Colour terms and definitions

The aims of the Society’s Terms and Definitions Committee have been directed to the formulation of definitions of terms used in coloration and related areas. The object of this work has been to establish definitions that clearly indicate the meaning of such terms and that can be readily understood by students and workers in all branches of the coloration and associated industries, as well as by those engaged in research, development and academic fields. Furthermore the defined terms are intended for use in the Society’s Journal and other publications.

The first sets of accepted terms and definitions were published in the Journal [1,2] and subsequently issued as a separate publication entitled ‘Colour terms and definitions’[3], which included some 450 terms. In the main the terms and definitions published in the 1979 booklet relate to dyeing, printing and associated processes.

Terms relating specifically to fibres and textile processes other than dyeing and printing are defined by the Textile Terms and Definitions Committee of the Textile Institute, but many of the Society’s terms and definitions are included in the relevant Textile Institute publication with appropriate acknowledgement [4].

Since 1979 the Society’s Terms and Definitions Committee has modified several of the original definitions, based on comments received, and moreover has defined an appreciable number of new coloration and allied terms. As a result of a decision taken at the May 1982 meeting of the Society’s Council, it has been necessary for the committee to extend its scope considerably in order to consider many non-textile terms. Furthermore, in view of the increasing importance of colour physics, colour measurement and computer matching in many branches of coloration and allied areas, many terms relating to these technologies had to be defined. In view of the large number of textile and non-textile terms defined or modified since the issue of the 1979 publication it was decided to issue an up-to-date publication on the work done [5]. Following publication of the 1985 report further deliberations took place so that as many as possible of the recommendations and comments received by the Society could be accommodated. As a result the current publication is being issued and contains over 500 terms. In some cases a term is defined in more than one way, generally to take account of the different technologies covered.

It is appreciated that new technologies will bring forth new terms, and notification of these, together with suggested definitions, will be welcomed by the committee, and should be forwarded to the Society’s editor.

Terms and Definitions Committee

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Absorption spectrum The curve relating the absorption of radiant energy by a substance (usually in solution) to the wavelength of the radiant energy. Note: Absorption spectra relating to certain parts of the total radiant energy spectrum are often described specifically, e.g. ultraviolet spectrum and infrared spectrum.

Accelerant A substance, often a swelling agent, which, added to a dyebath or printing paste, accelerates the diffusion of a dye into a substrate.

Achromatic colour A colour that does not have a predominant hue, i.e. a neutral colour, i.e. white, grey and black.

Acid ageing Ageing (3) in which a volatile acid is present in the vapour.

Acid dye An anionic dye characterised by substantivity for protein fibres and often applied from an acid dyebath.

Acid sensitivity In the leather industry, a term used to indicate a change in colour or precipitation of anionic dye when the pH of the solution is lowered.

Affinity The quantitative expression of substantivity. It is the difference between the chemical potential of the dye in its standard state in the fibre and the corresponding chemical potential in the dyebath. Note: Affinity is usually expressed in units of joules (or calories) per mole. Use of this term in a qualitative sense, synonymous with substantivity, is deprecated.

References
African print A print of traditional West African design, usually with full, bright colours and involving the use of azoic dyes with 
resist (1) effects.

Afterchrome process A method of dyeing in which the fibre is 
dyed with a mordant dye and afterwards treated with a chromium 
compound to form a dye–chromium complex within the fibre.

Aftercoppering Aftertreatment of dyes of certain dyes on mainly 
cellulosic materials with copper sulphate or other copper 
compounds to effect improvement in fastness.

Ageing (1) A change in properties with time. Note: This change 
may be detrimental. Accelerated tests may be used to assess it.
(2) (testing) Storage of a material under defined conditions 
to determine by subsequent tests the effect of these conditions on 
its properties. The conditions may be chosen to accelerate any 
natural changes that may occur.
(3) (textile) Originally a process in which printed fabric 
is exposed to a hot moist atmosphere. At present the term is almost 
exclusively applied to prints in steam. Ageing is also used in the 
development of certain colorants in dyeing, e.g. aniline black.

Ager A chamber used for ageing (3) (textile coloration).

All-in method Printing using a paste containing all the necessary 
components for printing and fixation (see also two-phase printing).

Aniline dyed Refers to leather that has been dyed by immersion 
in a dyebath and has not received any coatings of finish.

Aniline finish A transparent finish (which may or may not contain 
soluble colorant) applied to the surface of dyed or undyed leather 
to give protection but no obliteration of the grain.

Aniline stained Refers to leather that has been stained (see staining 
(2)) by brushing, padding or spraying with a dye solution and that 
has not received any coating of finish.

Anionic dye A dye that dissociates in aqueous solution to give a 
negatively charged coloured ion.

Anomalous fading Abnormal light fading of certain colorants when 
used in mixtures.

Antichlor A chemical used to inactivate residual chlorine in 
materials.

Antistatic agent A substance applied to the surface of or incorpor-
ated into a substrate to prevent the accumulation of an electric 
charge.

Assistant Substance added to a dyebath or print paste to aid the 
colouration process.

Auxiliary A chemical or formulated chemical product which 
enables a processing operation in preparation, dyeing, printing or 
finishing to be carried out more effectively or which is essential 
if a given effect is to be obtained.

Auxochrome A substituent group in a chromogen that influences 
its colour.

Azoic composition A mechanical mixture of an azoic coupling 
component and an azoic diazo component. Note: The azoic diazo 
component is a diazotised primary amine present as a diazo 
compound that is chemically passive when in neutral or alkaline 
aqueous solution at normal temperatures but becomes reactive 
when heated or treated with acid.

Azoic coupling component See Azoic dyeing.

Azoic diazo component See Azoic dyeing.

Azoic dyeing The production of an insoluble azo compound on 
a substrate by interaction of a diazotised amine (azoic diazo 
component) and a coupling component (azoic coupling component).

Back greys Fabric used on the printing machine between the 
blanket and the material to be printed in order to absorb any 
printing paste that percolates through the printed fabric. Note: 
Synthetic-polymer fibre fabrics can be gummed to the back grey to 
prevent slipping. Originally, back greys were taken from a 
customer's order and, after being used once, were scoured, 
bleached and printed (synonymous with bump grey/bumps).

Backtanning An aftertreatment to improve the wet fastness of dyed 
or printed silk or polyamide materials, using either natural or 
synthetic tanning agents.

Baking Synonymous with thermostick.

Bale dyeing Dyeing of loose stock (usually synthetic-polymer fibre) 
in the form of an unpacked bale.

Ball top A cross-wound self-supporting sliver package produced 
on the worsted system.

Bark Synonymous with bekk.

Barry (barré) Descriptive of faulty fabrics that exhibit light and 
dark bars across the fabric. These may originate in, e.g. differences 
in lustre, dyeing behaviour or pick spacing.

Basic dye A cationic dye characterised by its substantivity for the 
acidic types of acrylic fibre and for tannin mordanted cotton.

Batchwise processing Processing of materials as lots or batches 
in which the whole of each batch is subjected to one stage of the 
process at a time (see also continuous processing).

Bathochromatic effect An effect by which the absorption spectrum 
of a substance is shifted to a longer wavelength part of the 
spectrum.

Batik dyeing/batik printing A method of producing characteristic 
designs on fabric using a wax or gum resist. Note: By the traditional 
technique, the wax is applied in the form of a design by brush 
or using a tool from which the wax is poured. The fabric is then 
dyed, the dye usually penetrating through cracks in the wax to 
give a characteristic veined effect. After dyeing, the wax is partially 
or wholly removed, and the process is repeated a number of times 
using different dyes. (The batik style is mass-produced today using 
a printing technique and wax as a resist, with indigo, mordant and 
azoic dyes.)

Beam dyeing Dyeing of textile materials wound on to a hollow 
perforated roller (beam) through the perforations of which dye 
liquor is circulated.
Beater A machine, fitted with a bed plate and a roll, intended for the treatment of fibrous materials in an aqueous medium in order to give them some of the properties needed to produce paper with the necessary characteristics.

Beck An open-topped vessel used to hold treating liquors, e.g. wash or dye liquor (see also bark, bowl, kettle, trough and vat).

Bit A sample taken during the dyeing of fabric to observe the progress of the dyeing. Note: For slubbing and sliver, this may be described as a pull.

Blanket seam A printing fault characterised by a light-coloured, widthwise stitching mark on the print caused by the seam in the rubberised blanket (see bump seam).

Bleach (noun) A test pattern produced from an ink mixed with an aqueous white pigment paste to obtain an indication of the tintorial strength of the ink in comparison with a control ink similarly treated.

Bleaching (1) The elimination of unwanted colouring matter from a substrate. Note: This is usually done by chemical means and in order to improve the whiteness. The removal of colouring matter by detergents is usually termed scouring, and removal of colour from dyed or printed fabrics is usually termed stripping.

(2) Severe loss in depth of a coloured paint or ink.

Blebbing (or blebbly) Descriptive of a very poor blotch print caused by thin printing paste, poor fabric preparation, lack of crush, etc.

Bleeding (1) (textile and paper) Loss of colorant from a coloured material in contact with a liquor, leading to an obvious coloration of the latter, or of adjacent areas of the same or other materials (see also marking-off and staining (1)).

(2) (other non-textile) The process of diffusion of a coloured substance from, into and through a lacquer, paint, varnish, ink, plastic, etc. coating from beneath, thus producing an undesirable staining (1) or discoloration.

Bleeding style (bleeder) Deliberate production of a blurred edge to a printed design by bleeding one or more of the colorants used...

Blinding Marked and undesirable loss of lustre of fibres caused by wet processing. Note: This may be caused by the formation, within or on the fibre, of voids or particles that scatter light.

Block printing Printing by transferring print paste onto a fabric by a wooden block carrying raised surfaces, which may be metal strips and which may have blottches filled in with felt.

Blocking (1) Undesired adhesion between adjacent layers of material such that the layers cannot be separated without damage. Note: The effect can occur with a roll of printed fabric, particularly if wound tightly before the printing paste has dried, when blocking in the reel can occur.

(2) The action of one dye in restricting the uptake of other dyes by a textile substrate, or the action of a colourless product having the same effect (see blocking agent).

Blocking agent A restraining agent specifically intended to control the absorption of dye by one or more components of a multicomponent fibre system.

Bloom (1) A surface paleness observed when a coloured textile (e.g. indigo-dyed wool) is viewed overhand.

(2) A deposit, like the bloom on a grape, which sometimes forms on substrates such as paint, varnish, plastic or leather, causing loss of gloss and dulling of the colour. Usually bloom can be removed by wiping.

Blotch Any relatively large area of uniform colour in a printed design. Note: The printed background to the design is commonly referred to as the blotch.

Blowing A process in which steam is blown through fabric wound on a perforated roller.

Boarding (textile) A heat-setting (1) process carried out under moist or dry conditions on boards or frames in order to confer a desired shape, size or handle on a knitted article.

Bottoming (1) Dyeing a substrate for subsequent topping.

(2) A thorough scouring in preparation for bleaching and/or dyeing.

(3) Achieving sufficient transfer of ink to paper to fill the hollows and produce a speckle-free print.

Bowl (1) A roller forming part of a nip through which material is passed during processing. Note: Two bowls are required to form a nip, the primary function of which is to draw material through a machine, but it may additionally apply liquid to, or express it from, the material or, when part of a calender it may mechanically alter the surface of the material.

(2) Synonymous with beek.

Brightness The converse of dullness.

Bronzing A metallic sheen which can occur on a material or surface coating, usually when deeply coloured. Note: The effect is usually caused by excessive concentration of colorant at the surface of the substrate. This is normally undesirable, but is sometimes produced deliberately, e.g. on textiles with some indigo dyeings.

Brown goods See grey state.

Bruise roller Synonymous with crush roller.

Bump grey/bumps Fabric bought to be used specifically as a back grey.

Bump seam A printing fault characterised by a light-coloured widthwise stitching mark caused by the stitching which joins one bump to another (or mends a damage in a bump). Note: It is a smaller stitch mark than a blanket seam.

Bump top A compressed package of coiled sliver produced on the worsted system. Note: The package is formed by use of a coler and subsequently compressed axially and secured.

Burl dyeing The colouration, at a low temperature, of (a) cellulose impurities in dyed wool fabrics or (b) cotton warps in union fabrics in which the wool is dyed.

Burn-out style/Burn-out style/Devorant style/Devoré style Production of a pattern on a fabric by printing with a substance that destroys one or more of the fibres present. Note: When one or more fibres remain in the treated area, a colorant may be included in the printing paste.
Cake A package of filament yarn, unsupported by any internal bobbin or tube, produced in the viscose-spinning industry by means of centrifugal spining.

Calendar (noun) A machine in which material is passed between heavy rollers (bodals (1)) rotating together under mechanical or hydraulic pressure.

Calendar (verb) To pass material in sheet form through a calendar to modify its thickness, surface, appearance or handle.

Cans Synonymous with drying cylinders.

Carbonising Removal of cellulosic matter from a mixture with other material by chemically degrading the cellulosic material to a friable condition.

Carbon paper Paper coated (generally on one side) with a pigmented layer, transferable by pressure or impact, used for making copies at the same time as an original manuscript or typescript is made.

Carrier A type of accelerant particularly used in the dyeing or printing of hydrophobic fibres with disperse dyes.

Cationic dye A dye that dissociates in aqueous solution to give a positively charged coloured ion (see also basic dye).

Cationic fixing agent Cationic compound used for the after-treatment of anionic dyeings and prints to improve their wet-fastness properties.

Cationic toner A salt formed from a complex acid and a cationic dye, and used as a pigment.

Causticising The treatment of cellulosic fabrics at room temperature with sodium hydroxide (caustic soda) solution to improve the colour yield in printing and dyeing. Note: The sodium hydroxide solution is about half the concentration of that required for the fully mercerised effect.

Chalking A dry, chalk-like appearance of the surface of, for example, a plastic or paint film. It can sometimes be removed by heavy abrasion (see also bloom (2)).

Chatter A printing defect, consisting of light and dark streaks across the fabric, caused by a vibrating doctor blade.

Cheese A cylindrical package of yarn, cross-wound on to a flangeless cylindrical support. Note: For cheese dyeing, the support, which is usually a spring, must allow easy passage of dye liquor.

Chemic(k) Calcium or sodium hypochlorite.

Chip dyeing The process by which chips for the production of thermoplastic synthetic-polymer fibres are dyed prior to melt extrusion.

Chromate process Synonymous with metachrome process.

Chromatic colour A colour that has a predominant hue.

Chromaticity coordinates Two numbers (denoted x and y) which together represent in the CIE (Commission Internationale de l’Eclairage) System the colour quality.

Chromaticity diagram A geometrical method of representing the colour quality of a coloured object by the position of a point on a two-dimensional grid. Note: Since colour is a three-dimensional quantity it is also necessary to specify the luminance of the coloured object to obtain a complete specification of its colour.

Chrome dye A mordant dye capable of forming a chelate complex with a chromium ion.

Chrome-mordant process A method of dyeing whereby the fibre is mordanted with a solution of chromium compound and subsequently dyed with a suitable chrome dye.

Chromogen A chemical compound that is either coloured or can be made coloured by the attachment of suitable substituents. The chromophore and the auxochrome(s) are part of the chromogen.

Chromophore A chemical group which when present in a compound (the chromogen) is responsible for the appearance of colour. Colorants are sometimes classified on the basis of their chief chromophore, e.g.azo dyes contain the chromophore -N=N-.

Clean Having the quality of brightness.

Clearing The removal from a dyed or printed textile of surplus colorant that, if allowed to remain, would mar the appearance or quality of the textile.

Coating slip A liquid suspension containing pigments, in which the pigment is generally a white material of very small particle size, and which contains an adhesive or binder. Other additives, such as colouring matter, dispersants or viscosity modifiers, may also be present. This slip is intended for coating the surface of paper or board.

Cobble The correction of a defectively processed fabric.

Cobbler Defectively dyed or finished fabric returned for correction.

Coiler A mechanical device that deposits a sliver into a cylindrical can in the form of helical coils so as to permit easy withdrawal with the minimum of fibre disturbance.

Colorant A colouring matter, a dye or pigment. Note: This noun is recommended as a generic term.

Colour (1) (sensation) That characteristic of the visual sensation which enables the eye to distinguish differences in its quality, such as may be caused by differences in the spectral distribution of the light rather than by differences in spatial distribution or fluctuations with time.

(2) (of an object) The particular visual sensation (as defined above) caused by the light emitted by, transmitted through, or reflected from the object. Note: The colour of a non-self-luminous object is dependent on the spectral composition of the incident light, the spectral reflectance or transmittance of the object and the spectral response of the observer. Colour can be described approximately in terms of hue, saturation, and lightness, or specified numerically by chromaticity coordinates, e.g. those defined by the CIE Standard Observer Data (1931). Alternatively, colour can be specified by reference to visual standards, e.g. the Munsell Color Atlas.

Colour box A long, narrow, shallow metal trough which holds printing paste and which is attached to the bearing housings of
a printing roller. The printing paste is transferred to the roller by means of a revolving brush or furnisher.

**Colour constancy** The ability of a coloured object to give the same general colour impression when viewed under different illuminants, the observer having been chromatically adapted in each case. *Note:* The most common comparison is made between the impression under artificial light, e.g. tungsten filament, and that under daylight (see **metamerism**).

**Colour couplers** (in colour photography) Compounds that react with oxidised developing agents to form coloured images (normally cyan, magenta or yellow) in photographic materials. *Note:* Couplers may be soluble and used in developing solutions or immobilised and incorporated in layers of photographic emulsions.

**Colour developers** (in colour photography) Solutions capable of producing coloured images in photographic materials. *Note:* They usually contain a p-phenylenediamine derivative as developing agent and a sulphite; *colour couplers* are also included when the photographic material does not incorporate them.

**Colour dispensary** Synonymous with **drug room**.

**Colour doctor** A *doctor* arranged so as to scrape superfluous printing medium from the smooth surface of an engraved printing roller (see also **lino doctor**).

**Colour Index** An authoritative, descriptive catalogue of natural and synthetic **colorants** and intermediates in terms of generic name, and constitution where disclosed.

**Colour Index Application Class** A grouping of all those products which by virtue of similarities in their general area of application can be conveniently, often traditionally, grouped together in a definable way.

**Colour Index Constitution Number** Index classification of a **colorant** or intermediate according to constitution.

**Colour Index Generic Name** A classification name and serial number which when allocated to a commercial product allows that product to be uniquely identified within any **Colour Index Application Class**. This enables the particular commercial product to be classified along with other products whose essential colorant is of the same chemical constitution and in which the essential colorant results from a single chemical reaction or series of reactions. Products obtained by physical admixture of essential colorants are excluded.

**Colour kitchen** Synonymous with **drug room**.

**Colour quality** A specification of colour in terms of both *hue* and *saturation* but not *luminance*.

**Colour shop** Synonymous with **drug room**.

**Colour solid** That part of **colour space** occupied by surface colours.

**Colour space** The basis of a geometrical method of representing the **colour** of an object by the position of a point in a three-dimensional lattice.

**Colour store** The area in a dyehouse or printworks where **colorants** and other chemicals are stored.

**Colour temperature** (of a light source) The temperature at which a *full radiator* would emit radiation of substantially the same spectral distribution in the visible region as the radiation from the light source and which would therefore have the same colour. *Note:* Colour temperature refers only to a source of light and not to a reflecting surface.

**Colour triangle** A type of chromaticity diagram.

**Colour value** The *colour yield* of a *colorant* compared with a standard of equal cost. *Note:* It is usually determined by comparing the cost of coloration at equal strength. Comparisons are normally made between products of similar *hue* and properties.

**Colour vision** That property of the eye which enables it to perceive **colour quality**.

**Colour yield** The depth of colour obtained when a standard weight of *colorant* is applied to a substrate under specified conditions.

**Colourist** A term widely used in the colour-making and colour-using industries to describe a person whose work usually entails the skill of colour matching. The following are important examples:

1. One skilled in the visual assessment of colour differences, especially in *matching* a dyeing or print with a control sample and correcting the process accordingly.
2. A person who translates colours required by a customer into suitable dye recipes for dyeing or printing. The person requires a detailed knowledge of the properties of the dyes and processes used and may also require an artistic colour sense and an awareness of customers’ style requirements.

**Colourway** One of the alternative combinations of colours used to produce a particular printed pattern.

**Compatibility value (K)** A value used to characterise basic dyes according to their compatibility for use in the dyeing of acrylic fibres. Dyes of equal *K* value are *compatible dyes* under practical *exhaust dyeing* conditions except when *acid dyes* or *auxiliaries* are present.

**Compatible dyes** Dyes which when used together behave in dyeing virtually as a homogeneous dye.

**Condense dye** A dye which, during or after application, reacts covalently with itself or other compounds, other than the substrate, to form a molecule of greatly increased size.

**Cone** (1) A truncated conical package of yarn cross-wound on a hollow conical support, which may be perforated for dyeing. (2) A hollow conical former, which may be perforated for dyeing, on which yarn is wound.

**Continuous process** A process in which material passes in sequence through a series of stages to give a continuous output of processed material.

**Cop** A form of yarn package, which is largely self-supporting, such as is spun on a mule spindle. *Note:* Cop dyeing can be carried out by impaling each cop on a perforated cop spindle connected to a *package dyeing* system.

**Coronising** A preparation process for glass fabric, in which the fabric is exposed for a short time to radiant heat at very high
temperatures with the object of burning-off sizes and lubricants so as to improve the adhesion of finishes and the pigment/binder systems used in coloration. The fabric is also set and the drape and crease-recovery properties are improved.

**Couple** To combine a suitable organic component, usually a phenol or an arylamine, with a diazonium salt to form an azo compound as in the manufacture of *azo colorants* in *azoic dyeing* or in the aftertreatment of direct dyings.

**Coupling component** Synonymous with *azoic coupling component*.

**Covering** (printing) See *cover roller*.

**Cover roller** A roller engraved with a delicate pattern, used for overprinting an existing print to obtain a distinct subdued patterned ground. The operation is termed *covering*.

**Crabbing** A process used in the worsted trade to set the fabric in a smooth flat state so that it will not cockle, pucker or wrinkle during subsequent wet processing.

**Crease-resist finish** A *finish* mainly for cellulosic fabrics (cotton, linen, viscose) which confers the characteristics of increased recovery from creasing. *Note*: In the type of process used most extensively, the material is impregnated with a monomer or precondensate that can penetrate into the fine structure of the fibre and is subsequently polymerised to a thermoset *resin*. A feature of the process is that the polymer is located primarily within the fibre.

**Croft (bleach)** A place where the *scouring* and *bleaching* of textiles (usually cotton) are carried out.

**Crooked cloth** A printing fault which arises from the non-alignment of the fabric geometry with the printed design.

**Cross-dyeing** The dyeing of one component of a mixture of fibres of which at least one is already coloured.

**Crush roller** A plain unengraved roller inserted after the printing roller on a multicolour printing machine to smooth out any large areas of applied printing paste which otherwise might be uneven. Synonymous with *braille roller*.

**Crushing** Reduction in the *brightness* and *depth* of a printed pattern caused by the mechanical pressure of the following rollers during printing.

**Crust leather** Leather which after *tanning* has been allowed to dry out.

**Cuprous-ion method** A process in which acrylic fibres are dyed with *acid dyes* in the presence of cuprous ions.

**Darts and steels** (1) A defect in *roller printing*. Minute scratches radiating from one point and caused by damage to the edge of the *doctor*. The traverse motion causes the scratches to radiate from one point.

(2) Small pieces of steel *doctor* embedded in the printing roller causing undesirable lifting of the doctor.

**Decatising** Synonymous with *blowing*.

**Deep-dye** Descriptive of a process for dyeing or printing carpets, characterised by complete penetration of the pile.

**Deep dyeing** Descriptive of fibres modified so as to have greater uptake of selected dyes than normal fibres, when the two are dyed together.

**Degradé** Synonymous with *ombré* (see *ombré dyeing*).

**Degreasing** The removal or redistribution of natural grease in leather by the application of solvent, emulsified solvent or surfactant to enable level dyeing and dye penetration to take place.

**Depth** That *colour quality* an increase in which is associated with an increase in the quantity of *colorant* present, all other conditions (viewing, etc.) remaining the same.

**Detergent** A substance normally having surface-active properties specifically intended to cleanse a substrate.

**Deuteronope** A person with defective *colour vision* who lacks the red/green chromatic response but has a substantially normal response to the *luminance* of an object.

**Devorant/devoré style** Synonymous with *burn-out style*.

**Diazo component** Synonymous with *azoic diazo component*.

**Diazoise** (verb) To convert a primary aromatic amine into the corresponding diazonium salt, by treatment with nitrous acid.

**Diazo type** A photographic material incorporating organic diazonium compounds that are destroyed by light. *Note*: The residual diazonium compound in the non-exposed parts will couple with phenolic compounds to give a *colorant* when the layer is made alkaline.

**Differential colorimeter** An instrument designed to measure the differences between the *tristimulus values* of two coloured surfaces. The result may be given as tristimulus values or, by automatic conversion, as values of another method of colour specification.

**Differential dyeing** Usually descriptive of fibres of the same generic class, but having potentially different dyeing properties from the standard fibre.

**Diffusion** (1) Movement of substances owing to the existence of a chemical potential gradient usually caused by a variation in concentration.

(2) (in photographic processing) The *migration* of developing or other reagents within a layer, or from one layer to another, in a photographic emulsion.

**Dip padding** Synonymous with *slop padding*.

**Direct dye** An anionic dye having *substantivity* for cellulosic fibres, normally applied from an aqueous dyebath containing an electrolyte.

**Dirty** Having the quality of *dullness*.

**Discharge** (printing) (verb) To destroy by chemical means a dye or mordant already present on a substrate to leave a white or differently coloured design.
Discharge-resist process A discharge process, e.g. on polyester, in which the colorant for the ground is applied, but not fixed, before printing the discharge paste. Fixation and discharge are achieved in a single steaming stage, usually above 100°C.

Disperse dye A substantially water-insoluble dye having substantivity for one or more hydrophobic fibres, e.g. cellulose acetate, and usually applied from fine aqueous dispersion.

Doctor A straight-edged metallic blade mounted parallel to a moving surface, e.g. a printing roller or a fabric, to remove excess of, or unwanted, material.

Doctor steps The device that holds the doctor blade.

Doctor streak A white or coloured streak in the lengthwise direction on a coated or printed substrate caused by a damaged or incorrectly set doctor.

Dolly (1) A machine in which pieces of fabric sewn end to end are circulated repeatedly through a liquor by means of a single pair of squeegee rollers from above the liquor.
(2) A machine in which lace, hosiery, or knittedwear is subjected to the action of free-falling beaters while immersed in a detergent solution and carried in a moving rectangular or cylindrical box.
(3) An open-width washer, containing three to five compartments, originally used for dunning aged cotton prints, and now also used for any open-width washing where a shorter machine than an open soaper is desired.

Dope-dyeing Synonymous with mass coloration.

Doped finish Synonymous with pigmented finish.

Down The appearance of coloured yarn, sliver or slubbing when viewed along the length of the material at eye-level against the light, this being at 90° to the material.

Down-time (1) Period during which fabric lies on the printing table or machine-bed during the printing operation.
(2) Time during which a machine of any type is not productive.

Draw-down The application of an ink, paint or liquid medium by spreading with a scraper or bar applicator onto an appropriate substrate. Usually used as a quick control method of assessing colour.

Drop To dispose of or decrease the volume of dye liquor.

Drug room The area where colorants, chemicals and auxiliaries are prepared for use in a dyehouse or printworks.

Drug store Synonymous with colour store.

Drum dyeing (1) (textile, usually knitwear) Dyeing in a side-loading perforated rotary-drum dyeing machine.
(2) (leather) Dyeing in a front-loading rotary-drum dyeing machine.

Dry clean (verb) To clean garments or fabrics by treating them in an appropriate organic solvent, as distinct from an aqueous liquor.

Dry dyeing (leather) A technique in which dry leather is introduced to a float so small that the leather absorbs all of it, the dye having been previously dissolved in the float. The technique gives very rapid penetration of dye.

Drying cylinder(s) Heated, rotating, hollow cylinder(s) around which textile material or paper is passed in contact to dry it. Note: A cylinder dryer may consist of a series of cylinders with which the material is in contact on alternate faces or, by the use of auxiliary rollers, one face only of the material is arranged to touch the surface of the cylinder. Large single cylinders are also used for faced fabrics to avoid flattening of the surface or raised threads on one side, and for drying backfilled fabrics.

Dull (textile and pigment-using industries) Having the quality of dullness.

Dullness (of a colour) That colour quality, an increase in which is comparable to the effect of the addition of a small quantity of neutral grey colorant, whereby a match cannot be made by adjusting the strength. Note: It is generally found that an increase in dullness is accompanied by a decrease in both saturation and lightness.

Dunning Aftertreatment of fabric printed with aluminium and iron mordants, aged to achieve partial fixation (a) to complete fixation of the mordants and (b) to remove any unfixed mordants and thickener. Solutions of cow dung were originally used as the treatment liquor.

Duplex printing Simultaneous printing of the back and face of a material so that the design elements coincide exactly on the two faces.

Dye A substance, usually organic, which is designed to be absorbed or adsorbed by, made to react with, or deposited within a substrate in order to impart colour to that substrate with some degree of permanence.

Dye dispensary Synonymous with drug room.

Dye-fixing agent A substance, generally organic, applied to a dyed or printed material to improve its fastness to wet treatments.

Dye kitchen Synonymous with drug room.

Dye store Synonymous with colour store.

Dyed style A method of coloration in which the fabric (usually cotton) is printed with one or more mordants, fixed and then dyed with a mordant dye.

Dyeing The application and fixing of a dye to a substrate, normally with the intention of obtaining an even distribution throughout the substrate. Note: In certain instances this term is used to describe processes resulting in non-uniform coloration, e.g. space dyeing, polychromatic dyeing, tie and dye. (For non-textile applications see staining (2).)

Dyestuff Synonymous with dye.

Effect threads Yarns, incorporated in a fabric during manufacture, of such a character that, after dyeing and finishing, they appear different from the bulk of the fabric.

Empty (of a dyeing) Synonymous with pale.

End In jig dyeing, a single passage of all the fabric from one roller to the other.
Ending A dyeing fault consisting of a change in colour from one end of a length of fabric to the other or a difference in colour between the bulk and the end of a length of fabric. Note: This term is commonly used with reference to batch-dyed material (see tailing).

Exhaust dyeing (1) A batchwise dyeing process in which the dye-bath is discarded on completion as opposed to the use of a standing bath.

(2) A second dyeing carried out to determine the degree of exhaustion of a dye-bath. Note: This is normally a laboratory test. On completion of dyeing, the dyed material is removed from the dye-bath and replaced by undyed material. Dyeing is then continued for a further period; this is the 'exhaust dyeing' which, by comparison with the original dyeing, indicates the degree of exhaustion of the original dye bath.

Exhaustion The proportion of dye or other substance taken up by a substrate at any stage of a process to the amount originally available.

Extended pigment A raw material consisting of a mixture of a pigment and an extender. Such materials when commercially available are often identified by the respective proportions of the pigment and the extender.

Extender A powder, usually inorganic, of low refractive index (and hence giving low hiding power), used for modifying the physical and applicational properties of paints, plastics and, to some extent, inks. Used in plastics particularly for cheapening purposes.

Facing In textile printing the contamination of the unprinted area by print paste due to an imperfect roller surface.

Fade (1) In fastness testing, any change in the colour of an object caused by light or contaminants in the atmosphere, e.g. burnt gas fumes. Note: The change in colour may be in hue, depth or brightness or any combination of these.

(2) Colloquially, a reduction in the depth of colour of an object, irrespective of cause.

Fall-on style A style in which a printing paste is printed immediately on to an area of a fabric already printed so that this is covered wholly or in part. Usually there is no intermediate drying.

Festoon steamer A steamer in which the fabric is supported by rods at the top of the chamber; the fabric hangs in loops and the rods move from the entry to the exit of the steamer.

Filling-in Non-textile equivalent of sticking in.

Film-release transfer printing Synonymous with melt transfer printing.

Finish (noun) A term used broadly in the paint, paper, printing ink, leather, plastics and textiles industries to include the added materials, the finishing processes employed, and the final result.

(1) A substance or mixture of substances added to a substrate at any stage in the process to impart desired properties.

(2) The type of process, physical or chemical, applied to a substrate to produce a desired effect.

(3) Such properties, e.g. smoothness, drape, lustre, gloss or crease resistance produced by (1) and/or (2) above.

(4) The state of the substrate as it leaves a previous processor.

(5) The quality, appearance or chemical type of a paint or printing-ink film.

Note: This term is also used to describe the type or quality of a process given at any stage, e.g. a yarn may be said to be 'wax-finished' or a wool top 'well-finished' when processing conforms to standard.

Finish (verb) To apply or produce a finish. Note: In textiles the mechanical operations of, e.g., spinning, weaving or knitting, though they may largely determine the final result, are excluded.

Fit Synonymous with register.

Flash ageing A short, continuous, high-temperature steaming treatment in which a chemical pad is placed immediately before the steamer to achieve fixation of colorants. Also known as flash steaming.

Flash a ger Equipment used for flash ageing.

Flat (1) (textile) Having the quality of dullness.

(2) (paint and printing) Lacking the quality of gloss or sheen.

Flat-bed screen printing Screen printing using rectangular screens placed on fabrics with the squeegee moving across or along the fabric. The process may be manual or semi-mechanised, where screens are moved along the fabric attached to the printing blanket or fully mechanised, where screens are stationary and the fabric and the printing blanket move.

Flexographic printing A process in which an image is produced by ink transferred from areas in relief on a rubber or other resilient surface.

Float The quantity of water used in leather dyeing, see liquor: goods ratio. It is usually expressed as a percentage calculated on the weight of leather in a given state (dry, sammed, etc.).

Flock printing The localised application of very short fibres (flock) on to a substrate previously printed with adhesive. Note: The flock may be allowed to fall on to the printed areas, or may be attracted by electrostatic means. All-over deposition of flock is also carried out.

Flood stroke The initial stroke on some screen-printing machines in which the printing paste is spread evenly across the raised screen, pushing the paste into the interstices of the screen mesh, but not through it.

Fluorescent brightener A substance that, when added to an uncoloured or a coloured substrate, increases the apparent reflectance of the substrate in the visible region by converting ultraviolet radiation into visible light and so increases the whiteness or brightness of the substrate.

Flushing (1) Migration of dye or other chemicals leading to loss in definition of prints which is brought about by faulty processing. Note: This may be caused by incorrect preparation of the fabric, incorrect formulation of printing paste or steaming conditions which are too wet. Halo is a particular form of flushing.

(2) A process of agitating a paste, consisting of pigment in water, with a liquid immiscible with water, in order to displace water and form a paste of pigment in the liquid.

Foulard Synonymous with padder.
Frosting  Whitish appearance of coloured textiles, normally regarded as detrimental, caused by the presence of lightly coloured surface fibres. Frosting occurs mainly in the continuous coloration of thick textile materials (e.g. carpets, felts and slivers).

Fugitive tint A colorant for application to textile materials for their identification during handling. The colorant must be removed easily during normal textile scouring or dyeing procedures.

Full Synonymous with deep.

Full radiator (black-body source) A light source emitting radiation, the spectral distribution of which is dependent upon the temperature only and not upon the material or nature of the source. Note: Although no known substance radiates exactly in conformity with this definition, many substances exist which will, on heating, emit radiation which closely approximates to it. A typical example is tungsten, which is used as the filament in electric lamps. A full radiator emits radiation at all wavelengths, whereas the radiation emitted by, for example, a fluorescent tube lamp comprises a number of separate narrow bands with gaps between them in which little or no radiation is emitted.

Furnisher A wooden roller covered with fabric, usually cotton or wool, which revolves in a colour box. It dips into the printing paste in the box and, as it revolves, constantly supplies paste to the engraved printing roller.

Galvano screen Nickel mesh rotary screen for screen printing on which the design is applied by electrodeposition.

Gel dyeing A continuous tow-dyeing method in which soluble dyes are applied to wet-spun fibres (e.g. acrylic or modacrylic fibres) in the gel state (i.e. after fibre extrusion and coagulation, but before drawing and drying).

Gold blocking A process in which gold or, more commonly, simulated gold foil is stamped onto a non-textile substrate.

Gravure printing An intaglio process in which web- or sheet-fed material is printed from a recessed image, the surface being either chromium on copper, or plastic.

Grey Scale A series of neutrally coloured chips, showing increasing contrast within pairs, used visually to assess contrasts between other pairs of patterns: for example the ISO (International Organization for Standardization) grey scales comprise two series of chips against which the magnitude of the change in colour of a specimen submitted to a fastness test and of staining of adjacent uncoloured material can be visually assessed and rated on a 1 to 5 scale (see also BS1006:1978).

Grey state Descriptive of textile material before it has been wet-processed. Note: In some countries, particularly in the North American Continent, the term greige (alternative spelling, griege), is used. For woven fabric the termloom state is frequently used as an alternative. In the linen and lace trades, the term brown goods is used.

Ground colour The dyed or padded background colour in discharge or resist printing.

Gum box Colour box containing starch or gum only.

Gum roller Synonymous with starch roller.

Halo A narrow pale band surrounding a coloured discharge or resist print. Note: It is caused by the outward diffusion of the resist or discharge chemicals.

Haloing (1) In discharge printing, the migration of the discharging agent outwards from the printed mark, imparting a diffuse edge to the undischarged portion. (2) See swelling (2).

Handle The quality of a fabric, yarn, leather or paper assessed by the reaction obtained from the sense of touch. Note: It is concerned with the subjective judgement of roughness, smoothness, harshness, pliability, thickness, etc.

Hawking machine A special machine for open-width dyeing of wool fabric with indigo (C.I. Vat Blue I).

Head colour Synonymous with illuminant (illuminating colour).

Heat of dyeing (∆H) The increase in enthalpy (heat content) of a dye-fibre system when dye is sorbed by the fibre. The value of ∆H determines the way in which the affinity changes with temperature.

Hiding power The ability of a coat of paint, film of ink, plastics coating, etc. to obliterate the colour of a surface on which it is applied.

High-temperature dyeing (HT dyeing) Dyeing under super atmospheric pressure whereby the temperature of the dye-liquor is raised above its normal boiling point. Note: The use of the term pressure dyeing in this connection is deprecated (see also pack dyeing).

High-temperature steamer A steamer for printed or padded fabric using superheated steam and operating usually between 160 and 210°C at atmospheric pressure.

Hollander Synonymous with beater.

Horse up To pile leather over beams with the backbones of the hides or skins lying along the lengths of the beams to drain liquors evenly and to store temporarily between processes or while the accuracy of dyeing is checked.

Hue That attribute of colour whereby it is recognised as being predominantly red, green, blue, yellow, violet, brown, etc.

Hyperchromic effect An effect by which the absorption of light by a substance is increased with no change in its concentration in solution.

Hypochromic effect An effect by which an absorption spectrum of a substance moves to a shorter wavelength part of the spectrum.

Illuminant (illuminating colour) A colorant used in the print paste when producing coloured discharge or coloured resist prints to colour the discharged or resisted areas.

Ingrain dye A colorant which is formed in situ in the substrate by the development and coupling of one or more intermediate compounds. Note: The term was originally used for colorants obtained from oxidation bases and by azoic techniques, but is now reserved for other types of colorant formed in situ.
Ink-jet printing. A process in which an ink stream is broken down into minute droplets of equal size. The droplets are deflected onto the substrate by electrically charged deflector plates, the design formation being under computer control.

Intaglio printing. Printing from a plate made up of cells or recesses, the volume of engraving being a determining factor in the intensity of the resultant print.

Isoreactive dyeing. Dyeing in which the rate of exhaustion with time is constant.

J-box. An upright J-shaped vessel for continuous processing of textiles. The material enters the top of the long arm of the J, undergoes a dwell period and is withdrawn through the short arm.

Jet-dyeing machine. (1) A machine for dyeing fabric in rope form, in which the fabric is carried through a narrow throat by dye-liquor circulated at a high velocity.

(2) A machine for dyeing garments, in which the garments are circulated by jets of liquid rather than by mechanical means.

Jig. A dyeing machine in which fabric in open width is transferred repeatedly from one roller to another through a dyebath at low liquor:goods ratio.

Kettle. (1) Synonymous with beek.

(2) A laboratory steamer.

Kier boiling. Prolonged treatment of natural cellulosic materials with boiling alkaline liquors in a large container (kier) at, or above, atmospheric pressure.

Lacquer. A coating which dries solely by evaporation of the solvents, e.g. cellulose lacquers and spirit lacquers.

Lacquer screen. Screen in which the design is obtained by exposure to light of sensitive material and which is stabilised by application of a lacquer stable to the agencies present in the print paste.

Lake. (noun) A pigment prepared by precipitating a soluble dye as a metallic salt or acid complex, sometimes in the presence of an inert substrate, the latter forming an integral part of the product.

Lake. (verb) To precipitate a soluble dye as an insoluble pigment. Note: The use of this term for precipitation both in the presence or in absence of an inert substance is confusing (see lake (noun)), but long established.

Letterpress printing. A process in which paste inks are printed from type, or a raised or relief plate. In some cases very low viscosity spirit-based inks can be used.

Leuco dye. A reduced form of a dye from which the original dye may be regenerated by oxidation (see vat dye and sulphur dye).

Leuco sulphur dye. A sulphur dye composition consisting of the leuco compound in the presence of a small excess of a reducing agent.

Levelling. Migration of dye leading to a more uniform coloration of a substrate.

Levelling acid dye. An acid dye that migrates readily when applied to wool by the optimum method for that dye (see report of the Committee on the Dyeing Properties of Wool Dyes, J. S. D. C., 66 (1950) 213).

Levelling agent. Strictly, a substance that, added to the dyebath, promotes levelling. Note: This term is also widely used to describe substances that do not necessarily promote levelling but which do assist level dyeing.

Lifts. Defect in roller printing consisting of minute mappers or streaks occurring at regular intervals. Note: These are often caused by small grit particles in the printing paste. When the defect occurs at an interval corresponding to the circumference of the printing roller, the cause may be a piece of steel embedded in the printing roller.

Light. Radiant energy capable of stimulating the eye and causing the sensation of vision. Note: Radiation near to the ends of the visible spectrum is sometimes referred to as light, e.g. ultra-violet light, instead of radiation. This is deprecated.

Lightness. That property of a coloured object by which it is judged to reflect or transmit a greater or a smaller proportion of the incident light than another object (see colour).

Lint doctor. A doctor arranged so as to remove loose fibres or, with multicolour printing, unwanted printing medium from an graved roller (see also colour doctor).

Liquid dye. Stable solution or dispersion of dyes marketed for ease of handling.

Liquor:goods ratio (liquor ratio or LR). The ratio of the weight of liquor employed in any treatment to the weight of material treated. Note: ‘short’ and ‘long’ are often used to describe low and high liquor:goods ratios, respectively.

Listing. An undesirable variation of colour across the width of a dyed fabric.

Lithographic printing. A process in which the image is produced by a printing plate so treated that regions defining the image to be printed accept ink and the remaining areas reject ink. The different behaviour is produced by alteration of the physical/chemical properties of the printing surface rather than by relief or indentation.

Long ends. A resist effect caused by loose yarn being present on the fabric during printing.

Long, medium and short thickeners. Descriptive of the effect of shear stress on print paste viscosity, e.g. when the squeegee is forcing paste through the screen. Short thickeners show the greatest degree of variations in viscosity between high and low shear, whereas long thickeners show the smallest difference.

Loom-state. Synonymous with grey state.


Luminance. The luminous flux emitted per unit solid angle or per unit projected area of a real or imaginary surface. Note: For a coloured object, luminance is a measure of the apparent overall
reflectance. For a light source, luminance is a measure of the apparent brightness of the light.

**Luminous flux** The summation over all visible wavelengths of the product of radiant energy of a given wavelength emitted per unit time and the relative visual response of the Standard Observer to radiation of that wavelength (see *Standard Observer Data*).

**Madder style** A dyed style where alizarin (C.I. Mordant Red 11) is used as the dye.

**Magnetic-roller squeegee** In flat-bed screen printing a stainless steel rod which replaces the conventional squeegee. The rod is moved across the screen by an electromagnet moving below the screen table surface. In rotary-screen printing, a stainless steel rod is held in a fixed position by an electromagnet.

**Mangle** A machine consisting of two or more rollers (bolls) running in contact to form a nip whose purpose is to express liquid from moving textiles which pass through it.

**Manila paper** A coloured paper, usually buff, used principally for making strong envelopes, folders, etc., but not necessarily containing manila fibre.

**Marking-off** Undesirable transfer of colouring matter by contact, e.g. from a coloured material to another material, or from a contaminated machine bowl to a material (see also bleeding (1)).

**Mass coloration** (1) A method of colouring man-made fibres by incorporation of the colorant in the spinning composition before extrusion into filaments. (2) A method of colouring plastics by incorporation of the colorant before the final product is formed.

**Mass pigmentation** Mass coloration in which the colorant is a pigment.

**Masterbatch** A concentrated dispersion of a colorant or other substance in a polymer or resin-based composition intended for incorporation in a compatible polymer system to produce, for example, a coloured plastic.

**Match** (noun) Two or more objects that are judged to be very similar in colour.

**Matching** A process by which the amount of each colouring matter present in a material is adjusted so that the final colour resembles that of a given sample as closely as possible.

**Matt** Descriptive of reduction in specular reflection.

**Mealy** Descriptive of the appearance of a print or dyeing which shows small irregularities, rather like oatmeal, caused, e.g., by too much printing paste on the fabric from too deep an engraving, unsatisfactory fabric preparation, etc.

**Mélange printing (vigoureux printing)** A process in which bands of colour are printed across sliver or slubbing, which is then gilled. *Note:* The effect produced is distinctive and cannot be obtained by blending coloured and uncoloured fibres.

**Melt-transfer printing** Transfer of a coloured design contained in a layer of pigment and binder/adhesive from a first substrate to a second substrate usually by means of a heated calender. The transfer occurs through the preferential adhesion of the layer to the second substrate under the temperature and pressure conditions of the calender.

**Mend** Synonymous with cobble.

**Mender** Synonymous with cobbler.

**Mercerising** The treatment of cellulose in the form of fibre, yarn or fabric in open width with a concentrated aqueous solution of sodium hydroxide (caustic soda) whereby the fibres are extensively swollen and the materials shrink, followed by washing out the sodium hydroxide with water. *Note:* The process results in increased absorption of dye. With yarn and fabric, tension is normally applied during the treatment so as to restore the original dimensions, whereby lustre and strength are increased to an extent determined by the degree of tension applied (see causticising).

**Mesh** (of a textile printing screen) Holes per inch. *Note:* The term is also used in a similar sense to define the number of holes per inch in a sieve (see raster).

**Metachrome process** A single-bath method of dyeing in which the fibre is treated in a dyebath containing a suitable chrome dye together with a chromate, whereby a dye–chromium complex is formed within the fibre.

**Metal-complex dye** A dye having a co-ordinated metal atom in its molecule. *Note:* Unless the term ‘metal-complex dye’ is used in direct association with a particular application class of dye, e.g. ‘metal-complex disperse dye’ or ‘metal-complex reactive dye’, its use is deprecated.

**Metallisable dye** A dye capable of forming a dye-metal complex either in substance (see metal-complex dye) or on the substrate.

**Metal toner** A pigment prepared by precipitating a water-soluble anionic dye as a water-insoluble metallic salt.

**Metameric** Descriptive of objects that exhibit metamerism.

**Metamerism match** A match that is judged to be satisfactory under a particular illuminant but not under other illuminants of different spectral composition.

**Metamerism** A phenomenon whereby the nature of the colour difference between two similarly coloured objects changes with change in the spectral distribution (characteristics) of the illuminant. *Note 1:* Metamerism is most frequently seen when two coloured objects match in daylight, but differ markedly in colour when viewed in tungsten-filament light. This arises because the visible absorption spectra of the two objects differ significantly, although the tristimulus values in daylight are identical. *Note 2:* This term is often used loosely to describe the behaviour of a single coloured object that shows a marked change of colour as the illuminant changes. Use of the term in this way is incorrect; this effect should be described as lack of colour constancy.

**Migration** The movement of a dye or pigment from one part of a material to another. *Note:* It may be desirable (see levelling) or undesirable (see swailing).

**Milling** (1) A process applied to fabrics woven or knitted from animal fibres, or their blends, resulting in modification, usually
consolidation, of the structure and handle of the fabrics. (2) Reduction of the particle size of a colorant by mechanical action. Note: Milling can be carried out either dry or wet in the presence or absence of a medium or diluent.

**Milling acid dye** An acid dye of good fastness to acid or alkaline milling.

**Misfitting** Fault in the alignment of the elements of a design.

**Misfurnish** Failure to furnish the roller with printing paste, caused, e.g. by allowing the level of the paste in the colour box to run too low.

**Mock cake** An unsupported cylindrical package of yarn produced by winding on to a collapsible mandrel or former which is removed after the package has been formed. Note: It is built up from the inside to the outside, in contradistinction to the similarly shaped viscose cake (see also muff).

**Molten-metal dyeing process** A method of continuous dyeing in which material is impregnated with an aqueous liquid containing dye and chemicals and then passed through a bath of liquid low-melting alloy usually below 100°C.

**Mordant** A substance, usually a metallic compound, applied to a substrate to form a complex with a dye which is retained by the substrate more firmly than the dye itself.

**Mordant dye** A dye that is fixed with a mordant.

**Mottling** Paper or board which shows a small amount of fibres with a colour or intensity of colour different from the rest of the paper.

**Muff** An unsupported, cross-wound package in the shape of a lady’s muff. Note: Muffs are normally wound directly on to a collapsible mandrel, but have been produced by winding bulked yarns in an extended form, lacing and allowing the package to contract on removal from the swit. Each muff has a piece of stockinette threaded through the centre and brought round each end to enclose it. Bulked yarns are conveniently dyed in this form (see pack dyeing).

**Multi-charge dyeing** A process in which anionic dyes and cationic dyes are present in the dyebath, usually with an anti-precipitant. Used in the leather industry for special effects and for dyeing leather having low substantivity.

**Munsell solid** The colour solid in which quantities defining the colour are value (height), chroma (radius) and hue (angle in a horizontal plane).

**Needle paper** An acid-free black paper used for wrapping needles.

**Nip** See mangle.

**Nip padding** A padding process where the lower bowl (1) is in contact with and carries into the nip the pad liquor. The fabric enters directly into the nip.

**No-float dyeing (leather)** A technique in which the only water present is that carried by the leather after wetting back.

**Offset printing** A method of printing where the ink is transferred from a plate to a resilient blanket and then to the substrate.

**Off-shade** Descriptive of a match that is commercially unacceptable.

**Ombre dyeing** Production of an intentionally graduated depth of colour across the width of a dyed fabric or along the length of a dyed garment or a dyed hank, produced, e.g. by spraying or by using special dip dyeing techniques. Note: With fabric, a star frame is often used.

**Onium dye** A cationic dye that is solubilised by a labile ammonium, sulphonium, phosphonium or oxonium substituent which splits off during fixation to leave an insoluble colorant in the fibre.

**Open soaper** A machine consisting of a number of compartments, each having rollers and/or nips, which is used for continuous wet treatment of textiles in open width. By suitable arrangement of the liquids in the series of compartments a sequence of operations, e.g. fixing, rinsing, soaping and rinsing, can be carried out.

**Optical bleaching/brightening/whitening agent** Synonymous with fluorescent brightener. Note: The use of these terms instead of fluorescent brightener is deprecated.

**Orbis printing** Specialised printing in which a multicoloured design is printed from a single roller. Note: The design is built up on the roller using colorants incorporated in a medium having a hard tacky texture. Fabric is squeezed against the roller and picks up a film of the coloured medium. The print is then processed and fixed.

**Outline or contour lines** Fine lines, normally dark coloured, which are printed to emphasise the details of a pattern.

**Overdyeing** Redipping of dyed material to change its hue.

**Overhand** The appearance of a coloured fabric when viewed across the material at eye-level against the light. For slubbing, sliver and yarn the term used is ‘through’.

**Overhead-paddle machine** A machine for wet processing in which an overhead paddle is used for circulating liquor and goods.

**Oxidation base** A basic compound which can be oxidised on a substrate to produce a colorant. Note: Metallic compounds are often used to catalyse the oxidation or influence the colour obtained.

**Pack dyeing** A method of dyeing in which the liquor is circulated through the goods. Note: The use of the term pressure dyeing in this connection is deprecated.

**Package dyeing** A method of dyeing in which the liquor is circulated radially through a wound package. Note: Wound packages include slubbing in top form and cheeses or cones of yarn (see also beam dyeing).

**Pad** Abbreviated form of padding mangle or padding. Note: It is often used in conjunction with other process terms to describe sequential operations in dyeing or finishing, e.g. pad - bake, pad - batch, pad - dry, and pad - steam. It is occasionally used also
to describe processes carried out on the padding mangle as opposed to batchwise processing e.g. pad-develop.

**Padder (pad mangle, padding mangle)** A mangle designed to give even impregnation of textiles in open width.

**Padding** Impregnation of a substrate with a liquor or a paste, followed by squeezing, usually by passage through a nip to leave a specific quantity of liquor or paste on the substrate. *Note:* This term is often used as a synonym for slop padding.

**Paint** A pigmented material which when applied as a liquid to a surface forms after a time a dry adherent film.

**Pale** Descriptive of colour produced by the application of a relatively small amount of colorant.

**Peg** Any small object in a printing design which cannot be described as outline or blotch.

**Photochromism** Change in colour of certain materials on exposure to light, which is reversible when exposure ceases (see also BS1006:1978).

**Pigment** A substance in particulate form which is substantially insoluble in a medium, but which can be mechanically dispersed in this medium to modify its colour and/or light-scattering properties.

**Pigment chip** A concentrated dispersion of a pigment in a polymer, e.g. cellulose nitrate or vinyl resin.

**Pigment padding** The application of an aqueous dispersion of a pigment to a fabric by padding. *Note:* It is commonly used to describe the first stage of a process for the application of vat dyes to fabrics, followed by fixation of the vat dye through its leuco form. It is also used in the application of resin-bonded pigments.

**Pigment printing** Printing with a mixture of a pigment a resin binder, a plasticiser, a catalyst and a thickener (emulsion or synthetic). In textile processing, fixation is by baking and no wash-off is needed.

**Pigmentation** (1) Distribution of pigment throughout a substrate. *Note:* It is often employed as part of the process of application of vat dyes (see pigment padding). (2) The concentration, type or number of pigments used in a paint, ink, plastic, etc.

**Pigmented finish** A finish consisting of fine pigment particles in suspension and a suitable binder applied to the surface of leather.

**Pinerary** Descriptive of ‘pin-point’ white specks in a printed area which may be the result of frothing of printing paste, unsatisfactory fabric preparation, etc.

**Pitch pins** Metal pins at the corners of hand blocks (see block printing) to print small dots used to guide the positioning of the next block.

**Pitching pattern, pitch pattern** Fixed points on a printing screen or roller to facilitate registration of the design. *Note:* Hand screens have angles on the rail side. On flat-bed machines three points or corners are used to fit a temporary mark on the blanket. Rotary screens and rollers have pitch points at exactly the same place in the pattern. These must all register on each other on the blanket to guide an initial fit.

**Polychromatic dyeing** Production of patterned effects, usually multicoloured, on a textile or other substrate by the use of jets of dye liquor impinging on the substrate; the design should not contain a precise repeat.

**Polygenetic dye** A dye which gives a different hue according to the application method, applied usually to mordant dyes that produce a variety of hues depending on the metal used to form the complex with the dye.

**Postboarding** Boarding after dyeing to confer durable set (see setting (1)).

**Potting** A finishing (see finish) process for wool fabric to give a specific smooth handle. *Note:* A roll of fabric is treated in water at 70 to 100°C for several hours, then allowed to cool slowly and finally immersed in cold water.

**Preboarding** Boarding before dyeing to confer durable set (see setting (1)).

**Premetallised dye** Synonymous with metal-complex dye but the latter term is preferred.

**Pressure dyeing** The forced circulation of dye liquor through packages of fibre, yarn or fabric, without limitation of temperature (preferably referred to as pack dyeing). (See also high-temperature dyeing).

**Primer** The first complete coat of paint of a painting system applied to an unpainted surface.

**Print pad** An engraved roller used in printing for applying printing paste or chemicals to the whole area of the material (as distinct from local application of a design). *Note:* It is used for such purposes as surface mercerising or treatment with anti-scumming compounds.

**Printing blanket** A rubber- or plastic-coated fabric which carries the fabric in screen printing. It serves as the printing table cover in manual or semi-mechanised flat-bed screen printing and is the moving fabric carrier in fully mechanised flat-bed screen printing or rotary-screen printing. It is also the fabric carrier in roller printing where it may be used together with a back grey.

**Producer dyeing** Synonymous with gel dyeing.

**Protanope** A person with defective colour vision who lacks the red/green chromatic response and has an abnormally low response to the luminance of an object.

**Pull** Synonymous with bit.

**Raceway** Synonymous with side-paddle machine.

**Random dyeing** A form of space-dyeing. *Note:* It is so called because it can be used to produce random coloration in the final fabric.

**Raster** (of a textile printing screen) Holes per centimetre. *Note:* The term is also used in a similar sense to define spacing per centimetre, e.g. on an engraving or on a television screen (see mesh).
Rate of dyeing The rate at which a dye is absorbed by a substrate under specified conditions. *Note:* It may be expressed quantitatively in several ways, such as the weight of dye absorbed in unit time, or the time taken for the substrate to absorb a given fraction of the amount of dye which it will absorb at equilibrium.

Reactive dye A dye that, under suitable conditions, is capable of reacting chemically with a substrate to form a covalent dye–substrate linkage.

Redipping/redyeing Returning dyed material to a dyebath for further treatment, usually with further additions of dyes and auxiliaries.

Reducing white A pigmented white ink used for mixing with full-strength coloured inks to assess tintorial strength.

Reduction clearing An alkaline reduction treatment applied after coloration to move loose disperse dye primarily from polyester fibres.

Reflectance curve A plot against wavelength of the fraction of the incident light (or other radiation) reflected by an object at each wavelength in the spectrum.

Register Correct alignment of the part of a design.

Relief printing Synonymous with surface printing.

Reserve (1) That property of a dye in a particular dyeing system which enables one or more of the components of a multi-component material to remain uncoloured or to be coloured by additional dye(s).

(2) (verb) To achieve the effect described in (1).

Reserve style (printing) Synonymous with resist style, but the latter is preferred.

Reserving agent A substance that, added to a dyebath, improves the reserve (1) property of a dye.

Resin A natural or synthetic polymeric material with film-forming or fabrication properties. *Note:* In the paint and ink industries the term resin is more commonly used than polymer. In the textile industry the term is usually reserved for certain thermosetting materials employed to produce special finishes.

Resist (1) A substance applied to a substrate to prevent the uptake or fixation of a dye in a subsequent operation. *Note:* The substance can function by forming a mechanical barrier, by reacting chemically with the dye or substrate, or by altering conditions (e.g., pH value) locally so that development cannot occur. Imperfect preparation of the substrate may cause a resist as a fault.

(2) In printing plate or roller making, a coating of, for example, light-hardened gelatine which protects from the action of the etching solutions those areas of the plate or roller which are not required to be etched.

Resist style A method of printing in which undyed fabric is printed with resists whereby, on subsequent dyeing or developing, a white or coloured pattern is obtained on a coloured ground. *Note:* A coloured pattern is obtained by incorporating suitable dyes in the resist printing paste.

Restraining agent A substance that, added to a dyebath, reduces the equilibrium exhaustion.

Retarding agent A substance that, added to a dyebath, reduces the rate of dyeing, but does not substantially affect the equilibrium exhaustion (Synonymous with ‘retarder’).

Ring-dyed Descriptive of a fibre which has been incompletely penetrated by dye. *Note:* In extreme cases the dye is confined to the periphery of the fibre and this may be undesirable.

Ringing Synonymous with sealing (2).

Roller printing Printing from engraved copper rollers which are usually chromium plated.

Roll-out A laboratory roller print of ink onto the substrate to be printed. Often applied at various film weights to assess colour.

Rotary-screen printing Screen printing using cylindrical screens with a fixed squeegee.

Rough A low place on the surface of a roller which allows a film of printing paste to pass under the doctor every time the roller revolves.

S-finish A finish produced on cellulose triacetate textiles by surface saponification.

Salt sensitivity (1) The extent to which the dyeing properties of a dye are affected by the addition of a neutral electrolyte to the dyebath. *Note:* This term is usually only applied in the dyeing of cellulosic fibres.

(2) The susceptibility of dyed material to change in colour when spotted with aqueous solutions of neutral electrolytes.

Sammed weight A weight frequently used for calculating leather dye quantities. It is the weight of wet leather from which as much water as possible has been removed by mechanical processes, e.g., a sammimg machine, which is similar to a mangle.

Sandwich dyeing (1) Acid A leather dyeing process in which a first charge of anionic dye is given for penetration followed by an addition of acid for fixation purposes. A second charge of anionic dye is added to the same bath to give a deeper-dyed surface, followed by a second acid addition.

(2) Basic Similar to sandwich dyeing (acid) except that a basic dye process is carried out between two acid dye processes. In this process it is usual to change the bath after each stage.

Satin white A white pigment for coating paper, produced by the interaction of aluminium sulphate and slaked lime.

Saturation (of a colour) The nearness of a colour in purity to the associated spectral colour.

Saturation value The maximum quantity of a dye which can be absorbed by a substrate under defined conditions.

Scouring Freeing textile materials or wool sheepskins from natural or other non-fibrous constituents by treatment with aqueous solutions or organic solvents.

Screen printing Production of a design on a substrate by forcing printing paste or ink through the unblocked areas of a thin gauze in contact with the substrate. *Note:* The printing paste or ink may contain colorant(s) or uncoloured material(s).
Scrimp(s) A printing defect in which a lengthwise portion of the fabric is not printed because it is creased as it passes through the printing zone.

Scumming (1) (textile printing) The contamination of the unprinted area by print paste due to imperfect operation of the colour doctor.
(2) (lithographic printing) The traces of ink which temporarily adhere to the unengraved areas of the printing plate owing to ineffective damping of the plate.

Setting (1) The process of conferring dimensional and/or shape stability on fibres, yarns or fabrics by means of moist or dry heat, or in leather mechanically. Note: The operation of setting is applied to textile materials of all kinds but assumes special significance in the treatment of thermoplastic materials. Setting is usually accompanied by changes in the fibre which may affect its coloration properties.
(2) The drying of a paint or varnish film to a point where for all practical purposes it ceases to flow.
(3) The initial drying of a printed ink film.

Shade (noun) A common term loosely employed to describe broadly a particular colour or depth e.g. pale shade, 2% shade, mode shade and fashion shade.

Shade (verb) To bring about relatively small modifications in the colour of a substrate by adding a further small amount of colorant with the object of matching a given pattern more accurately.

Shading colour (1) Dye or pigment added at some stage of a coloration process to alter the shade of the material being coloured.
(2) A compatible colouring matter added during standardisation to correct the hue of a colorant.

Side-paddle machine A machine for wet processing in which a rotating paddle is used to rotate the goods and the liquor round a central island which may have perforated sides. This separates the goods from the water space within the island, into which dyes, etc. may be added. In leather and fur dyeing this machine is often known as a raceway.

Sighting Temporary coloration of textile materials for either (a) visual identification of a particular fibre or quality or (b) to enable the printer to see the pattern when applying colourless substances. Note: The term tinting is also used in context (b).

Sighting colour (tinting colour) A fugitive tint.

Skitteriness An undesired speckled effect arising from differences in colour between adjacent fibres or portions of the same fibre.

Skying range An arrangement of rollers, usually extending above the normal machine level and placed immediately following a machine such as a padding mangle or a continuous dyeing machine to introduce a time-lag before the material enters the next stage in the processing sequence. Note: The usual purpose is to allow time for some chemical action to take place, e.g. air oxidation of vat dyes, or completion of coupling of an azoic diazo component and an azoic coupling component within the fibres.

Slack mercerising Mercerising of a fabric in absence of tension, or under reduced tension. Note: After washing-off, the fabric remains in the shrunken condition, and consequently a high degree of yarn crimp is obtained and the fabric becomes more extensible. There are two reasons for operating this process: to produce a stretch fabric or as part of the process for crease-resisting linen. Dye absorption is increased but lustre is not.

Stop padding Padding wherein the material is saturated with the pad liquor before reaching the nip.

Snap(s)/snapper(s) A defect in roller printing consisting of a double stripe of colour with a white centre caused by foreign matter under the doctor edge lifting it at this point. Note: The foreign matter itself prevents any colour from penetrating at the centre, but on each side excess print paste is allowed to pass.

Soap A salt of a long-chain fatty acid, which has detergent properties.

Soaping-off After-treatment of dyeings or prints with hot solutions of soap or detergent to remove loose surface dye, and/or to bring about aggregation of the dye within the fibre.

Soft-flow jet A jet dyeing machine (1) in which the fabric is transported from the dyeing chamber over a driven reel (which provides the motive force) and is then transported back to the dyeing chamber by the gentle action of the jet.

Soiling (printing) A fault caused by an inefficient lint doctor which allows print paste from a roller to be transferred to the colour box of a following roller, causing a gradual change in colour.

Solubilised sulphur dye A thiosulphuric acid derivative of a sulphur dye which during dyeing is converted to the substantive alkali-soluble thiol form.

Solubilised vat dye A water-soluble salt of the sulphuric ester of a leuco vat dye. Note: After application to the fibre the parent vat dye is regenerated by hydrolysis and oxidation.

Solvent dyeing Dyeing carried out from a continuous non-aqueous phase. Note: Water may be added to assist the dyeing process.

Solvent-assisted dyeing Dyeing carried out from an aqueous dyebath containing a small proportion of an organic solvent in solution, which normally acts to accelerate dyeing.

Space dyeing Production of multicolour yarns by application of various colorants at intervals along a yarn by printing or other methods. Note: Alternative processes include knit – deknit where a knitted tube of fabric is printed, fixed and deknit; the injection of dye liquor into the inner layers of wound packages (Astro-dyed method); and blanking off portions of wound packages before treatment with dye liquor (Frauchiger method).

Specky (dyeing or printing) Specks of strong colour within a printed mark or dyeing caused by undissolved or badly dispersed dye.

Spectral colour The colour produced by light of a single wavelength.

Spectrophotometer An instrument, usually photoelectric, for measuring the reflectance or transmittance of light (or other radiation) by an object at a particular wavelength in the spectrum.
Spray dyeing (1) (textile) Application of colorant to a substrate using a spray gun with the object of producing ombre effects. (2) (leather) A process for the dyeing of leather or correcting the colour of dyed leather where a dye solution is sprayed onto the surface (frequently in conjunction with a surfactant and/or solvent).

Spray printing A form of stencil printing.

Squeegee A straight-edged device made from hard rubber or metal used in screen printing to apply the print paste. The squeegee is stationary in rotary-screen printing and moves in flat-screen printing (see magnetic-roll squeegee).

Staining (1) An undesirable local discoloration. (2) Coloration of non-textiles by surface application of a coloured solution or dispersion. (3) In fastness testing of coloured textiles, the transfer of colorant from the test material to the adjacent materials (see ‘Standard methods for the determination of colour fastness of textiles and leather’, Bradford: Society of Dyers and Colourists, 4th edn, 1978) and supplements. (4) In textile printing, the soiling of whites in the washing process. (5) (Paper) A method of colouring paper as an after-process by treating it in the web with a dye solution.

Standard Depths A series of arbitrarily chosen depths, each judged to be equal for all hues, which enable dyeing, fastness or other properties to be compared on a uniform basis. Also refer red to as International Standard Depths, defined by DIN 53.235 and BS1006:A01:1978.

Standard Observer Data In the CIE system of colour measurement, the relative amounts of three defined stimuli, mixed additively, required by the average observer, to match spectral light at each wavelength under defined viewing conditions.

Standing bath A liquor in which batches of material are processed in sequence. Note: In order to obtain reproducible results after each batch the bath must be restored to its original state.

Star frame A frame having radial arms resembling the points of a star, hooks being placed fairly close together along each arm. It is used to suspend delicate fabrics at open width in dyeing or in steaming of prints. Note: In one type of dyeing machine the frame is horizontal. Starting from the centre of the frame the fabric is hung from the hooks to form a spiral; the frame is then lowered into a dyebath and by means of a gentle reciprocating motion it is continuously moved up and down. By periodically reducing the level of the dye liquor ombre dyeings are obtained. In a second type of machine there are two parallel sets of radial arms disposed vertically and fixed on a central axis or shaft; the fabric is supported on both selvages to form a spiral as described above. The frame is then lowered into a dyebath and reciprocated mechanically in the liquor.

Star steamer A steamer in which the fabric is supported on a star frame (a discontinuous, labour-intensive process).

Starch roller In multicolour roller printing, an unengraved roller, fed from a colour box containing thickener only, sited between two engraved rollers, usually printing contrasting colours. Note: It serves to remove surplus printing paste from the fabric and thereby minimises contamination of a following engraved roller by paste carried over from the previous roller.

Stencil printing The application of colorant to a substrate by brushing-on or spraying through a stencil usually cut in thin sheet metal or waterproofed paper.

Stenter An open-width fabric drying and finishing machine with hot-air circulation. The fabric is held along the selvages by a pair of endless chains fitted with pins (pin stenter) or clips (clip stenter) to maintain weft tension. The machine is used for drying, polymerisation of chemical finishes or pigment prints, fixation of dyes or heat setting of thermoplastic material. A limited degree of dimensional stabilisation of the fabric may be achieved.

Sticking-in (textile) Obstruction by a foreign body which prevents entry of the printing paste or ink into the engraving of a printing roller, thus causing a white or pale spot which repeats at every revolution of the roller. Note: The foreign body may be undissolved thickener dried printing paste or ink.

Stoving (1) Bleaching wool, silk, hair or other keratinous materials in a moist condition with sulphur dioxide in a chamber. (Wet stoving is treatment of a material with a solution of a sulphite or bisulphite.) (2) Curing or hardening an applied paint or ink film by heating.

Strength (1) (of a dye) The colour yield of a given quantity of dye in relation to an arbitrarily chosen standard. (2) (of a dyeing or print) Synonymous with depth. Note: The terms stronger and weaker are used in a different sense in colorimetry to denote more or less saturation in measured colour differences.

Strike (1) The uptake of dye by a substrate from a dyebath in the early stages of dyeing. (2) The result of the first period of dyeing, especially in wool dyeing.

Strike-off A preliminary small-scale print to evaluate the performance of a system or its components, e.g. substrate, printing paste, roller or screen.

Strike through A condition in which ink, printed onto a porous paper, penetrates to the reverse side of the print.

Stripping Destroying or removing dye or finish from a fibre.

Style (printing) A concise, though not necessarily complete, indication of the method of production of a print in terms of the process or the class or classes of dye used (or both).

Sublimation printing A form of transfer printing employing dyes that sublime readily and have substantivity for the substrate to which they are applied.

Substantivity The attraction between a substrate and a dye or other substance under the precise conditions of test whereby the latter is selectively extracted from the application medium by the substrate.

Sulphur dye A dye, containing sulphur both as an integral part of the chromophore and in attached polysulphide chains, normally applied in the alkali-soluble reduced (leuco) form from a sodium sulphide solution and subsequently oxidised to the insoluble form in the fibre.

Surface printing A roller-printing process in which the print paste is applied from wooden rollers carrying the raised design, e.g. in metal or felt edged by metal. Print paste is applied by a furnishier.
Surfactant An agent, soluble or dispersible in a liquid, which reduces the surface tension of the liquid (a contraction of ‘surface-active agent’).

Swelling (1) An undesirable migration of dye occurring between the dyeing and the drying of material.
(2) Transference of colour, dirt or grease into surrounding fabric, when removing stains by hand from a fabric by aqueous or solvent treatment. Note: The resulting mark is frequently refer red to as a sweat mark, halo or ring.

Swelling agent A substance that causes the total liquid imbibition of a fibre to increase. Note: A swelling agent may be used in a dyebath or a printing paste to promote coloration by accelerating the diffusion of dyes into a fibre.

Syndet A detergent that is not a soap. (A contraction of ‘synthetic detergent’.)

Syntan A name for synthetic tanning agents (see also backtanning).

Tailing A dyeing fault consisting of a gradual change in colour along a length of material to which colorant has been applied by padding or other continuous technique.

Tailing-in A fault caused by printing paste from previous rollers being transferred from the tint doctor to the leading edge of the engraving, causing a discoloration of that portion of the print.

Tanning (tannage) Processing whereby putrescible raw hides and skins are converted into leather. For satisfactory dyeing the form of tannage must be known.

Temperature-range properties (of a dye) The extent to which the depth produced by a dye under specified application conditions is affected by a change of temperature.

Tenter Synonymous with stenter.

Textile printing The production of a predetermined coloured pattern on a textile substrate, usually with a definite repeat, by deliberate localised application of the colorants or their precursors.

Thermochromism Change in colour of certain materials on exposure to heat which is reversible when the temperature is returned to its original value.

Thermofixation The use of dry heat to achieve the fixation of colorants or chemical finishes on textile materials.

Thickener (1) (paper) A machine used to increase the consistency of pulp.
(2) (textile) A natural or synthetic product added to a print paste to permit transfer of a colorant to the substrate in the required design, and at the same time to prevent spread of colour by capillary action to unwanted areas.

Thin Synonymous with pale.

Tie and dye A technique of dyeing to produce unique patterned effects by tying or knotting material before immersion in a dyebath, to restrict penetration of dye locally.

Time of half dyeing \( t_{\text{r}} \) The time taken for a substrate to sorb half of the dye it will sorb at equilibrium under the same conditions.

Tintorial value Synonymous with colour value.

Tintorial yield Synonymous with colour yield.

Tins Synonymous with drying cylinders.

Tint medium The transparent medium used to reduce the strength of printing inks.

Tinter A relatively concentrated pigment dispersion used in the tinning (2) of paints.

Tinting (1) See sighting.
(2) Relatively small modification of the colour of a paint by the addition of a small amount of a colorant, especially with the object of matching a given pattern. Note: The colorant to be added is often in the form of a relatively concentrated pigment dispersion (a tinter).
(3) Production of a pale colour in dyeing.
(4) The appearance of the colour of the ink on the non-image area of a lithographic plate during printing, e.g. resulting from a dispersion of ink in the damping system.

Tippy wool Wool in which the tip portions of the fibres have been so damaged by weathering during growth as to have markedly different dyeing properties.

Topochrome Synonymous with afterchrome.

Topping (dyeing) The application of further colorant not necessarily of the same hue or class to a dyed substrate in order to adjust the latter to the desired final colour.

Transfer printing Transfer of a coloured design from a first substrate, usually paper, to another substrate, normally under the influence of heat and/or moisture and pressure.

Transparent white Synonymous with tint medium.

Tristimulus colorimeter An instrument (usually photoelectric) designed to measure the colour of an object directly in terms of the tristimulus values.

Tristimulus values (of a coloured object). The amounts of three defined primaries (usually blue, red and green) required to be mixed additively to match the colour of the object, under defined conditions.

Trough Synonymous with beak.

Two-phase printing A two-stage process in which a fabric is first printed with a dye paste lacking one or more of the components required for fixation. Note: The omitted components are subsequently padded on to the fabric (for example see flash ageing).

U-box An upright U-shaped vessel for continuous processing of textiles. Note: The material enters one arm of the U, where it remains for a dwell period, and is then withdrawn through the other arm (see also J-box).
Uneven mark A printing fault characterised by difference in appearance between corresponding printed marks across the fabric. Note: This may be caused by uneven engraving, uneven printing weight, uneven lapping, etc.

Union dye A dye or a mixture of dyes which will yield an apparently solid dyeing on the fibre mixture for which it is devised.

Vapour-phase dyeing A dyeing process in which dye is transported to the fibre as a vapour.

Varnish A transparent coating composition based essentially on drying oils, resins and solvents.

Vat (noun) (1) A vessel or tank.
   (2) A liquor containing a reduced (leuco) vat dye.

Vat (verb) To dissolve a vat dye by the combined action of alkali and reducing agent.

Vat dye A water-insoluble dye, usually containing keto groups, which is normally applied to the fibre from an alkaline aqueous solution of the reduced enol (leuco) form, which is subsequently oxidised in the fibre to the insoluble form.

Vigoureux printing Synonymous with mélange printing.

Visible absorption spectrum The curve relating the absorption of light by a coloured substance (usually in solution) to the wave length of the light.

Wax print Resist printing process in which molten wax is printed as a mechanical resist prior to application of the ground colour. Used, for example, in batik and African print styles.

Weak Synonymous with pale.

Wet blue leather Leather which, after chrome tanning, has not been further processed and is then available in the wet condition for dyeing, etc.

Wet-on-dry Descriptive of a printing process in which the print produced by one screen or roller is dried before the next printing paste is applied.

Wet-on-wet (1) Descriptive of a padding process in which the material to be padded is wet, e.g. from a previous process stage.
   (2) Descriptive of a printing process in which there is no drying between the printing of different colours in a pattern.
   (3) Application of more paint to a still wet, painted surface.

Wet stoving See stoving.

Wetting back The process of soaking crust leather prior to dyeing. In the leather industry the term ‘soaking’ is never used for this but for the entirely different process of rehydrating raw hides and skins.

Wince Variant of winch.

Winch A horizontal rotor, commonly circular or elliptical in cross-section over which fabric, in rope form or in open width, passes during processing.

Winch dyeing machine A dyeing machine consisting essentially of a dye vessel fitted with a driven winch (usually above the liquor level) which rotates and draws a length of fabric, normally joined end to end, through the liquor.