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Difference between powder and reducing liquid dyes

A. Powder:

Advantage: low price

Shortages:

- (a) Instable: the automatic oxidation quality deteriorates rapidly in the air and spontaneous combustion may occur because of overheating
- (b) Have chromatophilia only reduced to colorless compound in alkali liquor. The reduction is usually carried out with expensive caustic soda and rongalite, or cheap sodium sulfide.
- (c) Shortage of sodium sulfide: the purest products in the industry still have quite a few iron sulfides. It generates black sediment in water, causing color spots, or dyes accumulate on cloth.
- (d) The dissolution consumes time and thermal energy; the operation is complicated and the solution is unstable; in addition, whether it is completely soluble is uncertain.
- (e) The solubility and reduction of every dye are different, and it is easy to cause chromatic aberration.

B. Liquid:

Advantage: immediate dye; the quality is monitored by device, making the dye factory get stable and convenient liquid dye; thus the chromatic aberration is eliminated when dyeing, making the dye factory save time and get excellent dye solution.

- (a) The color is brighter than powder
- (b) The fastness is better than powder
- (c) The alkali sulfide isn't necessary in reduction state; add appropriate assistant to dilute and then dye directly.
- (d) Have excellent affinity with cellulosic fibers and it is possible to dye in cold solution and hot solution.
- (e) The dyeing color is deeper than powder and features high affinity, high repeatability and less chromatic aberration.
- (f) The storage stability is high and can be stored for 3-5 years due to its appropriate alkalinity and reducing agent.
- (g) Save time and labor in storage and operation.
- (h) In continuous dyeing, it is possible to adjust the concentration at any time and it is not necessary to reduce temperature in cold bath pad dyeing (the powder needs cooling after dissolving).
- (i) Suitable for all types of dyeing machines.