



DATA SHEET

SOLAR SYSTEM: JUPITER

The composition of Jupiter is similar to that of the Sun i.e. mostly hydrogen and helium. Deep in the atmosphere, pressure and temperature increase, compressing the hydrogen gas into a liquid. This forms largest ocean in the solar system, albeit of hydrogen rather than water. It has been suggested that around halfway to the planet's centre, the pressure becomes so great that electrons are squeezed off the hydrogen atoms, making the liquid electrically conducting like metal. Jupiter's fast rotation drives generates the planet's powerful magnetic field. It is thought that Jupiter has a central core of solid material or if it may be a thick, super-hot (50 000°C), dense soup made mostly of iron and silicate minerals (similar to quartz).

SOME FACTS ABOUT JUPITER

- 1 Jupiter is 5.2 Astronomical Units (AU) from the Sun. (778 million kilometres)
- 2 Temperature at 1 bar pressure/K = 165
- 3 Jupiter's atmosphere consists of helium and hydrogen which form cloud belts. The large red spot is a giant, rotating storm of rising gases.
- 4 It's mean density is: $1.33 \times 10^3 \text{ kg m}^{-3}$
- 5 It's comparative volume is 1316 (Earth = 1)
- 6 Jupiter also has several rings, but unlike the famous rings of Saturn, Jupiter's rings are very faint and made of dust, not ice.
- 7 Despite its size, Jupiter has the shortest day of any other planet; it only takes about 10 hours for a complete rotation.
- 8 The atmosphere has three layers. The top cloud is probably made of ammonia ice, while the middle layer is likely made of ammonium hydrosulfide crystals. The innermost layer may be made of water ice and vapour.