DIKAPHOR AJL

Fluorescent Brightener for Paper Industries

DIKAPHOR AJL is a fluorescent brightener, which gives outstanding whiteness to cellulose materials, especially paper and pulp with brilliant bluish shade.

DIKAPHOR AJL can be applied by surface sizing, surface coating, and beater dyeing method.

DIKAPHOR AJL is also suitable for use in the exhaustion process to cotton fabrics especially in the peroxide bleaching method.

Characteristics

- High affinity for cellulose materials e.g. pulp, paper and cellulose fibers.
- Versatile in application, and it can be applied at all stages in papermaking.
- Applicable in a neutral/alkali sizing.
- Good substantively and excellent white effects for polyvinyl alcohol (=PVA) and Latexes.
- Outstanding compatibility with fillers, white pigments, binders and latexes for paper making.
- Very stable in alkaline liquors
- Good stability to Peroxides, Reducing agents etc.

Properties

Chemical constitution	: Derivative of 4.4'-Diaminostilbene-2.2'disulfonic acid
Appearance	: Pale Yellow Liquid
Ionic	: Anionic
Solubility	: Easily dissolve into water
pH of 1% aq. Sol.	: Weak alkaline

Stability

Applicable pH range	: 6 - 13	Hydrosulphite	: Good
Alkalis	: Very Good	Chlorites	: Poor
Acids	: Moderate	Aluminum sulfate	: Good
Hydrogen peroxide	: Very Good		
Hard water	: Good		
Storage	: Good in Dark/Cool place (must not be exposed to direct sun-light)		

Compatibility or Affinity

Binders		**Fillers**	
Starch	: Moderate	Clay	: Moderate
Casein	: Good	Talc	: Moderate
PVA	: Good	Calcium carbonate	: Moderate
Latex	: Good		

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Application

1) Whitening / Brightening method for pulp (Beater dyeing method)

DIKAPHOR AJL	0.1 - 1.5% o.w. pulp
Pulp ratio (N:L)	1:3
Pulp concentration	
a) in chest	3.3% (weight)
b) in flow box	0.5% (weight)
Beating degree	400
Thickness of paper	150 g/m2
Sizing agent	1 - 3% on weight of pulp
Aluminum sulfate	1 - 3% on weight of pulp

***** Unsized paper can be produced similarly without adding sizing agent and aluminum sulfate in the above recipe.

2) Addition to coating color (Surface coating method)

A) Starch composition

	Dry composition	Wet composition
Pigment : Clay Calcium carbonate	 80 parts 20	 80 parts 20
Sodium pyrophosphate	0.2	0.2
Water	--	27.6
Dispersing agent	0.2	0.5
Starch	5.5	5.5
Water	--	10
Latex	12.5	28
Resin	--	1.6
Ammonia water (25%)	--	1.3
Calcium stearate	1.0	2.0
DIKAPHOR AJL (Dosage to be calculated on the total solids content)	0.1 - 3.0% o.w. Pigment	0.1 - 3.0% o.w. Pigment
Water	--	23.0

Note: DIKAPHOR AJL is preferably added after the coating slip has been made.

Coating condition: -

Wire rod	No. 14
Coating weight	22gm/m2 (Woodfree paper, one side)
Coating temperature	Room temperature
Drying condition	2 min. At 90?C

Calendering condition:-

Pigment/Binder	100/18
Starch/Latex	5.5/12.5
Total solids	58%
Slip pH	8.5 - 9.5

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B) Casein formulation

	Dry composition	Wet composition
Clay	80 parts	80 parts
Calcium carbonate	20	27.4
Sodium pyrophosphate	0.2	0.2
Water	--	40
Dispersing agent	0.2	0.5
Ammonium water(25%)	--	0.2
Casein	7.0	8.0

Ammonium water(25%)	--	1.3
Water*	--	40
Latex	12	27
Antiseptics	--	0.1
Surfactant	--	0.1
Calcium stearate	1	2
DIKAPHOR AJL (Dosage to be calculated on the total solids content)	0.1 - 3.0%	0.1 - 3.0%
Water	--	41

*** Note:** DIKAPHOR AJL is preferably added after the coating slip has been made up.

Coating condition: -

Coating rod	Wire Rod No. 14
Coating temperature	Room temperature
Drying	2 min. At 90?C
Coated weight	20gm/m2

Calendering condition:-

Pigment/Binder	100/19
Casein/Latex	7/12
Total solids content	43%
Slip pH	9.0 - 10.0

The information's given in this literature are based on the present state of our knowledge.

However, in view of the wide range of uses and procedures, they cannot necessarily be applied in all cases.

Accordingly, when actually using DIKAPHOR AJL, it I recommendable to perform preliminary experiments sufficiently.

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