



VKR TEX - Tutorials

Manufacture of All Kinds of Auto loom Fabrics and Natural Dye Fabrics.

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Orcein

Orcein, also **archil**, **orchil**, **lacmus**, **litmus**, **Citrus Red 2**, and **C.I. Natural Red 28**, are names for dyes extracted from several species of lichen, also called orchella weeds, found in various parts of the world. Commercial archil is either a powder (called cudbear) or a paste. It is red in acidic pH and blue in alkaline pH.

Orcein is approved as a food dye, with E number E121. Its CAS number is [1400-62-0]. Its chemical formula is $C_{28}H_{24}N_2O_7$. It forms dark brown crystals.

Can be used to stain elastic fibers found in connective tissue.

Orcinol is extracted from archil lichen, *Rocella tinctoria*. It is then converted to orcein by ammonia and air. Orcein is a reddish-brown dye, orchil is a purple-blue dye. Orcein is also used as a stain in microscopy to visualize elastic fibers. It is a mixture of phenoxazone derivatives - hydroxyorceins, aminoorceins, and aminoorceinimines.

Another lichen-derived dye is litmus.

Cudbear

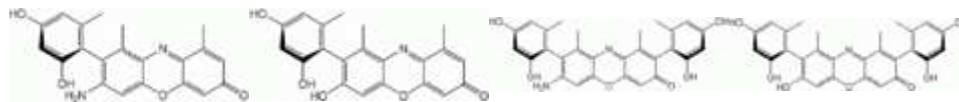
Cudbear is a dye extracted from orchil lichens that produces colours in the purple range. It can be used to dye wool and silk, without the use of mordant.

Cudbear was developed by Dr Cuthbert Gordon of Scotland: production began in 1758, and it was patented in 1766. The lichen is first boiled in a solution of ammonium carbonate. The mixture is then cooled and ammonia is added and the mixture is kept damp for 3-4 weeks. Then the lichen is dried and ground to powder. The manufacture details were carefully protected, with a ten-foot high wall being built around the manufacturing facility, and staff consisting of Highlanders sworn to secrecy. The lichen consumption soon reached 250 tons per year and import from Norway and Sweden had to be arranged.

Cudbear was the first dye to be invented in modern times, and one of the few dyes to be credited to a named individual.

Similar process was invented in France. The lichen is extracted by ammonia. Then the extract is acidified, the dissolved dye precipitates and is washed. Then it is dissolved in ammonia again, the solution is heated in air until it becomes purple, then it is precipitated with calcium chloride; the resulting insoluble purple solid is known as **French purple**, a fast orchid dye that did not fade in light like the other lichen dyes.

Gallery

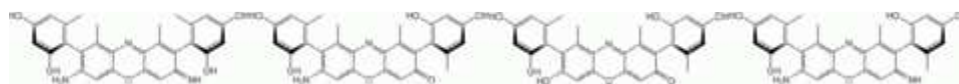


α -amino orcein

α -hydroxy orcein

β -amino orcein

β -hydroxy orcein



β -amino orceinimine

γ -amino orcein

γ -hydroxy orcein

γ -amino orceinimine