CHAPTER 10 PHYSICAL CHARACTERISTICS OF GASES ANSWER KEY

What is the physical characteristics of gas? The Properties of Gases. Gases have three characteristic properties: (1) they are easy to compress, (2) they expand to fill their containers, and (3) they occupy far more space than the liquids or solids from which they form.

When 1 mol of a real gas is condensed to a liquid, the volume shrinks by a factor greater than 1000.? When 1 mol of a real gas is condensed to a liquid, the volume shrinks by a factor of about 1000. Molecules in a gas are far apart. They are much closer together in a liquid. Molecules in a gas are easily squeezed closer together as the gas is compressed.

Why liquids tend to form spherical droplets decreasing surface area to the smallest size possible? Because a sphere has the smallest possible surface area for a given volume, intermolecular attractive interactions between water molecules cause the droplet to adopt a spherical shape. This maximizes the number of attractive interactions and minimizes the number of water molecules at the surface.

Why do polar gas molecules experience larger deviations from ideal behavior than nonpolar molecules? Explain why polar gas molecules experience larger deviations from ideal behavior than nonpolar molecules when all other factors (mass, temperature, etc) are held constant. Polar molecules attract neighboring polar molecules and often move out of their straight-line paths because of these attractions.

What are the 10 characteristics of gas?

What are the 4 physical measurable characteristics of a gas? The measurable properties of gases are mass, volume, pressure and temperature.

Will a volume of gas shrink or will it expand when cooled? A gas expands when heated and condenses when cooled. Charles' Law predicts a four-fold decrease in the volume of a gas that is cooled from room temperature to the temperature of liquid nitrogen (77 K).

When 1 mole of gas is placed under STP conditions what is the volume? What is the volume of 1 mole of an ideal gas at STP (Standard Temperature and Pressure = 0 °C, 1 atm)? So, the volume of an ideal gas is 22.41 L/mol at STP. This, 22.4 L, is probably the most remembered and least useful number in chemistry.

Can compressibility be greater than 1? If the compressibility factor is greater than 1 then the gas shows positive deviation and will be less compressible than expected. Example: Helium gas, Hydrogen gas.

Why are the drops of liquid or bubbles of a gas spherical in shape? The shape of drops and bubbles is spherical because the liquid surface tends to have the minimum area possible due to surface tension. A sphere's surface has the smallest area. Surface tension is the tendency of fluid surfaces to shrink into the minimum surface area possible.

Why do large liquid drops flatten? When drop is small, surface tension is large as compared to weight of drop. But when the size of drop increas its weight also increases. As a result of this, weight is more than the surface tension. Hence, drops are flat.

What is the property of liquid molecules forming themselves as small liquid spheres? Surface tension causes liquids to form spheres in free fall or zero gravity (see Figure 10.3 “Liquids and Gravity”: the “floating” water isn't in the shape of a sphere by accident; it is the result of surface tension). Surface tension is also responsible for the fact that small insects can “walk” on water.

How does pressure affect how closely a gas behaves like an ideal gas? Generally, a gas behaves more like an ideal gas at higher temperature and lower pressure, as the potential energy due to intermolecular forces becomes less significant compared with the particle's kinetic energy, and the size of the molecules becomes less significant compared to the empty space between them.

How does the kinetic molecular theory explain the following properties of solids? Molecules that make up a solid are thought to be very relatively tightly packed molecules. These molecules will gently sway in place without changing physical locations. In general, they are not affected by the shape or volume of the container that is holding them.

What is the derivation of real gases from ideal Behaviour? The deviation of real gas from ideal gas behaviour occurs due to the assumption that if pressure increases the volume decreases. The volume will approach a smaller number but will not be zero because the molecules will occupy some space that cannot be compressed further.

Which has more density, liquid or solid? The density of solids is higher than that of liquids because the particles are more compactly arranged in a solid with very less intermolecular spaces between them. In liquids, these intermolecular spaces are more and hence they are less dense.

Why is it easy to compress a gas? The simple answer: because there is lots of space between gas molecules. This space allows us to put pressure on gas, and force it in a smaller container.

What is the process called when a solid changes directly into a gas? Sublimation is the change of state in which a solid changes directly into a gas.

Why does gas expand when heated? The particles of gas have large space between them and hence less force of attraction is there, so the gas expands. On heating, the heat energy enhance the kinetic energy of these particles of gas, which increases the extent of expansion.

What do you mean by diffusion and effusion? Diffusion is defined as the ability of gases to mix with each other without requiring bulk motion. Effusion is also the ability

of a gas to escape or travel through a small hole with a small aperture from a place of high concentration to low concentration.

What happens when gases are heated? Heating a gas increases the kinetic energy of the particles, causing the gas to expand. In order to keep the pressure constant, the volume of the container must be increased when a gas is heated. This law explains why it is an important safety rule that you should never heat a closed container.

What is the physical state of a gas? Gas is the state of matter in which the particles are far apart, fast-moving and not organised in any particular way. Gases are substances that exist in the gaseous state, which is one of the three fundamental states of matter. Gases are highly compressible and feature very large intermolecular distances.

What is the physical classification of a gas? Gaseous state The particles it contains aren't uniform in size or shape. Their molecules are loosely bound together, leaving plenty of room for them to move about freely and continuously. In comparison to solids and liquids, gases are very compressible.

What are the physical characteristics of an ideal gas? Characteristics of Ideal Gas The critical characteristics of an ideal gas are as follows: They are made up of molecules and atoms, which are tiny particles. Although the particles individually have no volume, the gas as a whole does. It signifies that the particles present in the gas have a very small volume.

What characteristics best describes a gas? Gases have the following characteristics: No definite shape (takes the shape of its container) No definite volume. Particles move in random motion with little or no attraction to each other.

What do you think was the researchers guess for what happened to the Maya? Scientists believe this deforestation led to the fall of the Maya Empire. It caused climate change in the form of rising temperatures and low rainfall. These factors combined to cause a severe drought. The drought lasted nearly a century.

What was the great mystery of the Mayas? Answer: The Maya civilization of ancient Mesoamerica left behind a rich legacy of art, architecture, astronomy,

mathematics, and literature. One of the greatest mysteries of the Maya is the sudden collapse of their civilization around 900 CE.

What are the 2 main theories as to why the Maya disappeared? But by 950 CE, the Mayan civilization had collapsed. No one knows for certain how it happened, and no one knows for sure how many people died. Archaeologists have different theories, which include starvation, drought, climate change, disease, and warfare.

What is the strongest reason thought to have caused the disappearance of the Maya? Scholars have suggested a number of potential reasons for the downfall of Maya civilization in the southern lowlands, including overpopulation, environmental degradation, warfare, shifting trade routes and extended drought. It's likely that a complex combination of factors was behind the collapse.

What did the Mayans know that we don't? Known largely for their calendars, and that date that was largely misinterpreted (see also “what we don't know”), the contributions the Maya made are vast—astronomy, mathematics and architecture—to name a few. And while the Maya were working out how to make rubber and tracking the planets, the Europeans were—not.

What caused the fall of the Maya? A strong contender is that drought led to the collapse. Recent studies on the Mesoamerican paleoclimate suggest that around the ninth century, a prolonged water shortage occurred in some regions of the Maya lowlands, leading to crop losses and localized famines.

What explorer killed the Mayans? The Itza Maya and other lowland groups in the Petén Basin were first contacted by Hernán Cortés in 1525, but remained independent and hostile to the encroaching Spanish until 1697, when a concerted Spanish assault led by Martín de Urzúa y Arizmendi finally defeated the last independent Maya kingdom.

What do scientists hypothesize happened to the Mayans? Drought theory. The drought theory holds that rapid climate change in the form of severe drought (a megadrought) brought about the Classic Maya collapse.

How have researchers determined that the Maya were affected by drought? The ice-core evidence from Greenland indicates that around the time of the Maya

Collapse, a minimum in solar insolation and a low in solar activity occurred, accompanied by severe cold and dryness over Greenland, indicating hemispheric climatic conditions propitious for drought in the Maya Lowlands.

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What happened to Maya at the end of Maya and the Three? Lord Mictlan ends up killing all of his gods by stealing their hearts to obtain power, much to their horror and anger. Maya's stepmother ends up giving birth to twins. In the end, Maya and Zatz are individually transformed into the sun and moon, allowing them to see their family at dawn and dusk.

What is a mandatory settlement conference statement? Mandatory Settlement Conference Statement The settlement conference statement must include necessary information to concisely support issues of: Liability, Damages, A settlement demand and offer, An itemization of damages, both special and general, and.

What happens after a mandatory settlement conference in CA? If a settlement is reached, the settlement documents are prepared, signed by all parties, and thereafter submitted to a judge for approval. The judge will then review the settlement to determine whether it is fair and reasonable. If so, the judge will then issue an Award and/or Order approving the settlement.

What is an MSC statement? Mandatory Settlement Conference (“MSC”), the Plaintiff must serve on the Defendant a written settlement proposal, which must include a specific monetary demand (and, if applicable, a demand for specific remediation or other action).

Is a settlement conference a good thing? If you settle your dispute in a settlement conference, you'll feel that you were truly heard and that justice was done in a more personalized way. It will give you greater confidence in the justice system and its players, including judges and lawyers.

Is a mandatory settlement conference the same as mediation? How is An MSC Different from a Mediation? An MSC differs from a mediation in that MSCs are usually conducted by a judge— sometimes the same judge hearing your case. MSCs usually take place at the courthouse and the Page 5 5 ©2011 Albertson & Davidson, LLP parties do not have to pay a mediator's fee.

What to expect at an MSC? This is known as a mandatory settlement conference (MSC). During this meeting, you will meet with the claims administrator and a workers' compensation judge. The judge works with both parties to help reach an agreement. If there is no settlement during the MSC, the case will go on the judge's docket for trial.

Can you change your mind after a settlement conference? When the court convenes, the judge will look at the transcripts, ask questions, and then approve your agreement. It's imperative that you understand everything at this point because you can't go back later to change what you've agreed to.

What happens after a deu rating? If the rating indicates that you have some permanent disability, you should automatically begin to receive permanent disability payments. Payments are made in installments, every two weeks, for the number of weeks shown on the rating, less any permanent disability payments made to you prior to the rating.

Are settlement negotiations confidential in California? Confidentiality protection in settlement negotiations comes from Evidence Code Section 1152. Section 1152 states that evidence of a compromise or offer of compromise is inadmissible to prove liability for loss or damage. The protections of Section 1152 extend to conduct and statements made in negotiation of an offer.

What is the purpose of an MSC? An MSc programme provides further education, networking opportunities, research projects and practical field and lab work. Students gain a deeper understanding of their study area of choice and the responsibilities inherent to working in that field professionally.

What is an MSC hearing in California? A Mandatory Settlement Conference (MSC) is typically the first conference or hearing at the Workers' Compensation

Appeals Board (WCAB). The MSC is an opportunity to discuss settlement with the representatives of the insurance carrier/employer.

What is an MSC court case? The purpose of a Mandatory Settlement Conference (or “MSC”) is to encourage parties in a divorce, legal separation or nullity case to settle their matter in whole or in part. Accordingly, all parties must attend this court appearance.

What type of hearing is MSC? What Is A MSC? A Mandatory Settlement Conference (MSC) is typically the first conference or hearing at the Workers' Compensation Appeals Board (WCAB). The MSC is an opportunity to discuss settlement with the representatives of the insurance carrier/employer.

What is a settlement disclosure statement? A settlement statement summarizes all the costs and credits associated with a mortgage loan or refinance. In 2015, borrowers began getting what's now called a closing disclosure — a newer, more streamlined version of the previously used settlement statement.

What is a settlement conference in law? What is a settlement conference? In a settlement conference, a judge or volunteer attorney assists the parties by evaluating the strengths and weaknesses of the case and attempting to negotiate a settlement of the dispute, but without making any decisions or orders in the case.

What is a mandatory mediation clause? Mandatory Mediation a. The PARTIES hereto agree prior to commencing any legal action relating to any Claim, as defined herein, to submit the Claim to a mandatory good-faith mediation process (“Mediation”).

Wiring Schematic for Diesel Dodge Cummins: A Troubleshooting Guide

Q: Where can I find the wiring schematic for my diesel Dodge Cummins?

A: The wiring schematic for your Dodge Cummins can be found in the vehicle's service manual. The manual can be obtained from the manufacturer or a dealership. Alternatively, you can search online for the schematic using your vehicle's make, model, year, and engine type.

Q: How do I use the wiring schematic to troubleshoot electrical problems?

A: The wiring schematic is a diagram that shows the electrical connections in your vehicle. It can be used to identify faulty components, trace wires, and diagnose electrical problems. To use the schematic, locate the area of the electrical system that you're troubleshooting and follow the wires from the component in question.

Q: What are the most common electrical problems with diesel Dodge Cummins?

A: Some of the most common electrical problems with diesel Dodge Cummins include:

- Battery drain
- Alternator failure
- Starter problems
- Faulty wiring
- Blown fuses

Q: How can I prevent electrical problems with my Dodge Cummins?

A: There are a few things you can do to prevent electrical problems with your Dodge Cummins:

- Keep your battery terminals clean and tight.
- Inspect your alternator regularly and replace it if it's failing.
- Don't overload your electrical system with too many accessories.
- Avoid driving through water or mud, which can damage electrical components.
- Have your electrical system inspected by a mechanic regularly.

Q: Where can I get help with electrical problems on my Dodge Cummins?

A: If you're having trouble troubleshooting electrical problems on your Dodge Cummins, you can consult a mechanic or an online forum. There are also many helpful resources available online, including wiring diagrams, troubleshooting guides, and technical support from other Dodge Cummins owners.

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