Thermodynamics

A-Level Physics · Vocabulary in context

Word	Example
internal energy /ɪn'tɜ:nl 'enədʒi/	Heating the gas raises its **internal energy**.
kinetic energy /kɪ'netɪk 'enədʒi/	A fast car has a lot of **kinetic energy**.
molecule /'mɒlɪkju:l/	A water **molecule** has two hydrogen atoms and one oxygen atom.
translational /træn'sleɪʃənl/	**Translational** motion means moving from place to place.
rotational /rəʊ'teɪʃənl/	A spinning wheel has **rotational** energy.
vibrational /vaɪ'breɪʃənl/	Atoms in a solid have **vibrational** energy.
ideal-gas /aɪ'dɪəl gæs/	The **ideal-gas** equation is $pV = nRT$. $$pV = nRT$$
intermolecular /ˌɪntəmə'lekjʊlə/	**Intermolecular** forces hold the water molecules together.
ideal gas /aɪ'dɪəl gæs/	An **ideal gas** follows $pV = nRT$ exactly. $$pV = nRT$$
temperature /'temprɪtʃə/	The thermometer shows the water's **temperature**.
pressure /'preʃə/	A sharp knife puts a large **pressure** on the bread.
volume /'vɒlju:m/	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 /ə'maʊnt ɒv 'sʌbstəns/	The **amount of substance** is measured in moles.

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thermodynamic temperature /ˌθɜ:məʊdaɪ'næmɪk 'temprɪtʃə/	**Thermodynamic temperature** starts at absolute zero.
phase change /feɪz tʃeɪmdʒ/	Melting is a **phase change**.
latent heat /'leɪtənt hi:t/	Ice takes in **latent heat** as it melts.
piston /'pɪstn/	The gas pushes the **piston** out.
first law of thermodynamics /fɜ:st lɔ: ɒv ˌθɜ:məʊdaɪ'næmɪks/	The **first law of thermodynamics** is about heat, work and internal energy.
conservation of energy /ˌkɒnsə'veɪʃn ɒv 'enədʒi/	**Conservation of energy** means energy is never made or destroyed.
isothermal /ˌaɪsə'θɜ:ml/	In an **isothermal** change, the temperature stays the same.
adiabatic /ˌædiə'bætɪk/	In an **adiabatic** change, no heat goes in or out.
heat capacity /hi:t kə'pæsɪti/	A big pot has a larger **heat capacity** than a small one.
monatomic /ˌmɒnə'tɒmɪk/	Helium is a **monatomic** gas: its particles are single atoms.