Matter and its states

物质与物质的状态

Date · 日期 _____ Topic · 知识点 1/3

CUES · QUESTIONS

提示 · 问题

1. Definition of matter?
   > 物质的定义?
2. The 4 common states?
   > 4 种常见状态?
3. Which state is compressible?
   > 哪种状态可压缩?
4. Liquid: shape and volume?
   > 液体：形状和体积?

Cover the notes. Answer each cue from memory. · 盖住右边的笔记，凭记忆回答每个提示。

NOTES

笔记

1 · Worked example · 1 · 看一道例题 Copy one example from the page. Next to each line write WHY in a few words. · 抄一道例题，每一行旁边用几个字写「为什么」。

2 · Fill in the blanks · 2 · 填空题 Cover the steps and redo it. Leave a gap where you are unsure. · 盖住步骤自己重做，不确定的地方先空着。

3 · Your turn · 3 · 自己做 A new question. Then check it against the answer. · 做一道新题，然后对答案。

SUMMARY — IN MY OWN WORDS, TWO SENTENCES

小结——用自己的话，两句

Hardness, malleability, ductility, lustre, viscosity, diffusion, vapour

硬度、可锻性、延性、光泽、黏度、扩散、蒸气

Date · 日期 _____ Topic · 知识点 2/3

CUES · QUESTIONS
提示 · 问题

1. Malleability?
   > 可锻性?
2. Ductility?
   > 延性（可拉成丝）?
3. Hardness?
   > 硬度?
4. Viscosity: honey vs water?
   > 黏度：蜂蜜和水比?

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笔记

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SUMMARY — IN MY OWN WORDS, TWO SENTENCES
小结——用自己的话，两句

System vs phase

体系与相

Date · 日期 _____ Topic · 知识点 3/3

CUES · QUESTIONS

提示 · 问题

1. System?
   > 体系?
2. Phase?
   > 相?
3. Phases in oil + water? In salt water?
   > 油＋水有几个相? 盐水呢?
4. A mixture of two gases: how many phases?
   > 两种气体的混合物有几个相?

Cover the notes. Answer each cue from memory. · 盖住右边的笔记，凭记忆回答每个提示。

NOTES

笔记

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SUMMARY — IN MY OWN WORDS, TWO SENTENCES

小结——用自己的话，两句

Physical Properties of Matter

物质的物理性质

• Formula and trap sheet

公式与陷阱一页纸

Everything you need before a test, on the fewest pages. Fold it and keep it in your binder. · 考前要看的东西，压缩在尽量少的页数里。折起来放进文件夹。

Matter and its states · 物质与物质的状态

REMEMBER · 记住

- Matter = has mass + takes up space. 4 states: solid, liquid, gas, plasma.
  > 物质＝有质量＋占空间。4 种状态：固、液、气、等离子体。
- Solid: definite shape and volume. Liquid: indefinite shape, definite volume. Gas: both indefinite.
  > 固体：形状体积都固定。液体：形状不定、体积固定。气体：都不固定。

WATCH OUT · 当心

- Liquid has indefinite volume → it is the shape that changes; volume is definite.
  > 液体体积不固定 → 变的是形状，体积固定。

Hardness, malleability, ductility, lustre, viscosity, diffusion, vapour · 硬度、可锻性、延性、光泽、黏度、扩散、蒸气

REMEMBER · 记住

- Malleable = sheets; ductile = wires; hardness = resists scratching; lustre = shiny vs dull.
  > 可锻性＝成片；延性＝成丝；硬度＝抗刮；光泽＝亮或暗。
- Viscosity = resistance to flow (honey high). Diffusion = high → low concentration to equilibrium.
  > 黏度＝抗流动（蜂蜜高）。扩散＝高→低浓度直到平衡。

WATCH OUT · 当心

- Malleable = wire → no: malleable = sheet, ductile = wire.
  > 可锻性＝成丝 → 错：可锻性＝成片，延性＝成丝。
- High viscosity = runny → high viscosity = thick, slow.
  > 黏度高＝稀 → 黏度高＝稠、流得慢。

System vs phase · 体系与相

REMEMBER · 记住

- System = what you are studying. Phase = a uniform part of the system.
  > 体系＝研究对象。相＝体系中均一的部分。
- Different states or layers = different phases. Gas mixtures = 1 phase. Solutions = 1 phase.
  > 不同状态或分层＝不同的相。气体混合物＝1 相。溶液＝1 相。

WATCH OUT · 当心

- Two gases = 2 phases → gases always mix into 1 phase.
  > 两种气体＝2 相 → 气体总是混成 1 相。
- Salt water = 2 phases (two substances) → 1 phase.
  > 盐水＝2 相（两种物质）→ 1 相。