molecule. In the petroleum industry, it is the union of olefins and paraffins, in particular the union of butylenes C4.H8 and isobutane C4.H10 using sulphuric acid or hydrofluoric acid or phosphoric acid to produce a liquid of high octane number known as 'alkylate' C8.H18

Anti-knock Value
A term use to describe Octane Number

Antioxidant (Inhibitor)
A chemical used to prevent gum formation of gasoline during storage

Aromatic
Hydrocarbons which contain one or more benzene rings

Asphalt
The black to dark-brown solid or semisolid material used for making roads in which the predominant material is bitumen.

Asphaltenes
The components of the bitumen in petroleum, petroleum products, asphalt cements, and solid native bitumens, which are soluble in carbon disulphide, but insoluble in paraffin naphthas

ASTM Distillation
A laboratory distillation procedure according to the method prescribed by the American Society of Testing Materials

ASTM End Point
The end point of a laboratory distillation as determined by the method prescribed by the American Society of Testing Materials. Actually, this is the maximum temperature as shown on the thermometer at the end of the distillation.

ASTM Octane Number
The octane number is obtained on a specifically designed ASTM engine. It correlates well with the performance of gasoline fuels in an engine operating at high speeds

Atmospheric Tower or Still
A distillation unit run at atmospheric pressure

Aviation Gasoline
High octane gasoline used in aircraft.
Ball Valve
A 90 degree turn isolating valve consisting of a hollow ball in a spherical housing. These valves are good for quick shutoff and are more ergonomic than gate valves.

Barrel
The standard unit of liquid volume for oil in the petroleum industry, equal to 42 US gallons, 34.97 Imperial gallons or 159 litres.

Base Stock
The primary petroleum fraction from which a specification product is blended.

Benzene
The basic compound of the aromatic series

Bleeding
Process of drawing small amounts of liquid, particularly water, from a vessel, tank or line.

Blend
Any mixture made up for special purpose; the products of a refinery are usually blended to suit market and specification requirements.

Blowdown
The process of removing hydrocarbon liquid or vapours from a process unit on an emergency or scheduled shutdown basis through special piping and vessels (drums) provided for this purpose.

Blowing
Agitating a liquid by the introduction of air near the bottom of the tank or container. In ‘blowing bright’ the air assist in carrying off moisture, whereas in acid treating, the air is used only for agitation.

Boiling Range
The range of temperatures usually determined at atmospheric pressure in standard laboratory apparatus, over which the boiling or distillation of oils or fuel commences, proceeds and finishes. Petroleum products are not single substances but a mixture.

So a product or process stream will have an initial and final boiling point temperature.

Boom
A floating device used to catch or contain oil floating on water

Bottoms
Any residue remaining in the distillation unit after the highest boiling material has been removed.

(Also liquid which collects in the bottom of tanks – tank bottoms)

Bunker Fuel
A fuel oil used for ships.
**Carbon Number**
The number of carbon atoms in the molecules of the components of a hydrocarbon fuel e.g. petrol has C5 to C12’s.

**Catalyst**
A substance which promotes chemical reaction without undergoing chemical change itself. Often a catalyst offers a large site surface area for chemical reaction to occur.

**Catalytic Cracking**
A refinery process whereby the breaking up of the molecules of heavy oil fractions into shorter and lighter fractions and is accomplished by the use of heat and earth catalyst. The catalyst is usually an inert material such as alumino silicate, zeolites.

**Caustic Wash**
The process in which a hydrocarbon stream is treated with an aqueous solution of sodium hydroxide to remove acidic components usually those contributing to poor odour or stability. Used to remove corrosive acidic components from alkylation process reaction.

**Cetane number**
A means of expressing the ignition quality of diesel fuel. It equals the % of cetane in a mix of cetane and methyl naphthalene which has the same ignition quality compared to the fuel under test.

**CFR Octane Number**
The octane number obtained on a special engine (‘knock-engine’) developed by the Co-operative Fuel Research (CFR) Committee. It is used to determine the knock tendency of gasolines. It correlates with the performance of an engine operating at low speeds.

**Check Valve**
A device for permitting flow in one direction in a pipeline. Sometimes called a ‘non return’ valve.

**Clad Lining**
A bonded or welded lining on a carbon steel base to avoid corrosion. Stainless Steel hot roll cladding is the most common.

**Clarified Oil**
The heavy oil which has been taken from the fractionator in a catalytic cracking process, and which has had the residual catalyst removed in a mechanical thickener.

**Cold Work Permit**
A permit issued by a responsible representative permitting mechanical work of a non-sparking nature in a given process area. The equipment used in this work should be explosion-proof or non-sparking.

**Coke, Petroleum**
The residue obtained on the dry distillation of batch distillation of petroleum. Its composition is 90%-95% fixed carbon (0.5%-1% Sulphur). On account of its purity, this coke is much used in metallurgical processes and in making battery carbons and carbon pencils.
Coking
1. The process of distilling petroleum products to dryness. The petroleum contains complex hydrocarbons that break down during distillation. With the production of lighter distillable hydrocarbons, an appreciable deposit of carbon or coke is formed and settles to the bottom of the still.
2. Unwanted build-up of carbon coke in a refinery process

Compressor
A high tolerance pump which draws in air or other gases and compresses it to discharge at a higher pressure.

Cone Roof Tank
A fixed roof tank coned from the centre to shed rain water.

Condensate
Vapour liquefied by cooling is called condensate in the liquid phase

Control Valve
A variable opening valve used with control instrumentation to maintain flow rate, temperature, pressure or level in a vessel or piping system.

Cracked Petrol (or Gasoline)
Petrol or gasoline blendstock obtained by cracking heavier oils

Cracking
The process of breaking heavy petroleum molecules into lighter fractions such as gas and gasoline by using heat and pressure and/or a catalyst.

Crude Assay
True boiling point distillation and other quality information on a crude including elements such as Nitrogen, Sulphur, Mercury, Vanadium.

Cut-back Products (Cutback Bitumen)
Petroleum or tar residuals which have been fluxed or diluted, each with its own or similar distillates.

Cut Point
The boiling temperature division between different fractions or cuts of crude or feed stock

Cycle Gas Oil
Cracked gas oil which is generated in a cracker and is recycled. It can be a heavy fraction or light fraction.

 Cyclone
A conical vessel provided with the inlet at a tangent or at an angle to remove solids from a gas or vapour stream. The section at the bottom is called the leg and this is where the solids are funneled out. The lighter vapour or gas exits the vessel at the top of the cyclone.
Deactivation
The reduction in catalyst activity by coating of catalyst particles by contaminants, or a change in the physical structure of the catalyst particles.

Deasphalting
A process for removing asphalt from reduced crude which utilises the widely different solubilities of non-asphaltic compounds in liquid propane. Also known as ‘Propane Deasphalting’

Debutanizer
A fractionating tower or column used to remove the butane from a mixture of hydrocarbons in a process stream

De Ethanizer
A fractionating tower or column used to remove ethane from a mixture of hydrocarbons in a process stream

Defoamer
A substance which is added to a liquid to remove, prevent or slow the formation of foam.

Dehydrogenation
A refining process which converts the lower hydrocarbons namely ethane, propane and butane into the corresponding olefines namely ethylene, propylene and butenes

Depentanizer
A fractionating tower or column used to remove the pentanes and lighter fractions from a process stream

Depropanizer
A fractionating tower or column used to remove the propane from a mixture of hydrocarbons in a process stream

Desalting
Removal of salts (Calcium chloride, magnesium chloride sodium chloride) from crude oil using mainly electrical field technology

Desulphurisation
A process which removes sulphur or sulphur compounds from petroleum products. Hydrogen is the most common reacting gas. This is usually by means of chemical treatment.

Dip Leg
The vertical pipe or leg at the bottom of the cyclone which forms a seal by dipping into the catalyst bed and seal to reduce vapours causing by passing.

Distillate
A distillation product such as petrol, kerosene, and diesel. Sometime diesel is called distillate as well.
Doctor Solution
A solution used to free gasoline, kerosene and other petroleum products from sulphur. It is usually an alkaline solution of sodium Plumbite and free sulphur.

Doctor Treating Process
A sweetening process for petroleum distillates using Plumbite solution and free sulphur whereby mercaptans are oxidised to disulphides.

Draw Off
The column side streams come from a draw off pan or tray inside the column where liquid has condensed.

Drum
A cylindrical metal container used for the shipment or storage of petroleum products under pressure.

Blowdown Drum
A vessel used to confine discharges of liquid or vapour from process equipment. The discharges usually occur during the time when the normal process system is in some way interrupted such as during an emergency or unit upset.

Disengaging Drum (Knock Out Drum)
A vessel used for rapid separation of gas from liquid, or liquid from liquid. Different for ‘settler’ on account of low residence time required for separation.

Flash Drum
A primary separator which permits the oil stream to vapourise or ‘flash’. The operating pressure of the drum is lower than the incoming oil, thus allowing the lighter fractions of the oil to vapourise and separate from the heavier constituents.

Ejector
A device utilizing the flow of gas or vapour to create a vacuum. Stream is a common ejector vapour.

End Point
The highest temperature in the distillation range for a product or hydrocarbon fraction

Exchanger
A vessel designed to exchange heat between two process streams at different temperatures

Explosive Limits
The limit of for a mix of air and a fuel within which an exposure or ignition will occur.

There is an upper limit (UEL), and the more critical for safety measure lower limit (LEL)

Extraction
The process of separating a material by means of a solvent into a fraction soluble in the solvent (extract) and an insoluble residue.
Flame Arrestor
A device in a pipe line or attached to a vessel or tank which stops the progression of flame or a spark. Usually made of a metal mesh which quenches the flame.

Flare
A stack or furnace for disposing of gas or vapour by burning.

Flash Point
The lowest temperature at which a petroleum product vaporises rapidly enough to form above the liquid a vapour mix which will ignite by a small flame. When a product is at it flash point, it is also at the LEL.

Feed Stock
Crude oil or a fraction to be charged into any process unit.

Fixed Bed
A type of cracking operation in which the catalyst remains stationary. It is normally regenerated periodically.

Flare

Ground Flare
Is a furnace for burning excess refinery gases during periods of emergency or sudden gas /vapour release. Complete combustion with no smoke is the design feature of a ground level flare.

Elevated Flare
A relatively tall flare for burning excess refinery gases. Height of the flares are in the range of 30-100m (100-330 ft.). A blue flame indicates the presence of hydrogen sulphide a yellow smokey flame indicated the presence of aromatics.

Flash Point
The lowest temperature at which under specified conditions, a petroleum product vapourises rapidly enough to form above its surface an air and vapour mixture which gives a flash or slight explosion when ignited with a small flame.

Floating Roof
A petroleum storage tank roof which floats on the surface of the oil or fuel thereby eliminating breathing and evaporation losses as well as creating a safer tank storage system.

Fluid Catalytic Cracker
A cracking process making use of finely powdered catalyst which when mixed with a moving stream of oil vapour, assumes many properties of a liquid.

Foot Valve
The check valve located at the inlet end of the suction pipe to a pump which enables the pump to remain full of liquid when not in operation.
**Fouling**
Accumulation of deposits in condensers, heat exchangers, etc.

**Fraction**
A product or cur from a distillation column having a restricted boiling range.

**Fractionator**
A tower or column arranged to separate various fractions by single distillation. Condenser or heat exchangers are taped off at different points along its length to separate the fractions based on the condensing temperature of the fraction required.

**Gas Test**
A measurement made with an instrument called a gas tester to detect unsafe levels of gas or vapour in a work place.

**Gate Valve**
A valve with a sliding disc which can be opened to full line diameter or completely shut to stop the flow of fluid or gas. The spindle of a petroleum gate valve usually rises with the disc an indicates whether the valve is open or closed.

**Gauging Hatch**
A hinged man head on the roof of a tank which can be opened to use a tape to measure the depth of liquid or take a sample of the product in the tank.

**Girbotol**
The name of a process for removing hydrogen sulphide, carbon dioxide and/or other gases from petroleum gases and liquids.

**Gland**
Part of a valve or rotating shaft system which prevents leakage. Comprises packing and what sometimes is referred to as a stuffing box.

**Grounding or Earthing**
Cable connection to a fixture at earth potential. An earthing rod is often used as the grounding fixture.

**Gunite**
A trade name for a process which sprays concrete on a steel mesh support to line tanks and drums or to fireproof structures.

**Hamer Line Blind**
A spectacle type blank device which operates similar to a valve to allow line blank isolation.
n-Heptane
A seven carbon straight chain hydrocarbon with an octane rating of zero. It is a reference fuel when testing the octane rating of petrol. Iso-Octane (2,2,4 Tri Methyl Pentane) is a highly branched eight carbon straight chain hydrocarbon and is a reference fuel when testing the octane rating of petrol – Iso-Octane has an octane rating of 100.

High Level Alarm
An instrument device which will actuate an alarm usually visual and audible when the liquid level in the vessel exceeds the set level. It maybe a safe fill or operating level.

Hot Work Permit
A permit to work when using equipment which generates heat and sparks examples of hot work are welding, grinding, using an electric drill.

Hydro Desulphuriser
The removal of sulphur from a material by reacting the sulphur with hydrogen to form hydrogen sulphide. The hydrogen is a by product of a process unit called a platformer or reformer.

Hydrogen Sulphide
A poisonous gas found in upstream and when refining crude oil. Sour crude contains high levels of hydrogen sulphide. Commonly referred to as H₂S.

Isotopes
Radioactive elements such as uranium 235 and 238. Generally radioactive isotopes are used in the refinery for level gauging. Ionising radiation exposure is possible if systems are not maintained.

Isomerization
The chemical conversion of one hydrocarbon into another hydrocarbon of the same molecular weight and with the same hydrogen-carbon ratio.

Iso-Octane
The popular name for 2, 2, 4 trimethyl pentane. This hydrocarbon has excellent anti-knock characteristics and the octane numbers assigned to gasolines is based upon a value of 100. Hence the octane scale has n-Heptane as zero and Iso-octane as 100.

Jump-over
A piping connection made between pipe lines to allow redirection of process streams. Jump-overs are valved to facilitate redirection for blending or different processing.

Knockout Drum
A vessel in which suspended liquid is separated from a gas or vapour stream.

Knock Rating
A common expression used for octane number or octane rating.
Lagging or Insulation
Material used to insulate piping or equipment to reduce heat loss or to protect workers from skin burns.

Leaded Fuel
Gasoline containing tetra ethyl lead (TEL) (and sometimes also tetra methyl lead (TML)

Lean Oil
The stripped solvent in the operation of an absorption tower. The solvent is fed into the tower in which the gas is to be stripped. It is then lean oil. It absorbs the heavy ends from the gas; it is then ‘fat oil’ or ‘rich oil’. The fat oil or rich oil is then stripped of these heavy ends in a separate stripper, and is again lean oil and returned to the tower.

Light Ends
The low boiling point fraction of gasolines, generally pentanes and lighter.

Light Naphtha
One of the lower boiling components of gasoline; those with 95% boiling off at or below 160 deg C (320 F)

Low Level Alarm
An instrument device which activates a visual or audible alarm when the level in the vessel drops below this a safe point.

LPG Gas
Vapour kept in the liquid state by pressure. Normally propane, propylene, or butane. LPG = Liquified Petroleum Gas

Material Balance
Calculation in which the total of the various quantities of material entering a system/process are compared with the total of the various quantities leaving the system/process

Mechanical Seal
A mechanical device to seal the flow of liquid along a centrifugal pump shaft by using a fixed and rotating element of two different materials.

Melting Point
The temperature at which a given solid begins to liquefy, there are special test methods for wax, asphalt, grease, etc.

Mercaptans
Organic compounds with the general formula R-SH, meaning that the thiol group –SH is attached to a radical such as CH₃- or C₂H₅- e.g. C₂H₅SH.They have a strong odour and can be found in fuel oil. Mercaptans are also used to odour LPG which is normally odourless.

Middle Distillates
Process streams from kerosene to lubricating oils.
Molecular Sieve
A chemical, having a zeolite crystalline structure, capable of separating molecules based on their size and/or structure by absorption and/or sieving.

Naphtha
A general term for light petroleum distillates and includes gasoline fractions.

Naphthenic Hydrocarbons
Hydrocarbons in which the carbon-hydrogen groupings are arranged in two closed rings and have an empirical formula of \( C_{n}H_{2n} \)

Non-Sparking Tools
Tools for use in hazardous areas made of bronze or an alloy of copper with about 2% beryllium.

Octane
Any of the 15 isomers of \( C_{8}H_{18} \)

Octane Number
A number indicating the relative anti-knock value of a gasoline. It is based on a comparison with the reference fuels iso-octane (100 octane number) and normal heptane (0 octane number). The octane number of an unknown fuel is the per cent volume of iso-octane with normal heptane which matches the unknown fuel in knocking tendencies when tested in a CFR Knock Engine. If the unknown fuel knocks, as indicated on the knock meter reading of the CFR engine, at level half way between the readings of the reference fuel blends of say 94% iso-octane/6% normal heptane, and that of 96% iso-octane/4% normal heptane, then the unknown fuel will have an ‘octane rating of 95.

Off Site
This describes facilities geographically outside the regular operating unit boundaries.

Olefinic Hydrocarbons
These are straight chain hydrocarbons having the general formula of \( C_{n}H_{2n} \) and containing a double bond or unsaturated linkage in the chain. They are appreciably more reactive than paraffins or naphthenes and combine readily with elements such as hydrogen, chlorine and bromine

On Site
This describes facilities geographically located inside the regular operating unit boundaries.

Orifice Plate
A circular plate with a hole in it used to measure flow by determining the pressure drop across the plate. The diameter of the hole is set depending on line size and flow rate range to be measured. Often the pressures are measured from flange tapings.

Oxidation
Chemical reaction in which oxygen combines with another substance (asphalt oxidation), gum formation, rusting)
Paraffinic Hydrocarbons
The whole series of straight chain hydrocarbons having the formula $C_nH_{2n+2}$

Paraffin Wax
Wax of very low oil content, highly refines, white with some degree of translucency, almost tasteless and odourless

Petrolatum
A soft material obtained from petroleum oils consisting of micro-crystalline waxes in substantial quantities of oil.

Petroleum Coke
Solid matter formed as a by-product of the thermal decomposition of petroleum. It consists of carbon and an ash content very much smaller than coal cokes.

Pig
A device used to clean a piping system by forcing it through the system under pressure. Sometimes a type of synthetic foam is used as the pig.

Pipe Still
A primary distillation unit for use on petroleum oils (crude) to separate various components having different boiling points. It consists of a furnace containing banks of tubes and a fractionating tower with accessory equipment (pumps, pipework)

Platforming
The oldest and most widely used fixed bed naphtha reforming process using a platinum catalyst.

Poisons
Any compound which causes a catalyst to lose activity, such as arsenic, sulphur, oxygen and nitrogen compounds.

Polymerization
The process of combining 2 or more unsaturated molecules. Frequently propylene and butylenes are combined to form high quality gasoline components.

Powerforming
A fixed bed naphtha reformer to upgrade components by improving their octane rating

Regenerative Type
A unit in which the catalyst in one reactor can be regenerated while the rest of the unit is on stream

Semi-Regenerative Type
A unit in which the catalyst in one reactor can be regenerated in place after several month’s operation while the unit is offstream

Non-Regenerative Type
A unit in which the catalyst is removed and returned to the manufacturer for reworking.
**Preheat**
To heat immediately before some treatment or use, as an oil to be subsequently distilled, or as a body of gas or oil that is about to be used as fuel.

**Preheater**
An exchanger used to heat a gas or liquid before sending it to an operating unit.

**Product Giveaway**
The difference between the minimum specification and the actual quality as shipped on any specification on any product. That is making the product of better quality than is required by the specification and therefore giving away potential profit.

**Pump Around**
A system on a distillation tower for withdrawing liquid from a plate (or location in the tower), cooling it and returning it to another plate (or location in the tower) for the purpose on inducing the condensation of vapours.

**Pump Out**
Those lines and equipment whose sole purpose is to empty the tower or drum of oil and slop during shutdown or emergencies. It can also mean the act of withdrawing the liquid from the equipment by means of pumps.

**Purging**
The displacement of one material with another in process equipment, frequently displacing hydrocarbon vapours with an inert gas such as nitrogen.

**Pyrolysis**
The decomposition of a substance by means of heat.

**Quench Oil**
Oil injected into the product leaving a cracking or reforming heater to lower the temperature and arrest the cracking reaction.

**Radiographic Testing**
A non-destructive test method used to examine the interior of opaque material. Radiography makes use of gamma or X-ray penetrating radiation and radiation detectors such as X-ray film, fluorescent screens or Geiger counters.

**Raffinate**
In petroleum technology, a material which has been refined as compared with an extract, which is the material removed by a refining agent.

**Reboiler**
A heat exchanger attached to a fractionating tower used to add additional heat to the lower section of the tower or column.
Reduced Crude
The name given to the bottoms or residual liquid from the atmospheric pipe stills.

Reference Fuel
Specifically blend octane fuels with definite octane (or cetane) number which are used in determining the octane (or cetane) number of a test sample of gasoline (or diesel).

Refinery Gas
Any form or mixture of gas gathered in a refinery from the various units.

Reflux
The fraction that is returned to the tower or column to assist in obtaining a better vapour/liquid separation. Sometimes sprayed back into the column.

Reforming
Cracking of naphthas to obtain more volatile products of higher octane number- may be thermal or catalytic. It differs from other cracking only in using more volatile charge stock.

Regeneration
Removal from the catalyst of carbon by burning.

Reid Vapour Pressure (RVP)
The vapour pressure at 40 deg C of a liquid expressed in kilopascals.

Relief Valve
Safety valve for automatic pressure of vapour or liquid at a preset pressure.

Residual Fuel Oil
A petroleum product intended for large industrial installations.

Rotameter
A flow meter with direct reading from the rotating gauge or rotar.

Safety Fuel
A motor fuel with a flash point of 38 deg C (100 F) or higher

Shutdown
The activity where major maintenance of a process unit is scheduled.

Sidestream
An intermediate process stream liquid fraction drawn from a tray in a tower or column.

Slide Valve
A large valve consisting of a sliding disc in a housing which is moved hydraulically to control a process. Slide valves are used in FCCU’s. (Fluidized Catalytic Cracking Unit)
Sludge
Heavy waste material which collects in the bottom of a tank or vessel.

Sour Gas
Gas containing sulphur compounds such as hydrogen sulphide and mercaptans.

Splitter
A fractionating tower with an overhead stream and a bottoms streams only, no sidestreams.

Stabilizer
A unit of fractional distillation equipment for removing light hydrocarbons from an oil to reduce vapour pressure.

Standpipe
A vertical line used to transport catalyst from a vessel to provide positive pressure for the catalyst to flow.

Steam Cracking
High temperature cracking of hydrocarbons in the presence of steam.

Straight Run
Synonym for a process stream which has not been modified in a process. It is distilled straight from crude oil.

Stripper
Equipment in which the lightest fractions are removed from the mixture.

Synthetic Crude
The total, liquid multi-component mixture resulting from a process involving the rearrangement of charge stock. Commonly applied to such products from cracking, reforming, vis-breaking, etc.

Sweet Crude
Crude oil relatively free of sulphur compounds such as Hydrogen Sulphide.

Tank Farm
Site where oil storage tanks are located.

Thermal Cracking
The refinery process by which the breaking of molecules of heavier oil fractions into lighter fractions (e.g. gasoline) is done by high temperature and pressures.

Topped Crude
Crude oil from which some of the lighter fractions have been removed by distillation.

Turn Around
Similar to a plant shutdown where a complete overhaul of the plant is carried out.
Vacuum Distillation
Distillation carried out under reduced pressure by using a vacuum pump or steam vacuum extractors. At the lower pressure the boiling point is reduced and therefore coking or cracking of the heavy hydrocarbon is avoided.

Vapour Pressure
The pressure exerted by the vapour phase of a liquid when in an enclosed container. Reid vapour pressure is a common term and follows a Reid procedure for measurement.

Virgin Gas Oil
Gas oil from the primary distillation which has not been subjected to cracking.

Virgin Naphtha
Naphtha from the primary distillation which has not been subjected to further processing e.g. cracking, reforming

Viscosity
A measure of the consistency of a fluid determined by the time a set volume of fluid flows through an orifice at the base of a cup. Oils are more viscose than fuels.

Volatility
A measure of the ease of which a liquid vapourises. Petrol is highly volatile. Diesel is low volatility.

X-Ray
Radiation wave length rays used in the oil industry to test for defects in welds by producing a photographic image.