Less volatile meaning

What does volatile mean. Most volatile to least volatile. Less volatile stocks meaning. What does less volatile mean. Less volatile meaning in finance. Less volatile acid meaning. What does more volatile mean.

Suggest a new Definition Proposed definitions will be considered for inclusion on Economictimes.com Definition of equity: is a rate at which the price of a security increases or decreases for a given set of returns. Volatility is measured by calculating the standard deviation of annualised returns over a given period of time. Shows the range at which the price of a security can increase or decrease. Description: Volatility measures the risk of a security. It is used in the option price formula to measure fluctuations in the returns on underlying assets. Volatility indicates the behavior of security prices and helps to evaluate the fluctuations that may occur in a short period of time. If the prices of a security fluctuate rapidly in a short period of time, it is said to have high volatility. If the prices of a security fluctuate slowly over a longer period of time, it is said to have low volatility. By Citizendium This article is about Volatilty (chemistry).For other uses of the term Volatility, see Volatility (disambiguation). In chemistry and physics, volatility is a term used to characterize the tendency of a substance to vaporize. [1] Is directly related to the vapour pressure of a substance. At a given temperature, a substance with a higher vapour pressure vaporizes more easily than a substance with a lower vapour pressure. [2] [4] In other words, at a given temperature, the more volatile the substance, the higher the vapor pressure will be in equilibrium with its vaporizing substance â when the rates at which the molecules escape and return to the vaporizing substance are the same. In common usage, the term applies primarily to liquids. However, it can also be used to characterize the sublimation process by which some solid substances such as ammonium chloride (NH_4Cl) and dry ice, which is solid carbon dioxide (CO_2,) change directly from their solid form to a vapor without becoming a liquid. Any substance with significant vapour pressure at temperatures from 20 to 25 Â°C (68 to 77 Â°F) is very often referred to as volatile. Vapour Pressure, Temperature and Boiling Point (PD) Image: Milton Beychok Example of vapour pressure graphs of various liquids. For more information, see: vapour pressure, boiling point and and Antoine's equation. The vapour pressure of a substance is the pressure at which its gaseous phase (vapo) is in equilibrium with its liquid or solid phase. It is a measure of the tendency of molecules and atoms to escape from a liquid or solid. At atmospheric pressures, when the vapour pressure of a liquid increases with rising temperatures to the point where it equals atmospheric pressure, the liquid has reached its boiling point, i.e. the temperature at which the liquid changes its state from liquid to a gas during its mass. That temperature is very commonly referred to as the normal boiling point of the liquid. Not surprisingly, the normal boiling point of a liquid will be at a low The greater the trend of its molecules to escape from the liquid, ie greater is its vapor voltage. In other words, the greater the vapor voltage of a liquid, the greater the volatility and the lower is the normal boiling point of the liquid. The graphic of the adjacent steam voltage shows the dependence of the steam voltage from the temperature for a variety of liquids [5] and confirms that the liquids with higher vapor voltages have normal lower boiling points. For example, at any temperature, methyl chloride (CH_3CL) has the higher vapor voltage between the liquids shown in the graph. It also has the lowest normal boiling point (26 Â ° C), where its steam voltage curve (the blue line) intersects the horizontal pressure line of an absolute vapor voltage atmosphere (ATM). In terms of intermolecular forces, the boiling point represents the temperature to which liquid molecules have sufficient kinetic energy to overcome the various intermolecular attractions that bind between them within the liquid. Therefore the boiling point is also an indicator of the strength of these attractive forces. The higher the intermolecular attraction forces, more difficult is the escape of the molecules from the liquid and therefore minor is the vapor voltage of the liquid. Lower is the voltage of vapor of the liquid, the higher it must be the temperature to start the boiling. Therefore, the higher the intermolecular attraction forces, the greater the normal boiling point. [6] [7] Fullibilities relative for more information, see: Flights relative. The relative volatility refers to the measure of the difference between the vapor voltage of the most volatile components of a liquid mixture and the vapor voltage of the less volatile components of the mixture. This measure is widely used in the design of large processes of industrial distillation. [4] [5] [8] In fact, it indicates the ease or the difficulty of using distillation to separate the most volatile components from the less volatile of a mixture. The use of relative volatility is applied to both multi-component liquid mixtures and binary mixtures. By convention, relative volatility is typically indicated as ÃžÂ ±. Volatile organic compounds for more information, see: Volatile organic compounds. For volatile organic compounds (VOC) means organic chemical compounds that have significant steam pressure and that can have negative effects on the environment and human health. VOCs are numerous, diversified and include chemical compounds of anthropic and natural origin. Anthropogenic VOCs are regulated by various government agencies for the environment around the world. There is no universally accepted definition of VOC. Some regulators define them based on their vapor voltage at normal temperatures, or to their normal points of or the number of carbon atoms they contain per molecule, while others define them according to their photochemical capacity. photochemical. U.S. Environmental Protection The Agency currently defines them as any carbon compound, excluding carbon monoxide, carbon dioxide, carbonic acid, metal carbides or carbonates, and ammonium carbonate, that participates in atmospheric photochemical reactions (i.e. reactions producing photochemical smog). However, any compounds of such carbons that have been determined to have low photochemical reactivity, and specifically listed in the regulation, are exempt from the regulation. [9] Special Definitions There are a number of special definitions of the terms volatility and volatile commonly used in some fields of study, but which are still within the general context of chemistry: Wine production The wine industry uses the term volatile acids to refer to organic acids that are water soluble, have short carbon chains (six atoms). carbon or not) and which occur in wine. For example: carbonic acid, acetic acid, formic acid, butyric acid and proprionic acid. Cosmetics and aromas Some volatile oils obtained from plants have distinctive and pleasing aromas that are used in cosmetics and food flavors. These oils are commonly referred to as essential oils. Coal coals contain a certain amount of volatile matter, defined as the portion of a coal sample which, when heated in the absence of air, is released as inorganic and organic gases. Anesthetics Anesthetics Inhalation, commonly referred to as volatile anesthetics are organic liquids at room temperature that are easily vaporized. Examples are: alotane, isofluranes and sevoflurанes. References â Note: To vaporize means to become a vapor, the gaseous state of the substance. â Gases and Vapor (University of Kentucky website) â James G. Speight (2006). Petroleum Chemistry and Technology, IV Edition. CRC Press. ISBN 0-8493-9067-2. 4.0 4.1 Kister, Henry Z. (1992). Distillation Design, 1st edition. McGraw-Hill. ISBN 0-07-034 909-6. â 5.0 5.1 R.H. Perry and D.W. Green (Editors) (1997). McGraw-Hill. ISBN 0-07-049 842-5. â The Forces Between Molecules, Department of Chemistry, University of Florida. â Intermolecular Forces, School of Chemistry, University of New South Wales, Sydney, Australia. â Seader, J. D. and Henley, Ernest J. (1998). Principles of the Separation Process. Wiley. ISBN 0-471-58 626-9. â U.S. Code Regulation: 40 CFR 51.100 (s) – Definition – Volatile Organic Compounds (VOCs) Trend of a substance to vaporize liquid bromine readily transitions to vapor at room temperature, indicating high volatility. In chemistry, volatility is a material quality that describes as a vapourizing substance. At a given temperature and pressure, a substance with high volatility is more likely to exist as a vapor, while a substance with low volatility is Probably a liquid or solid. Volatility can also describe the tendency of a steam to season in a liquid or solid; lessSubstances condense more easily by vapour than highly volatile substances.[1] Differences in volatility can be seen by comparing the rate at which a group of substances evaporates (or sublimates in the case of solids) when exposed to the atmosphere. A highly volatile substance such as rubbing alcohol (isopropyl alcohol) will evaporate rapidly, while a low volatile substance such as vegetable oil will remain condensed.[2] In general, solids are much less volatile than liquids, but there are some exceptions. Sublimating (transforming directly from solids to vapour) solids such as dry ice (solid carbon dioxide) or iodine can vaporize at a rate similar to that of some liquids under standard conditions.[3] Description Volatility itself does not have a definite numerical value, but is often described using the pressures of vapour or boiling points (for liquids). High vapour pressures indicate high volatility, while high boiling points indicate low volatility. Vapour pressures and boiling points are often presented in tables and graphs that can be used to compare chemicals of interest. Data on volatility are typically found through experimentation on a range of temperatures and pressures. Vapour pressure A log-lin diagram of vapour pressure for various liquids The vapour pressure is a measure of the readiness with which a condensed phase forms vapour at a given temperature. A substance contained in an initially vacuum-sealed container (without air inside) will quickly fill any vacuum with vapour. When the system reaches equilibrium and no more vapour is formed, the vapour pressure can be measured. Increasing the temperature increases the amount of vapour that is formed and thus the vapour pressure. In a mixture, each substance contributes to the overall vapour pressure of the mixture, while the more volatile compounds contribute more. Boiling Point The boiling point is the temperature at which the vapour pressure of a liquid equals the surrounding pressure, causing rapid evaporation or boiling of the liquid. It is closely related to vapour pressure, but depends on pressure. The normal boiling point is the boiling point at atmospheric pressure, but it can also be reported at higher or lower pressures.[3] Contributing Factors Intermolecular Forces Normal boiling point (red) and melting point (blue) of linear alkanes relative to the number of carbon atoms. An important factor influencing the volatility of a substance is the strength of the interactions between its molecules. Attractive forces between molecules are what holds materials together, and materials with stronger intermolecular forces, like most solids, are not typically Birds. Ethanol and dimethyl ether, two chemicals with the same formula (C_2H_6O), have different volatility due to the different interactions that occur between their molecules in the liquid phase: ethanol molecules are able to bind to hydrogen, while dimethyl ether molecules are not.[4] is a stronger overall attractive force between ethanol molecules, making it the least volatile substance of the two. Molecular Weight In general, volatility tends to decrease with the increase in molecular mass, because larger molecules can participate in a more internal bond,[5] although other factors such as structure and polarity play a significant role. The effect of molecular mass can be partially isolated by comparing the chemical substances of the similar structure (esters, alkanes, etc.). For example, linear alkali have a decreasing volatility as it increases the carbon number in the chain. Applications Distillation A column of distillation of crude oil. Knowledge of volatility is often useful in separating components from a mixture. When a mixture of condensed substances contains more substances with different levels of volatility, its temperature and pressure can be manipulated so that the most volatile components change to a steam while the less volatile substances remain in the liquid or solid phase. The newly formed steam can then be discarded or condensed in a separate container. When vapours are collected, this process is known as distillation. [6] The process of oil refinement uses a technique known as fractional distillation, which allows to separate different chemicals of various volatility in one step. The raw oil entering a refinery is composed of many useful chemicals that must be separated. Crude oil flows into a distillation tower and is heated, which allows the most volatile components such as butane and kerosene to vaporize. These vapors move to the tower and eventually come into contact with cold surfaces, which cause them to condense and be collected. The most volatile chemical in the upper part of the column, while the less volatile chemicals to vaporize the condense in the lower part. [1] On the right is a painting that illustrates the design of a distillation tower. The difference in volatility between water and ethanol is traditionally used in alcohol sophistication. In order to increase the concentration of ethanol in the product, alcohol producers heat the initial alcoholic mixture at a temperature where most ethanol vaporizes while most water remains liquid. The ethanol steam is then collected and condensed in a separate container, resulting in a much more concentrated product. [7] The volatility of perfume is an important consideration when perfumes are realized. Human beings detect odours when aromatic vapours come into contact with receptors in the nose. Ingredients that vaporize quickly after being applied will produce perfumed vapors for a short time before the oils evaporate. Slow evaporation ingredients can remain on the skin for weeks or even months, but cannotenough vapors to produce a strong aroma. To prevent these problems, perfume designers carefully consider the volatility of essential oils and other ingredients in their perfumes. Appropriate evaporation rates are achieved by changing the amount of highly volatile and non-volatile substances Used [8] See also Clausius Â «Report of Clapeyron Distillation Distillation Fractional Partial Pressure Law of Raouult Volatility Relative Steam Liquid Balance Compound Organic Volatile References ^ A B Felder, Richard (2015). Elementary principles of chemical processes. John Wiley & Sons. pag. 279-281 IsbnÃ, 978-1-119-17Â 764-7. ^ Koretsky, Milo D. (2013). Engineering and chemical thermodynamics. John Wiley & Sons. pp.Ã, 639Ã ¢ â € ™ 641. ^ A B Zumdahl, Steven S. (2007). Chemistry. 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