Thermodynamics

A-Level Physics · Vocabulary in context

Word	Example
internal energy /ɪnˈtɜːnl ˈenədʒi/	Heating the gas raises its **internal energy**.
kinetic energy /kɪˈnetɪk ˈenədʒi/	A fast car has a lot of **kinetic energy**.
molecule /ˈmɒlɪkjuːl/	A water **molecule** has two hydrogen atoms and one oxygen atom.
translational /trænˈsleɪʃənl/	**Translational** motion means moving from place to place.
rotational /rəʊˈteɪʃənl/	A spinning wheel has **rotational** energy.
vibrational /vaɪˈbreɪʃənl/	Atoms in a solid have **vibrational** energy.
ideal-gas /aɪˈdɪəl gæs/	The **ideal-gas** equation is $pV = nRT$. $$pV = nRT$$
intermolecular /ˌɪntəməˈlekjʊlə/	**Intermolecular** forces hold the water molecules together.
ideal gas /aɪˈdɪəl gæs/	An **ideal gas** follows $pV = nRT$ exactly. $$pV = nRT$$
temperature /ˈtemprɪtʃə/	The thermometer shows the water's **temperature**.
pressure /ˈpreʃə/	A sharp knife puts a large **pressure** on the bread.
volume /ˈvɒljuːm/	The **volume** of the box is $2\ \text{m} \times 1\ \text{m} \times 1\ \text{m} = 2\ \text{m}^3$. $$2\ \text{m} \times 1\ \text{m} \times 1\ \text{m} = 2\ \text{m}^3$$
amount of substance /əˈmaʊnt ɒv ˈsʌbstəns/	The **amount of substance** is measured in moles.

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thermodynamic temperature /ˌθɜːməʊdaɪˈnæmɪk ˈtemprɪtʃə/	**Thermodynamic temperature** starts at absolute zero.
phase change /feɪz tʃeɪndʒ/	Melting is a **phase change**.
latent heat /ˈleɪtənt hiːt/	Ice takes in **latent heat** as it melts.
piston /ˈpɪstn/	The gas pushes the **piston** out.
first law of thermodynamics /fɜːst lɔː ɒv ˌθɜːməʊdaɪˈnæmɪks/	The **first law of thermodynamics** is about heat, work and internal energy.
conservation of energy /ˌkɒnsəˈveɪʃn ɒv ˈenədʒi/	**Conservation of energy** means energy is never made or destroyed.
isothermal /ˌaɪsəˈθɜːml/	In an **isothermal** change, the temperature stays the same.
adiabatic /ˌædiəˈbætɪk/	In an **adiabatic** change, no heat goes in or out.
heat capacity /hiːt kəˈpæsɪti/	A big pot has a larger **heat capacity** than a small one.
monatomic /ˌmɒnəˈtɒmɪk/	Helium is a **monatomic** gas: its particles are single atoms.

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