28.21 - Iron oxides and hydroxides; earth colours containing 70 % or more by weight of combined iron evaluated as Fe_2O_3.

2821.10 - Iron oxides and hydroxides

2821.20 - Earth colours

Earth colours with a basis of **natural** iron oxides, **containing 70 % or more** by weight of combined iron calculated as Fe_2O_3, fall in this heading. For the purposes of assessing whether the 70 % limit has been reached, account must be taken of the total iron content expressed as ferric oxide; thus a natural ferrous earth colour containing 84 % of ferric oxide (representing 58.8 % of pure iron) remains classified in the heading.

The heading also includes the following **artificial** oxides and hydroxides :

(A) IRON OXIDES

Ferric oxide (Fe_2O_3). Obtained from dehydrated ferrous sulphate or natural iron oxide. Finely divided powder, usually red but sometimes violet, yellowish or black (violet, yellow or black oxide). Used as a pigment (iron minium, jewellers' rouge or colcothar), either in the pure state (in which case it is classified in this heading), or mixed with clay, calcium sulphate (Venetian red), etc. (it then falls in **Chapter 32**). It is used for making ordinary or anti-rust paints, compounds for burnishing metal or polishing glass, and vitrifiable compounds used to render the mass fusible in the manufacture of bottle-glass. It also serves for preparing thermite (mixed with aluminium powder), and for purifying coal gas, etc.

(B) IRON HYDROXIDES

(1) **Ferrous hydroxide** ($Fe(OH)_2$). Obtained by the action of an alkali base on a ferrous salt. White solid which discolours in the presence of oxygen, turning into ferric hydroxide.

(2) **Ferric hydroxide** (brown oxide) ($Fe(OH)_3$). Prepared by the action of an alkali base on a ferric salt. A rust-coloured, reddish brown or violet-glinting product used as a pigment, either alone - in which case it is classified here - or mixed with carbon, Prussian brown, etc. (saffron or Mars yellow), when it falls in **heading 32.06**. Ferric hydroxide is used in the manufacture of complex colours (Van Dyck brown, Van Dyck red, " English brown ", " Swedish brown "). It is used in the pure state as an antidote to arsenic poisoning.

It is an amphoteric hydroxide which, after oxygenation, gives the ferrates of heading 28.41.

This heading **excludes** :

(a) Ferrous earth colours containing less than 70 % by weight of combined iron calculated as Fe_2O_3, or mixed together with other earth colours; micaceous iron oxide (**heading 25.30**).

(b) Iron ores of **heading 26.01**, e.g., red haematite (including the oxides specular iron ore and martite), brown haematite (*minettes*, the hydrated oxide containing iron and calcium carbonates), limonite (hydrated oxide), magnetite (magnetic oxide).

(c) Iron scalings, crude oxides which become detached from the surface of iron brought to red heat or hammered (**heading 26.19**).

(d) Alkaline iron oxide for the purification of gas (**heading 38.25**).

(e) Iron oxide (haematite) in the form of semi-precious stones (**heading 71.03** or **71.05**).