

## Dye Class Descriptions for Wool

**Orcoacid™** dyes find use in the piece dyeing of wool and worsted goods. Their inherent excellent leveling properties and wide shade selection make them especially suited to the men's and women's wear industry. These colors are generally applied from a strong acid bath (pH of 3.5-6.0). Some, such as the Alizarine dyes, are better applied from a weak acid bath (pH of 3.5-6.0).

**Orcolan Fast™** dyes represent a group of 1:1 acid metallized dyestuffs (chrome complex) with excellent leveling properties in strongly acid conditions such as carbonized wool. Although this line is somewhat limited in shade range it is very popular due to its ease of application and good fastness properties and finds wide use in stock dyeing especially in those areas destined for cross dyes (checks).

**Orco Milling™** dyes are of a larger molecular size than the standard level dyeing acid dyes and only require a small amount of acid to exhaust. The dyeing characteristics fall somewhere between the level dyeing acids (Orcoacids™) and the neutral premetallized (Orcolan Neutral™) dye classes. This line of colors as a whole is somewhat extensive and does offer brighter shades than does the neutral premetallized range with good to excellent fastness. Although used extensively in stock and package dyeing, Orco Milling™ dyes are used regularly in piece dyeing. In addition to careful selection of chemical auxiliaries, the pH and degree of temperature rise should be monitored at all times.

**Orcolan Neutral™** dyes are of the 2:1 premetallized acid colors of excellent solubility, light and wet fastness. These dyes are widely used on wool and nylon in either stock, yarn or piece form. These dyes are used to a greater degree in printing and continuous applications due to their high rate of fixation and wet fastness. Orcolan Neutral™ dyes, as their name implies, are best applied from a neutral dyebath containing an acid donor salt such as ammonium sulfate or acetate which gradually forms the respective acid in a slow controlled manner as the temperature approaches the boil. This assures a slow even drop in pH to promote controlled dye exhaustion. The use of levelers such as **Orco Nylosol Leveler AA-50™** or **Orco Leveler ACN™** is highly recommended to control strike rate and encourage transference. Buffers such as **Orco Buffer 14 Powder™** may be used if residual acid in the wool is suspected and is much less likely to cause uneven neutralizing as with soda ash, caustic soda or ammonia.

**Orcoset™** dyes are a special group of modified 1:2 metal complex and reactive dyes exhibiting high fastness levels and similar dyeing properties. All dyes are applied at a pH of 4.5 in conjunction with **Orcogal SET™**. These dyes find application in stock, piece, and package dyeing.

**Orco Reactive BF-Series™** reactive dyes are a unique class of dyes in both physical properties as well as linkage mechanism. These dyes offer brightness, a fairly large range of color selection and excellent wet fastness. Unlike the acid dyes which anchor themselves to the wool by means of physical bonds or salt linkages, reactive dyes form a covalent bond with the wool which is fairly difficult to break. This very bond which provides the outstanding wet fastness also prevents the re-boiling of streaky dyeings, a practice commonly used with many of the acid dye classes. Dyeing is carried out in a manner not unlike some of the acid dye types except for the additional hot after-treatment with 2-3 % of ammonia, used to achieve the excellent wash fastness.