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AAMA :

The **American Automobile Manufacturers Association** (AAMA) is a trade association that represents car manufacturers headquartered in the United States. After the purchase of Chrysler by German Daimler-Benz the organization has been dissolved on December 31, 1998.

Absolute Viscosity :

The ratio of shear stress to shear rate. It is a fluid's internal resistance to flow. The common unit of absolute viscosity is the poise. Absolute viscosity divided by the fluid's density equals kinematic viscosity.

Absorber Oil :

Oil used to selectively absorb heavier hydrocarbon components from a gas mixture. Also called wash oil or scrubber oil.

Absorption :

Process by, which one substance draws into itself another substance; the assimilation of one material into another; in petroleum refining, the use of an absorptive liquid to selectively remove components from a process stream. Examples: a sponge picking up water; an oil recovering gasoline from wet natural gas.

ACEA :

Association des Constructeurs Europeens Automobiles (Association of the European Automobile Manufacturers) is the new association of the European automobile manufacturers, formed in February 1991. ACEA is engaged in a broad range of activities including safety and environmental concerns and any regulations which have a direct impact on the European automobile industry. ACEA members are all the European motor vehicle manufacturers including Ford Europe, GM Europe, Scania, and Volvo. At present, only Peugeot is not a member of ACEA but cooperates with ACEA in the field of lubricating oils and fuels.

Acid :

A member of an important and fundamental category of chemical substances characterized by having an available reactive hydrogen and requiring an alkali to neutralize them. Acid solutions usually have a sour, biting, and tart taste, like vinegar. pH is less than 7.

Acid Sludge :

The residue left after treating petroleum oil with sulfuric acid for the removal of impurities. It is a black, viscous substance containing the spent acid and impurities.

Acid treating :

A refining process in which unfinished petroleum products, such as gasoline, kerosene, and lubricating oil stocks, are contacted with sulfuric acid to improve their color, odor, and other properties.

Acidity :

The amount of free acid in any substance.

Additive :

An agent or chemical substance added to a product and used for imparting new, or for improving existing characteristics of lubricating oils or **greases**.

Additive Level :

The total percentage of all additives in an oil. (Expressed in % of mass [weight] or % of volume)

Adhesion :

The force or forces causing two materials such as a lubricating grease and a metal, to stick together.

Adsorption :

Adhesion of the molecules of gases, liquids, or dissolved substances to a solid surface, resulting in relatively high concentration of the molecules at the place of contact; e.g., the plating out of an anti-wear-additive on metal surfaces. Also, any refining process in which a gas or a liquid is contacted with a solid, causing some compounds of the gas or liquid to adhere to the solid; e.g., contacting of lube oils with activated clay to improve color.

Aerosol :

A highly dispersed suspension (Colloidal System) of fine solid or liquid particles in a gas. Petroleum solvents are commonly used either as carriers or as vapor pressure depressants in packaged aerosol specialty products. Petroleum products are also applied in aerosol form in agricultural oil applications and oil mist lubrication.

AFV :

Alternate Fuel Vehicle

AftMA :

American Gear Manufacturers Association

AIAM :

Alliance of International Auto Manufacturers (AIAM)

Air Entrainment :

The incorporation of air in the form of bubbles as a dispersed phase in the bulk liquid. Air may be entrained in a liquid through mechanical **means and/or** by release of dissolved air due to a sudden change in environment. The presence of entrained air is usually readily apparent from the appearance of the liquid (i.e., bubbly, opaque, etc.) while dissolved air can only be determined by analysts.

Aliphatic Hydrocarbon :

Hydrocarbon in which the carbon atoms are joined in open chains, rather than rings.

Alkali :

In chemistry, any substance having basic properties. The term is applied to hydroxides of ammonium, lithium, potassium, and sodium. They are soluble in water; have the power to neutralize acids and form salts. They turn red litmus blue. In a more general sense, the term is also applied to the hydroxides of the so-called alkaline earth metals: barium, calcium, and strontium.

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Alkylate :

Product of an alkylation process.

Alkylated Aromatic :

Benzene-derived synthetic lubricant base with good hydrolytic stability (resistance to chemical reaction with water) and good compatibility with mineral oils. Used in turbines, compressors, jet engines, and hydraulic power steering.

Alkylation :

In refining, the chemical reaction of a low-molecular-weight olefin with an isoparaffin to form a liquid product, alkylate, that has a high octane number and is used to improve the antiknock properties of gasoline. The reaction takes place in the presence of a strong acid catalyst, and at controlled temperature and pressure. Alkylation less commonly describes certain other reactions, such as that of an olefin with an aromatic hydrocarbon.

Almen EP lubricant tester :

A Journal bearing machine used for determining the load-carrying capacity or Extreme Pressure properties (EP) of gear lubricants.

Ambient Temperature :

Temperature of the area or atmosphere around a process, (not the operating temperature of the process itself).

Aniline Point :

The minimum temperature for complete miscibility of equal volumes of aniline and the sample under test ASTM Method D 611. A product of high aniline point will be low in aromatics and naphthenes and, therefore, high in paraffins. Aniline point is often specified for spray oils, cleaning solvents, and thinners, where effectiveness depends upon aromatic content. In conjunction with API gravity, the aniline point may be used to calculate the net heat of combustion for aviation fuels.

Anti-Foam Agent :

An additive used to control foam. two types of additives are used to reduce foaming in petroleum products: silicone oil to break up large surface bubbles polymers of various kinds that decrease the amount of small bubbles entrained in the oils.

Antifreeze Solution :

A fluid, such as ethylene or propylene glycol, which is added to or used to replace the water in the cooling system of engines in order to prevent **freezing**.

Anti-Friction Bearing(s) :

A type of bearing using rollers, cones or balls. They are also known as rolling element bearings.

Anti-icing Additive :

Substance added to gasoline to prevent ice formation on the throttle plate of a carburetor. Anti-icing additives are of two types: those that lower the freezing point of water those that alter the growth of ice crystals so that they remain small enough to be carried away in the air stream.

Antiknock :

Substance added to gasoline to prevent ice formation on the throttle plate of a carburetor. Anti-icing additives are of two types: those that lower the freezing point of water those that alter the growth of ice crystals so that they remain small enough to be carried away in the air stream.

Antiknock compounds :

Substances which raise the antiknock quality of a gasoline, as expressed by octane number. Historically, tetraethyl lead (lead alkyl) has been the most common antiknock compound, but its use is being phased out under Environmental Protection Agency (EPA) regulations. Coming into increasing use as octane boosters are toluene and oxygenated organic type substances such as methyl tertiary butyl ether (MTBE) and tertiary amyl methyl ether (TAME).

Antiknock index :

The average of the Research Octane Number and Motor Octane Number; a measure of the octane quality of a gasoline. According to EPA and FTC regulations the antiknock index of any gasoline sold in the USA must be displayed on any pump dispensing the gasoline for use in motor vehicles.

Antioxidant :

Chemical added to lubricating oils to resist oxidation.

Anti-seize Compound :

Grease-like substance containing graphite, moly or metallic solids (Copper, Zinc, Silver or Lead), which is applied to threaded joints, particularly those subjected to high temperatures, to facilitate separation when required.

Anti-wear Additive :

Additive in a lubricant that reduces friction and excessive wear.

API :

The American Petroleum Institute (API) is a trade association that promotes U.S. petroleum interests, encourages development of petroleum technology, cooperates with the government in matters of national concern, and provides information on the petroleum industry to the government and the public.

API Engine Service Classification System :

Classifications and designations for lubricating oils for automotive engines developed by API in conjunction with SAE and ASTM. An recently also with ILSAC.

API ftear Lubricant Service Designation :

Classifications and designations for lubricating oils for automotive transmissions developed by API in conjunction with SAE and ASTM.

API gravity :

A nonscientific and arbitrary scale expressing the gravity or density of liquid petroleum products. The measuring scale is calibrated in terms of degrees API.

Apparent Viscosity :

The ratio of shear stress to rate of shear of a non-Newtonian fluid such as lubricating grease, or a multi-grade oil, calculated from Poiseuille's equation and measured in poises. The apparent viscosity changes with changing rates of shear and temperature and must, therefore, be reported as the value at a given shear rate and temperature (ASTM Method D 1092).

Aromatic :

Derived from, or characterized by, the presence of the benzene ring. unsaturated hydrocarbon identified by one or more benzene rings or by chemical behavior similar to benzene. The benzene ring is characterized by three double bonds alternating with single bonds between carbon atoms (compare with olefins). Because of these multiple bonds, aromatics are usually more reactive and have higher solvency than paraffins and naphthenes. Aromatics readily undergo electrophylic substitution; that is, they react to add other active molecular groups, such as nitrates, sulfonates, etc. Aromatics are used extensively as petrochemical building blocks in the manufacture of pharmaceuticals, dyes, plastics, and many other chemicals.

ASEAN :

Association of South-East Asian Nations

Ash Content :

The percent by weight of residue left after combustion of an oil or fuel sample. (ASTM Method D 482 or D 874 [sulfated ash]). Lubricating oil detergent additives contain metallic derivatives, such as barium, calcium, and magnesium sulfonates, that are common sources of ash. Ash deposits can impair engine efficiency and power.

ASLE :

American Society of Lubrication Engineers This society is still in existence but is now known as the Society of Tribologists and Lubrication **Engineers** (STLE). The ASLE had published standards for machine tool lubricants.

Asperities :

Microscopic projections on metal surfaces resulting from normal surface-finishing processes. Interference between opposing asperities in sliding or rolling applications is a source of friction, and can lead to metal welding and scoring. Ideally, the lubricating film between two moving surfaces should be thicker than the combined height of the opposing asperities.

Asphalt :

Black to dark-brown solid or semisolid cemetitious material which gradually liquefies when heated and in which the predominating constituents are bitumen's. These occur in the solid or semisolid form in nature; are obtained by refining petroleum; or are combinations with one another or with petroleum or derivatives thereof.

Asphaltic :

Essentially composed of, or similar to, asphalt; frequently used to describe lubricating oils derived from crude oils which contain asphalt.

ASTM :

The American Society for Testing and Materials (ASTM) is a professional society that is responsible for the publication of test methods and the development of test evaluation techniques.

ATC :

Technical Committee of the Petroleum Additive Manufacturers

(ATF) Automatic Transmission Fluid :

Fluid for automatic transmissions in motor vehicles. Automatic transmission fluids must have a suitable coefficient of friction, good low-temperature viscosity, and anti-wear properties. Other necessary properties are: high oxidation stability, anti-corrosion, anti-foaming, and compatibility with synthetic rubber seals.

ATIEL :

Association Technique de L'Industrie Europeene des Lubrifiants

Auto-ignition :

A.In realtion to Fuels & Combustion in Internal Combustion Engines it is the spontaneous ignition, and the resulting very rapid reaction, of a portion or all of the fuel-air mixture in an engine. The flame speed is many times greater than that which follows normal spark ignition. The noise associated with it is called knock. b.In realtion to Lubricants it is the Temperature at which the lubricant will self ignite when exposed to air and continue to burn.