Edexcel Physics A-Level

Topic 9.1 - Thermal Physics

Flashcards

State the equation for specific heat capacity.

State the equation for specific heat capacity.

$$\Delta E = mc\Delta\theta$$

What is specific heat capacity?

What is specific heat capacity?

It is the amount of energy needed to raise the temperature of 1kg of a substance by 1K (or 1°C).

What is specific latent heat?

What is specific latent heat?

Specific latent heat is the energy required to change the state of a substance without a change of temperature.

State the equation for specific latent heat.

State the equation for specific latent heat.

$$\Delta E = \Delta ml$$

What is internal energy?

What is internal energy?

The sum of the molecules' randomly distributed potential and kinetic energies.

What can be said about the particles of a substance at absolute zero?

What can be said about the particles of a substance at absolute zero?

At absolute zero, the particles have zero kinetic energy.

Express absolute zero in degrees celsius.

Express absolute zero in degrees celsius.

$$0K = -273°C$$

What is temperature a measure of?

What is temperature a measure of?

The average kinetic energy of the molecules in a given substance.

State the ideal gas equation.

State the ideal gas equation.

$$pV = NkT$$

What is the relationship between pressure and temperature?

What is the relationship between pressure and temperature?

Pressure and temperature are directly proportional.

What is the relationship between pressure and volume?

What is the relationship between pressure and volume?

Pressure and volume are inversely proportional.

What is a black body?

What is a black body?

A black body is one that absorbs radiation of all wavelengths.

What determines the spectrum of radiation emitted by a black body radiator?

What determines the spectrum of radiation emitted by a black body radiator?

The temperature of the body.

What law can be used to link the power of radiation emitted from a black body to its temperature?

What law can be used to link the power of radiation emitted from a black body to its temperature?

The Stefan-Boltzmann law.

State the Stefan-Boltzmann equation.

State the Stefan-Boltzmann equation.

$$L = \sigma A T^4$$