Blood is a complex chemical mixture. The chemicals in it dictate its colour, and some also contribute to its characteristic, slightly metallic odour. Here we take a look at some of these chemicals, as well as examining some of the differences that determine a person’s blood type.

**THE COLOUR OF BLOOD**

Haemoglobin is a protein found in blood, built up of smaller sub-units containing ‘haems’. These haems contain iron, and their structure gives our blood its red colour when oxygenated. Deoxygenated blood is a red colour – not blue!

Blood lost due to bleeding gradually turns brown, as haemoglobin is oxidised to methaemoglobin.

**THE SMELL OF BLOOD**

The compound that gives human blood its characteristic metallic odour is trans-4,5-epoxy-(E)-2-decenal. The metallic smell of metals and blood coming into contact with skin is largely due to oct-1-en-3-one, produced due to the reaction between oxidised skin lipids and the iron in haemoglobin.

**BLOOD TYPES**

Blood type is determined by the presence of antigens. Antigens are found on red blood cell surfaces; they can bind to antibodies and stimulate an immune response. Antibodies are proteins in blood plasma that help fight infection.

**APPROXIMATE WORLDWIDE DISTRIBUTIONS OF BLOOD TYPES**

The antibodies a blood type contains determines what blood can be received in transfusions. Someone with blood containing A antibodies cannot be given blood containing A antigens. O can be given to all as it contain no A or B antigens.