Questions et réponses en chimie sur chemistry.stackexchange

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Le site est une des nombreuses déclinaisons proposées par Stack Exchange, un système multi-domaine de questions et réponses né d'un site initial dédié à l'informatique : Stack Overflow. Il existe d'autres sous-sites pour de nombreuses disciplines : mathématiques, physique, biologie,...

Le niveau de qualité des questions et réponses est mis en évidence, le contenu est trié suivant un ordre de notation, et le niveau général augmente constamment. Certaines interventions restent cependant de faible qualité, mais ne sont pas présentées en priorité.

> Des questions sont simplement intéressantes pour leur aspect scientifique. Quelques unes émanent d'élèves ou étudiants en recherche d'explications qui peuvent apparaître éventuellement triviales. C'est alors la démarche, la formulation, et parfois les réponses de moindre qualité qui sont intéressantes, dans le cadre d'une formation en enseignement de la chimie.

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Sélection de questions intéressantes

- How to balance more complex redox reactions? → Comment équilibrer des réactions redox complexes
- sp5 hybridization in cyclopropane
- What determines the coefficients in the wavefunction of a hybrid orbital?
- How do I figure out the hybridization of a particular atom in a molecule?
- HCH bond angle in cyclopropane and cyclobutane
- When can a molecule be considered freely rotating at room temperature?
- What is the definition of of 'compound', 'mixture', 'element' and 'molecule'?
  - cf. http://pubs.acs.org/doi/abs/10.1021/ed200269e
  - http://pubs.acs.org/doi/abs/10.1021/ed3004275
- Chemistry behind Gale's Coffee Maker in Breaking Bad
- Why do salts such as NaCl dissolve? → Pourquoi les sels tels que le NaCl se dissolvent dans l'eau ?

- Non bonded orbitals in water
- White powder observed after boiling water in electric kettle for many weeks
- Conflict Between Organic and Physical Chemists--explaining the intensities of IR absorptions
- Estimation of the bond angle of water
- What is the real difference between ΔG and ΔG°?
- Are non-exothermic explosions possible?
- Will a strong acid still dissociate “completely” even in the presence of a stronger acid?
- During a phase change in matter, why doesn't the temperature change?
- Does an onion completely remove “fresh” paint VOCs and other chemicals emitted?
- Why doesn't calcium carbonate dissolve in water even though it is an ionic compound?
- Why is the minus sign (-) not allowed in Chemistry?
- Reason behind Le Chatelier's principle
- maximum number of electrons each shell
- When is there hybridization and when is there no hybridization?
- Why calcium chloride is used to melt ice over sodium chloride
- Why do we write NH_3?
- Can you make napalm out of gasoline and orange juice concentrate?
- Why is Borax used as a primary standard? → Pourquoi le borax est-il utilisé comme standard primaire
- What is the origin of the “positive-to-negative” convention concerning dipole moments in chemistry?
- Is there a chemical reaction that speeds up when the temprature gets lower?
- CuCl2 has colour but CuCl does not
- Why is phenolphthalein an appropriate indicator for titration of a strong acid with a strong base? → Pourquoi la phénolphtaléine est un indicateur approprié pour le titrage d'un acide fort par une base forte ?
- Why does CaCO3 react with HCl, but not with H2SO4?
- Why is HCl a stronger acid than Acetic Acid?
- Why is adsorption exothermic
- Iron nomenclature differences between Iron(III) and Ferric
- Why do the atoms in molecular models have the colors they have?
- Can an atom have more than 8 valence electrons? If not, why is 8 the limit ?
- Is there a difference between NaCl or table salt (processed) and salt from the Himalayas?
- Weird Wikipedia Section on Oxidizing Behavior of Nitric and Sulfuric Acids
- During a phase change in matter, why doesn't the temperature change?
- How to calculate melting/boiling points at different pressures
- Why does entropy increase when the difference in temperatures is decreased?
- Why doesn't copper react with hydrochloric acid while the other metals do?
- Reaction of silver nitrate and hydrochloric acid
- How could a change in alkalinity explain Rio 2016 pool water turning green?
- Is a negative pH level physically possible?
- To which block of the periodic table does helium belong?
- Why does the ionization energy decrease anytime the atom size increases? → Pourquoi l'énergie d'ionisation diminue-t-elle lorsque la taille de l'atome augmente ?
- Why do raisins bob up and down in carbonated water?
- Are any bonds broken when NO2 becomes N2O4?
- What is the physical basis for Hund's first rule?
- Entropy change when indistinguishable particles suddenly become distinguishable
- How do you melt metals with super high melting points?
- What is “heating under reflux”?

- How could I cause metal to rust rapidly?
- Is it possible for halogens to show oxidation states less than -1?
- Why does ice water get colder when salt is added?
- Pi electron stacking, how does it work?
- What exactly is a mole?
- How are the atomic orbitals for multi electron atoms obtained?
- Why can't alcohols form hydrogen-bonded dimers like carboxylic acids?
- What are oxidation states used for?
- Why do we use helium in balloons?
- Why would breathing pure oxygen be a bad idea?
- Why is the reduction by sugars more efficient in basic solutions than in acidic ones?
- Chemical bonding and dipole moment
- How do I type a simple chemical equation in Microsoft Word?
- How can I safely handle a concentrated (fuming) nitric acid spill?
- How to separate alloys?
- How does osmosis work?
- How does one tell if a specific molecule is acidic or basic?
- Why is ammonium a weak acid if ammonia is a weak base?
    - *cf.* What is the pKa of water? (chemistry libretexts)
- **pKa de l'ion hydronium ou oxonium…**
    - How to calculate Ka for hydronium and Kb for hydroxide?
    - What is the pKa of the hydronium, or oxonium, ion (H3O+)?
- Why are snowflakes shaped as they are?
- Is there an easy way to find number of “valence electrons”?
- What is the difference between “atomic hydrogen” and “nascent hydrogen”?
- Can drinking a lot of water be fatal?
- How to determine number of structural isomers?
- Structure of Br3O8
- How do I figure out the hybridization of a particular atom in a molecule?
- What is the white substance left behind after boiling down water
- An introduction to “oxidation state”/“oxidation number”
- Does water have a chemical name?
- Do acids really donate a proton? → Les acides donnent-ils vraiment un proton ?
- Is this a violation of Equipartition theorem?
- Why alkanes containing even number of carbons can be packed more efficiently than alkanes with odd number of carbon atoms?
- Choosing the right condenser
- Is there such a thing as an acid without a hydrogen?
- Why do different H+ in polyprotic acids have different K?
- What is charge density?
- How was it concluded that the H3O+ rather than H+ is the “acid” ion?
- Can other substances be dissolved in a saturated solution?
- Can sodium bicarbonate be considered an acid?
- Is it possible for a compound to be soluble in a mixture of solvents but not the individual solvents?
- Why doesn't tetraiodine exist?
- Is the term “heteroatom” reserved for exclusive elements?
- Why is it important to use a salt bridge in a voltaic cell? Can a wire be used?
- Why are dipoles “permanent/induced dipole permanent/induced dipole” and not just “permanent/induced dipole” once?
- In the bicarbonate ion, why can the hydrogen not bond to the carbon?

- Will KOH work in place of NaOH as the electolyte in the electrolysis of water?
- Why does chocolate melt so easily?
- Why does a substance with an endothermic heat of solution dissolve?
- What allows sulfur and phosphorus to expand their octet?
- Why does Zn react with NaOH?
- An ionic compound dissociates into 3 ions of 3 different elements?
- If polyethylene glycol (PEG) is hygroscopic, how does it protect wood?
- Relation between molar mass and van der Waals force
- Difference between electropositivity and electronegativity
- Why does whipped cream use nitrous oxide instead of nitrogen gas?
- What is the reaction between oxalic acid and potassium permanganate?
- A glass of water with ice-cubes in it. Where's the water the coldest; at the top or bottom?
- Why is it wrong to use the concept of “hybridization” while studying complexes?
- Why does mercury decolourise a gold ring?
- Saturated vs unsaturated fats - Structure in relation to room temperature state?
- What is the difference between D and L configuration, and + and −?
- Can I eat the lemons after I have used them as a battery?
- Explanation of Lemon Juice-Invisible Ink
- Percentage ionic character if electronegativity is given
- Reviving Li-ion battery in freezer?
- What volume does one mole of an ideal gas occupy? → Quel volume occupe une mole de gaz idéal
- What are the side effects of adding dry ice to a swimming pool?
- What is the pKa Range for weak acids and bases?
- What properties of carbon dioxide make it a greenhouse gas?
- Why is fluorine a gas, but lithium isn't?
- Freezing point of oxygen-18 water
- Why do branched chain compounds have lower boiling points than the corresponding straight chain isomers?
- Why do transition elements make colored compounds?
- Improving Elephant Toothpaste experiment
- What's the difference between reactant, excess reactant and limited reactant in a balanced equation?
- Michaelis-Menten mechanism of enzyme-catalyzed reactions
- Why first water and then acid?
- What is the molecular structure of xenon hexafluoride?
- Choice of preferred IUPAC names
- What is the analogue of “molecule” for ionic compounds?
- What are the products of the dissociation of sodium bicarbonate in water? What is the relative pH of the solution?
- What is the difference between ignition temperature and flash point?
- Why are covalent bonds directional?
- Why do methane molecules have 15 degrees of freedom?
- What is K2O-nSiO2-xH2O?
- What do the different grades of chemicals mean?
- Reviving Li-ion battery in freezer?
- How to properly store acids at home?
- Does a diatomic gas have one or two vibrational degrees of freedom?
- Is it actually possible to dispose of a body with hydrofluoric acid?
- Na+ or Ca2+ . Which ion has the larger radius?

- How does water evaporate completely when at room temperature?
- Do electronic balance weighings still need to be corrected for buoyancy error?
- Most probable point for finding an electron in the 1s orbital of a Hydrogen atom
- Misleading features of Lewis Dot Representation
- Why are indicators used only in the form of dilute solutions?
- Is it correct to say that ethenol is an alcohol?
- What visual observations can confirm that a reactant is the limiting reagent?
- How exactly do sulfites prevent oxidation of wine?
- Is there a way to “electroplate” wood with copper?
- Elements which do not form oxides
- What is the differences between partial pressure and vapour pressure?
- The shapes of molecules
- Etymology of saturation degrees (-ane, -ene, -yne) in aliphatic compounds
- The impossibility of 100% ionic bond
- Arrows used in chemical reactions
- Dipole moment - calculation of percentage ionic character
- Is melting/boiling point of ionically bonded substance higher than of covalently bound?
- What happens to the argon in the Haber-Bosch process?
- How do I figure out the hybridization of a particular atom in a molecule?
- How do they ensure there is one electron on an oil drop in Millikan's oil drop experiment?
- Image of crystal structure
- Would the concentration of oxygen around fire increase as we get close to the fire (from the outside)
- What is the condensation point of water?
- Are children's sparklers based on a magnesium reaction?
- Oxidation of aluminum and manufacturing of electrolytic capacitors
- Why is entropy favorable?
- How is aqua regia stored?
- Why exactly does precipitation occur?
- What is the melting point of diamond?
- Why do we use $J(J+1)$ instead of J^2 in the rigid body rotor energy equation?
- Le Chatelier's principle: Are there any exceptions?
- What is the difference between a coefficient and a subscript in a chemical equation?
- How do I calculate the degree of dissociation in equilibrium?
- Which is the most acidic hydrogen in vitamin C
- What is the carbon dioxide content of a soda can or bottle?
- Why do different substances have different boiling points?
- Why copper sulphate is a catalyst in this reaction
- Enrichment of D2O
- Why do we use helium in balloons?
- Positive or Negative Anode/Cathode in Electrolytic/Galvanic Cell
- What makes Coke acidic?
- Why do the melting and boiling points of the noble gases increase when the atomic number increases?
- Preparation of iodine solution
- What is the difference between ψ, $|\psi|^2$, radial probability, and radial distribution of electrons?
- Minimal basis for Li
- Volume of orbitals
- Why are metal oxides basic and non-metals' acidic or neutral
- What would be the effect of the addition of an inert gas to a reaction at equilibrium?
- Are metallic/ionic bonds weaker than covalent bonds?

- Which is the strongest base?
- Derivation of the Temperature Dependence of the Boltzmann Distribution
- How to find the hybridization of an atom in a molecule?
- What are the differences between diesel and unleaded gasoline?
- How to calculate the concentration H3O+ in a solution with pH=6.99?
- Why do we use helium in balloons?
- Why does potassium react more violently with water than lithium?
- What role does sulfuric acid play in the titration of oxalic acid and potassium permanganate?
- How do I extract cyanide from apple seeds?
- Why are there multiple lines in the hydrogen line spectrum?
- What is SPDF configuration?
- Why do we not generally have “enneane”?
- Which has stronger hydrogen bonds: water or ice?
- Why does adding salt to boiling water cause it to flare up suddenly?
- What bond exists in “red oxygen”, and can something similar happen with hydrogen?
- Why DNA is negatively charged and what makes it so?
- Melting points and boiling points of primary alcohols do not follow the same trend
- Differences between phenols and alcohols
- Why does carbon monoxide have a greater affinity for hemoglobin than oxygen?
- Why doesn't water burn?
- Half-Life of Radioactive Isotopes: Why? How?
- Would it be possible to destroy gold?
- are half of “H2SO4 pH sample problem” webpages just wrong, or am I wrong?
- How to name binary (inorganic) compounds given their chemical formula, and vice-versa?
- Why does C=O have a larger dipole moment than C-O?
- Why do most carboxylic acids have high pKa (~5) in spite of having a conjugate base ion that is stabilized by resonance?
- Search by CAS Registry name to obtain trackable accession: ie InChi?
- Calculate pH of a weak acid and weak base neutralization reaction
- What is the proof of complete ionic dissociation in water?
- What causes the “rotting fish smell”?
- Which chemical reactions don't involve bond breaking?
- What is a neutral atom?
- Difference between conformational, constitutional, and structural isomers and the same and different molecules
- Lewis structure for magnesium diboride
- Rules of naming ionic compounds
- Chemical equation that can be balanced in infinite number of ways?
- Would standing next to a pool of mercury do you any harm?
- Why does the melting point get lower going down the Alkali Metal Group with increase in atomic number?
- How can melting point equal freezing point?
- Difference between thermodynamic and kinetic stability
- What is the correct name of 3-isopropyl-4-methylhexane?
- How does chlorine in water evaporate?
- How to decide acidic or basic nature of oxides
- Why is it OH- and not HO-? (duplicate)
    - Why is methane's molecular formula conventionally “CH_4”, while water is “H_2O” (among others)?
- How is the light from a fire emitted?

- What is the strongest oxidising agent?
- Why don't we explode after drinking water?
- How to chose wavelength in spectrophotometry? How to use Beer-Lambert Law?
- Reason for the stronger acidic property of phenol than alcohol
- Why does wood burn but not sugar?
- How can the solid state structure of cyclopentadienyllithium be explained?
- Why do we use Δ to mean heating?
- Is there an easy way to remember charges on ions?
- How to find pH by mixing two solutions of different concentrations?
- Why can the acidic strength between H2S and HCl be explained on the basis of electronegativity but H2S and H2O can't?
- Does a neutral dimercury molecule exist?
- Properties of Water
- Which is anode and which is cathode?
- How could the ideal gas law be discovered from experiments on real gases?
- Why does the beryllium 2+ ion have a larger radius than a helium atom?
- Why does zinc react with sodium hydroxide?
- Why can a diamond be broken using a hammer if it's the hardest natural substance known?
- Can a long polymer chain interact with itself via van der Waals forces?
- Why proton concentration is divided by 10^{-7}?
- Reaction between NaOH and CO2
- Flame Test Spectrograms Not Lining Up With Reality
- Why doesn't H_4O^{2+} exist?
- amu and g/mol relation
- Difference between shells, subshells and orbitals
- How do non-polar substances dissolve in non-polar solvents?
- Storing hydrofluoric acid before the invention of plastics
- When a candle burns, why does the top of wick glow if bottom of flame is hottest?
- Does the main washing effect of soap come from foam?
- Why does electrolysis of aqueous concentrated sodium bromide produce bromine at the anode?
- How is the potential energy between two atoms measured?
- Does concentration of salt increase or decrease rate of rusting?
- Tetrahedral or Square Planar
- What purpose does mercury dichloride have in fireworks?
- Why is it considered acid rain with pH <5.6?
- How do you explain pKa to non-professional?
- Why is only the carbonate anion used to precipitate Barium?
- What’s the biggest organic molecule that could have a smell?
- How to predict the decomposition products of for example barium carbonate?
- organophosphorus compounds - How to convert P2O5 concentration to H3PO4 concentration?
- everyday chemistry - Will alcohol or soap damage plastic or rubber?
- Covalent Bond/Hydrogen Bond
- Explanation for why nickel turns green in hydrochloric acid
- Is black tea a pH indicator?
- Calcium ion and sulfate did not form precipitate
- How do Precipitation Reactions behave in the Absence of Gravity?
- Heat involved in isenthalpic process
- Unexpected result (sodium hypochlorite & steel wool)
- Why does chlorine have a higher electron affinity than fluorine?
- Lewis Structure of OF+
- Why is O2 a biradical?

- Reason for the generation of London Dispersion Forces
- How are the number of tetrahedral voids twice the number of octahedral voids in a CCP structure?
- What are the correct resonance structures of nitrous oxide?
    - + question “Socratic” : What is the Lewis electron dot formula (Lewis structure) of Nitrous Oxide (N_2O)?
- atmospheric chemistry - Why does nitrous oxide have 300 times the global warming potential of CO2?
- experimental chemistry - How come water would not affect the results of a titration?
- gas laws - Pressure Vs Volume plot for real and ideal gasses
- aqueous solution - Taking volume contraction into account when mixing water with ethanol
- inorganic chemistry - Calculating pH of rain water
- nomenclature - What is a word for “atom or molecule”?
- everyday chemistry - How would I measure the Carbon Dioxide content in Coca Cola over a period of time?
- Software to assist drawing of complex, three-dimensional skeletal formula from scratch or from existing crystal structure
- How does acetone remove pencil marks?
- Neutralizing a sulfuric acid spill
- How quickly is converting a H2O + D2O mixture to HDO?
- Is anode actually ever negative?
- Dimethylethylamine or Ethyldimethylamine?
- Why does N(OH)3 not exist?
- membrane for a reverse osmosis desalination experiment
- Can someone intuitively explain the reason for the units of entropy (J/K)?
    - Why can entropy be measured in joules per kelvin?
- How does pH of soda drink vary with time
- Tools for Molecular Simulation
- What exactly is temperature?
- How to create black precipitate in clear liquid
- What is this copper compound I made?
- Is the salt of a weak acid and a weak base also a weak electrolyte?
- is there any difference between glycerin and glycerol?
- …

Autres sites de questions et réponses

- https://socratic.org/chemistry (licence CC-BY-NC-SA)
- https://www.quora.com/topic/Chemistry
- …

Questions diverses

- Ça sent le gaz, mais pourquoi le gaz sent? Michel Alberganti — 22 janvier 2013

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