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#### CAFE:

Corporate Average Fuel Economy Minimum Fuel Economy for Cars and Light Trucks established by U.S. Congress. It is currently 27.5 MPG for Cars and 20.7 MPG for Light Trucks

### Calorie:

The amount of heat required to raise the temperature of 1 gram of water 1°C, at or near the temperature of maximum density. This unit is called a "small calorie", or "gram calorie".

The amount of heat required to raise the temperature of 1 kg of water 1°C. This unit is called a "large calorie" or "kilogram-calorie"

### Capillary viscometer:

Aviscometer in which the oil flows through a capillary tube.

### **CARB**:

California Air Resources Board.

### Carbon monoxide (CO):

Colorless, odorless, poisonous gas, formed by the incomplete combustion of any carbonaceous material (e.g., gasoline, wood, coal). CO is the most widely distributed and most commonly occurring air pollutant, with motor vehicles being the primary source of man-made emissions, although emission controls are reducing the automobile's contribution. It is estimated that more than 90% of atmospheric CO comes from natural sources, such as decaying organic matter.

### **Carburetor:**

device used with an internal combustion engine to atomize and mix fuel with air in the proper proportion for efficient combustion at all engine speeds. It controls the engine's power output by throttling, or metering, the air-fuel mixture admitted to the cylinders.

The automobile carburetor is a complex mechanism designed to compensate for many variables over a wide range of speeds and loads.

Intake air is drawn through the venturi, a constricted throat in the air passage that causes a pressure reduction in the air stream, which draws fuel from the carburetor bowl through either the main jet or the idle jet.

The fuel is atomized by the high-velocity air, and the resulting air-fuel mixture is piped through the intake manifold to the individual cylinders, where it is burned.

A throttle plate between the venturi and the cylinders controls power and speed by controlling the volume of air-fuel mixture reaching the cylinders. In most carburetors, closing of this (venturi) throttle valve shuts down the main jet and activates the idle jet, which provides the fuel-rich mixture that idling requires. An accelerator pump in the carburetor provides momentary fuel enrichment when the accelerator pedal is depressed rapidly, to compensate for the sudden influx of air. During cold starting, a choke (or butterfly valve) restricts airflow to the carburetor, thus enriching the mixture for faster starting. The choke on most automotive engine carburetors is operated automatically by a thermostatic spring, which opens the choke as the engine warms up.

#### Carrier Oil:

Oil (Petroleum), usually solvent neutral (SN) or process oil, used to "carry" or dissolve and/or disperse additives, which would otherwise be too viscous or even solid, and therefore not easily mixed with the Base Stock Oil.

# **Catalyst:**

Substance that causes or speeds up a chemical reaction without itself undergoing an associated change; catalysts are important in a number of refining processes.

### Catalytic converter:

An emissions control device, incorporated into an automobile's exhaust system, containing catalysts — such as platinum, palladium, or rhodium — that reduce the levels of hydrocarbons (HC), carbon monoxide (CO) and nitrogen oxides (NOx) emitted to the air. In the catalytic converter, HC and CO are oxidized to form carbon dioxide (CO2), and NOx are reduced to nitrogen and oxygen. Three-way catalytic converters that control all three substances require associated electronic controls for precise regulation of oxygen levels in the exhaust gas. Catalytic converters are also effective in removing PNA (polynuclear aromatic) hydrocarbons. Cars equipped with catalytic converters require unleaded gasoline, since the lead in tetraethyl lead, an antiknock compound, is a catalyst "poison."

### **Catalytic cracking:**

In refining, the breaking down at elevated temperatures of large, high-boiling hydrocarbon molecules into smaller molecules in the presence of a catalyst. The principal application of catalytic cracking is the production of high-octane gasoline, to supplement the gasoline produced by distillation and other processes. Catalytic cracking also produces heating oil components and hydrocarbon feedstocks, such as propylene and butylene, for polymerization, alkylation, and petrochemical operations.

### **Cavitation:**

Formation of an air or vapor pocket (or bubble) due to lowering of pressure in a liquid, often as a result of a solid body, such as a propeller or piston, moving through the liquid; also, the pitting or wearing away of a solid surface as a result of the collapse of a vapor bubble. Cavitation can occur in a hydraulic system as a result of low fluid levels that draw air into the system, producing tiny bubbles that expand explosively at the pump outlet, causing metal erosion and eventual pump destruction. Cavitation can also result when reduced pressure in lubricating grease dispensing systems forms a void, or cavity, which impedes suction and prevents the flow of grease

# **CCMC**:

Comite des Constructeurs d'Automobile du Marche Commun (European Common Market Automobile Manufacturers Association) European vehicles. This organization was dissolved at the end of 1990. ACEA, the new association of the European automobile manufacturers, formed in February 1991, has decided to retain the CCMC oil sequences and their original designation for a transitional period.

### CEC:

Coordinating European Council

# **Cellulose:**

The chief substance composing the cell walls or fibers of all plant tissue, a polymeric carbohydrate with the general formula (C6H10O5)x: it is used in the manufacture of paper, textiles, filters, etc.

### Centistoke (cSt):

The worldwide unit of kinematic viscosity.

### **Channeling:**

- a) The phenomenon observed among gear lubricants and greases when they thicken due to cold weather or other causes, to such an extent that a groove is formed through which the part to be lubricated moves without actually coming in full contact with the lubricant.
- b) Aterm used in percolation filtration; may be defined as: a preponderance of flow through certain portions of the clay bed.

#### CID:

Commercial Item Description used in many cases in lieu of military specification (MIL).

### **Clay filtration:**

Refining process using fuller's earth (activated clay) or bauxite to adsorb minute solids from lubricating oil, as well as remove traces of water, acids, and polar compounds.

### **Cloud point:**

The temperature at which paraffin wax or other solid substances begin to crystallize or separate from the solution, imparting a cloudy appearance to the oil when chilled (ASTM Method D 97).

#### CMA:

Chemical Manufacturers Association is the trade association responsible for the development and administration of the Petroleum Additives Panel Product Approval Code of Practice (CMACode).

# **Coking:**

- a) The undesirable accumulation of carbon (coke) deposits in the internal combustion engine or in a refinery plant.
- b) The process of distilling a petroleum product to dryness.

#### **Colloid:**

- a) a solid, liquid, or gaseous substance made up of very small, insoluble, nondiffusible particles (as single large molecules or masses of smaller molecules) that remain in suspension in a surrounding solid, liquid, or gaseous medium of different matter
- b) a state of matter consisting of such a substance dispersed in a surrounding medium All living matter contains colloidal material, and a colloid has only a negligible effect on the freezing point, boiling point, or vapor pressure of the surrounding medium

### Color:

A factor in the identification, rather than in the quality rating of a petroleum products and lubricants, except where staining or appearance are considerations.

### **Combustion:**

Rapid oxidation of a fuel (burning).

The products of an ideal combustion process are water (H2O) and carbon dioxide (Co2); if combustion is incomplete, some carbon is not fully oxidized, yielding carbon monoxide (CO).

A stoichiometric combustible mixture contains the exact quantities of air (oxygen) and fuel required for complete combustion. For gasoline, this air-fuel ratio is about 15:1 by weight or about 9,500:1 by volume.

If the <u>fuel</u> concentration is too rich or too lean relative to the oxygen in the mixture, combustion cannot take place.

### Combustion chamber:

In an internal combustion engine, the volume, bounded by the top of the piston and the inner surface of the cylinder head, in which the air-fuel charge ignites and burns. Valves and spark plugs are fitted into the combustion chamber.

### **Complex grease:**

Alubricating grease thickened by a complex soap consisting of a normal soap and a complexing agent.

### **Compounding:**

The addition of fatty oils and similar materials to lubricants to impart special properties. Lubricating oils to which such materials have been added are known as compounded oils.

### **Compounded oil:**

Mixture of a petroleum oil with animal or vegetable fat or oil. Compounded oils have a strong affinity for metal surfaces; they are particularly suitable for wet-steam conditions and for applications where lubricity and extra load-carrying ability are needed. They are not generally recommended where long-term oxidation stability is required.

### **Copper strip corrosion:**

The gradual eating away of copper surfaces as the result of oxidation or other chemical action. It is caused by acids or other corrosive agents.

# **Corrosion**:

The gradual eating away of metallic surfaces as the result of oxidation or other chemical action. It is caused by acids or other corrosive agents or by electrochemical reaction of the metal with its environment.

### **Corrosion Inhibitor:**

Petroleum refining process in which large-molecule liquid hydrocarbons are converted to small-molecule, lower-boiling liquids or gases; the liquids leave the reaction vessel as unfinished gasoline, kerosene, and gas oils. At the same time, certain unstable, more reactive molecules combine into larger molecules to form tar or coke. The cracking reaction may be carried out under heat and pressure alone (thermal cracking), or in the presence of a catalyst (catalytic cracking).

### **Crankcase oil:**

Also referred to as:

- 1. Motor Oil
- 2. Engine Oil
- 3. PCMO (Passenger Car Motor Oil)
- 4. DHD (Diesel Heavy Duty)
- 5. DEO (Diesel Engine Oil).

#### **Crude oil:**

Complex, naturally occurring fluid mixture of petroleum hydrocarbons, yellow to black in color, and also containing small amounts of oxygen, nitrogen and sulfur derivatives and other impurities. Crude oil was formed by the action of bacteria, heat, and pressure on ancient plant and animal remains, and is usually found in layers of porous rock such as limestone or sandstone capped by an impervious layer of shale or clay that traps the oil (reservoir). Crude oil varies in appearance and hydrocarbon composition depending on the locality where it occurs, some crudes being predominantly naphthenic, some paraffinic, and others asphaltic. Crude is refined to yield petroleum products.

### **CUNA:**

Commissione Tecnica de Unificazione nel l'Autoveicolo



AB Petrochem Pvt. Ltd.