



Intrabond liquid dyes for paper



Base Furnishes:

70% Bleached Hardwood
30% Bleached Softwood
30°SR
2% Liquid Aluminium Sulphate

For packaging grade Brown dyes and Basic dyes :
100% wastepaper
30°SR
2% Liquid Aluminium Sulphate

Illustration of dyes

All Intrabond liquid Direct dyes are illustrated at 2.0%
All Intrabond liquid Basic dyes are illustrated at 1.0%

Backwater colouration

The dye applied at the 2% level on 1.5% consistency, is filtered through a fine strainer. The fibre-free filtrate is then compared with distilled water.

Backwater colouration is assessed against ISO 105-A03 grey scale:

1 = marked colouration 5 = colourless

Lightfastness

Lightfastness (Xenotest) is tested on sized papers at 2% strength (or powder equivalent) in accordance with ISO 105-B02 (under normal conditions) and assessed against the blue scale which is exposed to light at the same time.

1 = poor lightfastness 8 = outstanding lightfastness



Fastness to water and chemicals

A sample of the dyed paper is placed between two sheets of glass fibre paper, soaked in an aqueous solution containing the quantity of chemicals given below. The test sandwich is then placed between two sheets of glass and a weight of 1kg applied for 10minutes. The staining of the blotters is assessed after air drying.

Solution: Deionised water

0.5% Sodium Carbonate

3% Acetic Acid

40% Alcohol

Assessment is by comparison with the ISO 105-A03 grey scale.
5= no staining

1= marked staining

Bleachability

Oxidation

The dye is added at 2% (or powder equivalent) to a stock at 1.2% consistency for 15 minutes at pH7. Sodium hypochlorite is added (2% available chlorine on the weight of dry pulp) and the mixture transferred to a closed vessel where it is heated to 40°C and agitated for 30 minutes. After sheet formation and drying, loss of colour strength is determined by comparison with an untreated, dyed control.

Reduction (hydrosulphite)








The dye is added at 2% (or powder equivalent) to a stock at 4% consistency for 15 minutes at pH 7, and then transferred to a plastic vessel where it is heated to 50°C in a water bath. Borax and sodium hydrosulphite (0.66% analytical grade borax, 2% sodium hydrosulphite) are then added. The vessel is closed and left for 30 minutes at 50°C during which time it is agitated several times. After sheet formation and drying, loss of colour strength is determined by comparison with an untreated, dyed control.







Assessment of bleachability:

1 = not bleachable

5 = sample almost white –highly bleachable

Intrabond liquid Direct dyes	Illustration	Lightfastness	Backwater colouration	Water Fastness	Acid Fastness	Alkali Fastness	Alcohol Fastness	Reduction Bleachability	Oxidation Bleachability	Density g/cm3	Viscosity (Cps)	Freezing point °C	pH
Yellow D-6G		3-4	4-5	5	5	5	4-5	1-2	3	1.1	22	-3	9
Yellow D-BN		4	4	5	5	5	4-5	3	3-4	1.08	32	-5	8
Yellow D-2GF		3-4	5	5	4-5	4-5	5	1-2	1-2	1.1	16	-2	7.6
Yellow D-4RN		3	4	5	5	4-5	4-5	1	1	1.17	100	<-5	8.1
Orange D-2RFN		3	4-5	5	5	5	4-5	4	3	1.1	12	<-5	8
Scarlet D-BSC		2	5	5	5	5	4-5	3	4	1.1	42	<-5	8.5
Red D-3BF		3	4-5	4-5	5	5	4	5	5	1.11	<100	0	9
Red D-B		2-3	3-4	4-5	4-5	4-5	3	1-2	3-4	1.06	5	<-5	8

Intrabond liquid Direct dyes	Illustration	Lightfastness	Backwater colouration	Water Fastness	Acid Fastness	Alkali Fastness	Alcohol Fastness	Reduction Bleachability	Oxidation Bleachability	Density g/cm3	Viscosity (Cps)	Freezing point °C	pH
Pink D-BR 200		2-3	4	4-5	5	5	5	4	4	1.2	6	0	7.5
Violet D-2B		2-3	5	4-5	5	5	3-4	3-4	5	1.1	36	-12	9.8
Blue D-S		1	4	4-5	4-5	4-5	4-5	3-4	4-5	1.15	<100	<5	8.5
Blue D-2RF		3-4	4-5	5	5	5	5	5	1	1.12	80	<5	8.9
Turquoise D-BRL		5	4-5	5	5	5	5	1-2	4	1.1	12.5	<-5	10
Turquoise D-BG		4	4	5	4	3	3-4	2-3	3-4	1.15	97	-5	4.3
Green D-GNW		4	4-5	5	5	5	4-5	2-3	4	1.1	25	-5	8.4

Intrabond liquid Direct dyes	Illustration	Lightfastness	Backwater colouration	Water Fastness	Acid Fastness	Alkali Fastness	Alcohol Fastness	Reduction Bleachability	Oxidation Bleachability	Density g/cm3	Viscosity (Cps)	Freezing point °C	pH
Black D-GL		3	5	5	5	4-5	5	5	1	1.05	30	<2	9.4
Black D-HSC		2	4-5	5	5	4-5	3-4	1-2	4	1.1	<100	-1	12
Brown D-LE		3-4	4	4-5	5	4-5	4	1	2	1.1	50	<5	8.1
Brown D-M		3	3-4	5	5	4-5	4	1	1	1.15	80	<-5	8.1
Brown D-MC		2-3	4	5	5	5	5	2	3	1.2	<100	<-5	9.6
Brown D-MODS		2	4	5	5	5	5	2	3	1.2	<100	<-5	8.5

Intrabond liquid Basic dyes	Illustration	Lightfastness	Backwater colouration	Water Fastness	Acid Fastness	Alkali Fastness	Alcohol Fastness	Reduction Bleachability	Oxidation Bleachability	Density g/cm3	Viscosity (Cps)	Freezing point °C	pH
Yellow B-3G		1	5	4-5	4	4-5	3-4	4	3-4	1.1	30	-16	1.9
Yellow B-4G		1	5	5	5	5	4	4	1-2	1.1	<100	-11	<3
Orange B-G		1	3-4	5	5	4-5	4-5	1	1	1.1	<200	-10	4.5
Red B-4G		1	2-3	5	4	5	4	5	5	1.1	<200	-13	4.0
Violet B-4R		1	4	5	5	5	5	3-4	4-5	1.1	<200	-12	4.0
Blue B-N		1	4	5	5	5	4-5	4	2	1.1	<200	-12	3.0
Green B-G		1	3	4-5	3	5	3-4	3	1-2	1.10	42	-6	2.5
Brown B-R		1	5	4	4-5	4	3	4	2	1.1	200	<-5	3.5

The information contained in this document is based upon the present state of our knowledge and upon the results of detailed evaluation work, presented objectively. It is made without liability as to any results obtained by the application of the product described therein.

It is strongly recommended that, before proceeding to industrial scale work, trials should be carried out to assess product performance under the specific conditions that will be encountered.