



REACTIVE DYES

COLD REACTIVE DYES: GAMMAZOL LX/CA/E/HB/S-W; SUPERFIX

Gammazol: reactive dyes of Sulphato Ethyl Sulphone class. They turn into Vinyl Sulphone when linked to the cellulosic fiber: great solubility, good levelling power, good yield, very good reproducibility; cost-effectiveness of dyeing process; application versatility in dyeing and printing.

Gammazol LX : They own great levelling properties; they are especially used for pale shades. Suggested dye temperature: 50-60°C

Gammazol CA: they show high degree of fixation, easy to clean, high color fastness, high chlorine fastness and washing fastness.
Uses: Cellulosic fiber dyeing, suitable for exhaustion dyeing, continuous dyeing and other processes. Suggested dye temperature: 50-60°C

Gammazol E: great reproducibility in pale shades ;high light fastness; good chlorine and perspiration fastness; post-mecerization fastness; Suitable for exhaustion processes, cold pad-batch and continuous processes. Suggested dye temperature: 50-60°C

Gammazol HB: they own great yield due to high fixation % so that less quantities of dyes than conventiona are required= Cost-effectiveness
Less chemicals, time and easier washing off; less dye in effluent; water and energy saving; compatible with other Gammazol dyes series; high reproducibility;good overall fastness. Suggested dye temperature: 50-60°C

Gammazol S-W: it's a new reactive dye series for medium and dark shades. Great build-up properties mean cost-saving; the greatest reproducibility within dark shades; easy washing-off; top quality reactive dyes. Exhaustion application method for fabric and yarn; continuous dyeing and cold-pad-batch for dark shades, knitted and woven fabric.

Superfix: they are bifunctional reactive dyes; chemically they own both Monochlorotriazinic and vinylsulphonic link. They have good reactivity and can be applied ,with exhaustion method, both at 60°C with soda ash and caustic soda or at 80°C with only soda ash .Cold-pad-batch is possible.

Gammazol FL: trichromy of reactive dyes with extremely high light fastness. Suitable both for exhaustion and continuous application method.

EXHAUSTION METHOD:

% Dye

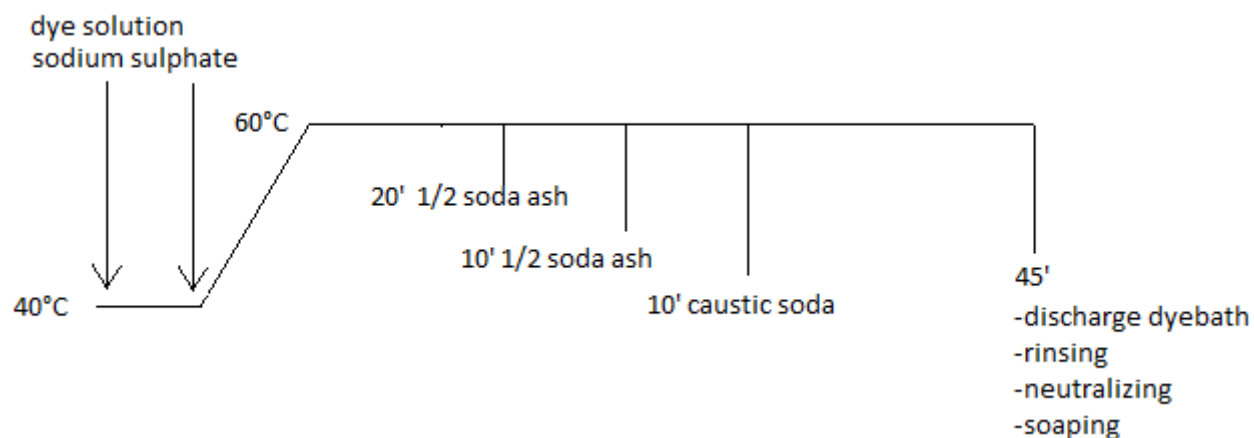
15-100 g/l Sodium sulphate

4 g/l soda ash (sodium carbonate)

2 cc/l caustic soda (sodium hydroxide) 36Bé

Start dyeing process at 40°C, solve the dye apart with water at 60°C.

Add the dye solution and sodium sulphate into the dyebath; rise up temperature at 60°C. After 20 minutes add half of soda ash dose; after 10 minutes add the other half; after 10 minutes add caustic soda; keep the temperature for 45 minutes. Discharge the dyebath, rinse thoroughly with warm and cold water. Neutralize with acetic acid and soaping at 98°C.



HOT REACTIVE DYES: GAMMAFIX; GAMMAFIX HEXL

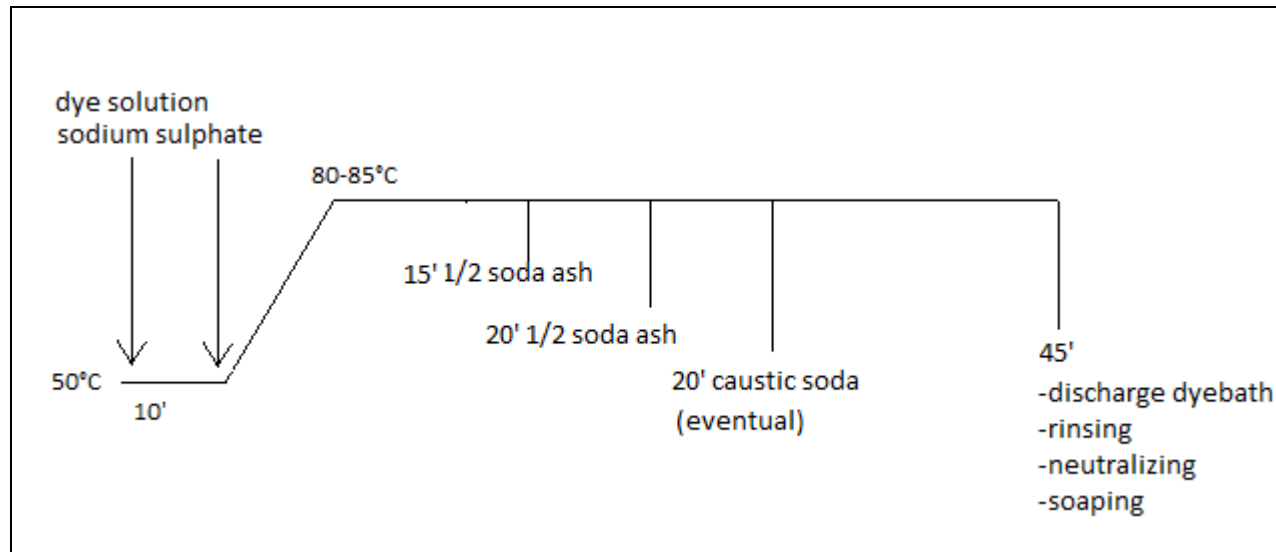
Gammacolor Gammafix reactive dyes are suitable for cellulosic fibers dyeing.

These dyes own great exhausting and fixation power; this feature facilitate subsequent operation like washing and soaping.

Gammafix main features:

- excellent repeatability with different liquor ratio.
- great cheapness due to good fixation.
- suitable for polyester/cellulose blends

-EXHAUSTION METHOD-



% dye	Sodium sulphate (g/l)		Alkali (g/l)			Fixation time (min)
	Non mercerized cotton	Mercerized cotton or viscose	If only soda ash	Mixed alkali:		
				Soda ash	Caustic soda 100%	
Up to 0,10	10	5	10	5	0,2	30
0,11-0,30	20	10	10	5	0,2	30
0,31-0,50	30	20	10	5	0,2	45
0,51-1,00	45	30	15	5	0,2	45
1,01-2,00	60	40	15	5	0,5	45
2,01-4,00	70	55	20	5	0,5	60
Above 4,00	90	65	20	5	0,5	60

Gammazol LX/CA series (60°C) H series (80°C)	%	name	CI	Light fastness	Water	Washing 60°C	Acidic perspiration	Alkaline perspiration	Chlorinat ed water	solubility		Rubbing		Dischargeability	
										20°C	80°C	Dry	Wet	neutral	alkaline
	1	Giallo LX	176	6	5	5	6	5-6	4-5	90	100	4-5	4	4-5	1
	1	Rosso LX	223	4-5	5	5	5	5	3	100	100	5	4	4-5	2-3
	1	Rosso 2BR (LX series)	mix	6	4-5	5	6	5	2-3	60	140	4	4	1	1
	1	Blu LX	mix	5-6	4	4-5	5	5	2-3	160	180	4	3-4	1	1
	1	Giallo CA	mix	5	4-5	5	4-5	4-5	4-5	100	100	4	5	1	1
	1	Rosso CA	mix	3-4	4	5	4	4-5	4-5	100	100	3-4	5	1	1
	1	Blu CA	mix	6	4-5	4-5	4-5	4-5	4-6	60	100	4	4	1	1
	1	Giallo HRN		4	5	4-5	5	4-5		80	100	5	5		
	1	Rosso HF		5	5	4-5	4-5	4-5		80	100	4-5	4-5		
	1	Rosso H-B 150%		5	5	4-5	4-5	4-5		80	100	4-5	4-5		
	3	Blu HRN		4-5	4	4-5	4-5	4-5		100	100	4-5	4		
	3	Marino H2G		4-5	4	4-5	4-5	4-5		100	100	4-5	4		

Chlorinated water (20ppm); all the values refer to Staining on cotton. Light fastness ISO 105 B02 (blue scale up to grade 8)

Gammazol E series	%	name	CI	Light fastness	Water	Washin g 60°C	Acidic perspira tion	Alkaline perspira tion	Chlorina ted water	solubility		Rubbing		Dischargeability	
										20°C	80°C	Dry	Wet	neutral	alkaline
	1	Rosso ERN	242	3-4	5	4-5	5	5	4-5	80	100	3	4-5	1	1
	1	Rosso E4BA	158	4	5	4	5	5	4-5	50	100	3	4-5	Disch	Disch
	1	Scarlatto E2GA	mix	3-4	4-5	4-5	5	5	3-4	50	100	3	4-5	1	1
	1	Blu EBNA	225	4	4-5	4-5	4-5	4-5	3	90	100	3	4-5	3	3
	2,5	Royal EFR	224	5	4-5	4-5	4-5	4-5	3-4	200	200	4-5	4-5	Not disc.	Not disc.
	3	Blu EFFN	181	4	4-5	4	4-5	4-5	1-2	100	100	4-5	3	Not disc.	Not disc.
	1	Rosso E6BA	159	2	4-5	4-5	4-5	4-5	4	150	150	4-5	3	Disch.	Disch.
	1	Arancio E3GA	64	1-2	4-5	4-5	4-5	4-5	3-4	100	100	4-5	3	Not disc.	Not disc.
	1	Giallo EG	27	5	4-5	4-5	4-5	4-5	4	100	100			partiall y	partially

Chlorinated water (20ppm); all the values refer to Staining on cotton. Light fastness ISO 105 B02 (blue scale up to grade 8)

Gammazol HB series	%	Name	CI	Light fastness	Water	Washing 60°C	Acidic perspiration	Alkaline perspiration	Chlorinated water	solubility		Rubbing		Dischargeability	
										20°C	80°C	Dry	Wet	neutral	alkaline
	3	Giallo HB-4G	186	>6	5	5	4-5	4-5	3	100	100	5	3-4	3-4	4-5
	3	Giallo HB	mix	>6	5	4-5	4-5	4-5	2	100	100	5	3-4	4	3
	1	Giallo HB R		4	5	4-5	4-5	4-5		100	100	5	5		
	3	Arancio HB	mix	6	5	4-5	4-5	4-5	2-3	100	100	5	3-4	4-5	5
	3	Rosso HB-2B	mix	5	4-5	4-5	4-5	4-5	3	100	100	5	2-3	2-3	1-2
	3	Rosso HB-3B	mix	5	4-5	4-5	4-5	4-5	4	100	100	5	3	2-3	1-2
	1	Rosso HB-7B	mix	5	5	4-5	5	5	1	100	100	4-5	4-5	2-3	3
	3	Rosso HB	mix	4-5	4-5	4-5	4-5	4-5	3-4	100	100	5	3	2-3	1-2

Chlorinated water (20ppm); all the values refer to Staining on cotton. Light fastness ISO 105 B02 (blue scale up to grade 8)

Gammazol HB series	%	Name	CI	Light fastness	Water	Washing 60°C	Acidic perspiration	Alkaline perspiration	Chlorinated water	solubility		Rubbing		Dischargeability	
										20°C	80°C	Dry	Wet	neutral	alkaline
	3	Blu HB	mix	5	4-5	4-5	4-5	4-5	4	100	100	4-5	2-3	2	2
	2	Blu HB-G													
	2	Marino HB	mix	4-5	4-5	4-5	4-5	4-5	3-4	100	100	4-5	2-3	3-4	3-4
	6	Nero HB	mix	5-6	4-5	4-5	4-5	4-5	4-5	100	100	4-5	2-3	4	4-5
	6	Nero HBG	mix	6	4-5	4-5	4-5	4-5	3-4	100	100	4-5	2-3	3-4	4
	6	Nero HBR	mix	5-6	4-5	4-5	4-5	4-5	4-5	100	100	5	2-3	4	4
	3	Royal HB	mix	4-5	4-5	4-5	4-5	4-5	1	100	100	5	3-4	1	1

Chlorinated water (20ppm); all the values refer to Staining on cotton. Light fastness ISO 105 B02 (blue scale up to grade 8)

Gammazol series	%	Name	CI	Light fastness	Water	Washin g 60°C	Acidic perspiration	Alkaline perspiration	Chlorinated water	solubility		Rubbing		Dischargeability	
										20°C	80°C	Dry	Wet	neutral	alkaline
	1	Giallo Brill. 4GL 200%	160	6	5	5	5	5	2	100	100			3	3
	1	Giallo Brill. 2GL 150%	37	6-7	5	5	4-5	4-5	2-3	100	100			2-3	2-3
	1	Giallo GNL 200%	23	6	5	5	5	4-5	1	100	100			2-3	2-3
	1	Giallo LS-4G													
	1	Giallo GR 150%	15	6	5	5	5	5	1	100	100			3-4	3-4
	1	Giallo RI	mix	5-6	5	5	4-5	4-5	1	100	100			3-4	3-4
	1,8	Giallo FL-2R	-	7-8	4-5	4-5	4-5	4-5	4-5	140	140	4-5	4	Disch.	Disch.
	1	Giallo 3RS 150%	176	6	5	5	5	5	4	100	100			3-4	3-4
	1	Giallo Oro RNL 150%	107	5	4-5	5	4-5	5	2-3	90	90			4	4
	1	Arancio Brill. 3R	16	5-6	5	5	5	5	2	80	80			3	3

Chlorinated water (20ppm); all the values refer to Staining on cotton. Light fastness ISO 105 B02 (blue scale up to grade 8): when 3 values are reported: 2/1, 1/1, 1/12 of the shade; when 2 values are reported: 1/1, 1/10 of the shade.

Gammazol Gammazol FL	%	Name	CI	Light fastness	Water	Washin g 60°C	Acidic perspira tion	Alkaline perspira tion	Chlorina ted water	solubility		Rubbing		Dischargeability	
										20°C	80°C	Dry	Wet	neutral	alkaline
	1	Rosso RBL 133%	198	3-4 4 5	4-5	4-5	4-5	4-5	2-3	100	-	4-5	4	Moderate	Moderate
	4	Rosso FL-2BL	-	8	4-5	4-5	4-5	4-5	4	85	85	4-5	3	Disch.	Disch.
	2	Rosso F3B 100%	180	3 3-4 4-5	5	5	4-5	4-5	4-5			4-5	3	Good	Good
	1,5	Rosso Brill BB 150%	21	4-5	5	5	4-5	4-5	2	100	100	5	3-4	4-5	4-5
	1	Rosso Brill 3B	23	4	4-5	5	5	5	3-4	70	100	3-4	3-4	2	2
	2	Rubino GR	170	7	4-5	5	4-5	4-5	4-5	100	100			3-4	3-4
	1,5	Violetto Brill. 5R 150%	5	6-7	5	3-4	4	4	3-4	100	100			3	3
	1,80	Giallo FL-2R	Na	6 5	4-5	4-5	4-5	4-5	4-5	150	nd	4-5	4	Disch.	Disch.
	4,00	Rosso FL-2BL	Na	6+ 3-4	4-5	4-5	4-5	4-5	4	95	nd	4-5	3	Disch.	Disch.
	3,80	Blu FL-R	Na	6 4	4-5	3-4	3-4	3-4	4	110	nd	4-5	3	Not Disch.	Not Disch.

Chlorinated water (20ppm); all the values refer to Staining on cotton. Light fastness ISO 105 B02 (blue scale up to grade 8): when 3 values are reported: 2/1, 1/1, 1/12 of the shade; when 2 values are reported: 1/1, 1/10 of the shade. Only for FL series: light fastness up to grade 6

Gammazol series	%	Name	CI	Light fastness	Water	Washing 60°C	Acidic perspiration	Alkaline perspiration	Chlorinated water	solubility		Rubbing		Dischargeability	
										20°C	80°C	Dry	Wet	neutral	alkaline
	1	Turchese G 150%	21	5	5	4-5	5	5	3-4	100	100			2	2
	1	Sky Blue G		6		4-5	4-5	5	3	200	200			Not disc.	Not disc.
	1	Verde Brill. 6B	38	6	5	4	4	4	2	100	100			2	2
	1	Blu Brill. R special	19	7	5	5	4-5	4-5	3-4	100	100			2	2
	1,5	Blu Brill FG2B	220	6-7	5	4-5	4-5	4-5	4	100	100			3	3
	1	Blu FNR	235	6 7 7	5	5	5	4-5	4	100	100				
	1	Blu FNG	Mix	5 6-7 6-7	5	5	5	4-5	3	100	100				
	1	Blu Scuro SLT	Mix	5-6 6-7	5	4	4-5	3-4	3-4	200	200			3	3
	1	Blu TS-3G	-												
	2	Blu RGG	mix	4-5	4-5	4-5	4-5	4-5	2-3	100	100			3	3

Chlorinated water (20ppm); all the values refer to Staining on cotton. Light fastness ISO 105 B02 (blue scale up to grade 8): when 3 values are reported: 2/1, 1/1, 1/12 of the shade; when 2 values are reported: 1/1, 1/10 of the shade.

Gammazol series	%	Name	CI	Light fastness	Water	Washin g 60°C	Acidic perspiration	Alkaline perspiration	Chlorinated water	solubility		Rubbing		Dischargeability	
										20°C	80°C	Dry	Wet	neutral	alkaline
	2	Blu 3R	28	6-7	5	4-5	4-5	4-5	3	100	100			3	3
	2	Blu HR	89	5	4-5	4-5	4-5	4-5	2	100	100			4-5	4-5
	3	Blu marino GG	203	5	4-5	5	4-5	4-5	2-3	100	100			3	3
	1	Grigio 106E	Mix	6 7	5	4-5	5	5	2	80				3	3
	1	Grigio scuro KE	Mix	6 7	5	4-5	5	5	2	80				3	3
	6	Nero RL 150%	31	7	5	4-5	5	5	2	80	80			3	3
	3	Nero B 150%	5	4	5	4-5	4-5	4-5	2	100	100			4-5	4-5
	5	Nero N 150%	Mix	4-5	4-5	4-5	4-5	4-5	1	100	100			4-5	4-5
	6	Nero SLR	mix	4-5	4-5	4-5	3-4	3-4	3	100	100			2	2
	6	Nero NFG	mix	4-5	4-5	4-5	4-5	4-5	1	100	100			4-5	4-5
	4	Nero VNN	mix	5	4-5	4-5	4-5	4-5	1-2	150	150			Disch.	Disch.

Chlorinated water (20ppm); all the values refer to Staining on cotton. Light fastness ISO 105 B02 (blue scale up to grade 8): when 3 values are reported: 2/1, 1/1, 1/12 of the shade; when 2 values are reported: 1/1, 1/10 of the shade.

Gammafix HEXL series	%	Name	CI	Light fastness	Water	Washin g 60°C	Acidic perspira tion	Alkaline perspira tion	Chlorina ted water	solubility		Rubbing		Dischargeability	
										20°C	80°C	Dry	Wet	neutral	alkaline
	1	Giallo HEXL		5 5		5			4		50				Not disc.
	1	Arancio brill. HEXL		3-4 3-4		4-5			4		75				Not disc.
	1	Rosso profondo HEXL		4 3-4		4-5			3-4		100				Not disc.
	1	Rosso brill. HEXL		5 4		4-5			4		50				Not disc.
	1	Cremisi HEXL		4 3-4		4-5			4-5		100				Not disc.
	1	Royal HEXL		4 3-4		4			2		100				Not disc.
	1	Marino HEXL		4 3-4		4-5			3-4		100				Not disc.
	1	Blu scuro HEXL		5 5		4-5			3-4		60				Not disc.

Chlorinated water (20ppm); all the values refer to Staining on cotton. Light fastness ISO 105 B02 (blue scale up to grade 8): when 3 values are reported: 2/1, 1/1, 1/12 of the shade; when 2 values are reported: 1/1, 1/10 of the shade

Gammazol S-W series	%	name	CI	Light fastness	Water	Washing 60°C	Acidic perspiration	Alkaline perspiration	Chlorinate d water	solubility		Rubbing		Dischargeability	
										20°C	80°C	Dry	Wet	neutral	alkaline
		Gold. Yellow RB (S3R)		4-5	5	5	5	5	3	100	100			partially	partially
		Orange R3R (W3R)		4	5	5	4-5	4-5	3RD	100	100			Disch.	Disch.
		Deep Orange R4R (S4R)		3-4	5	4-5	4-5	5	4	100	100			Disch.	Disch.
		Deep red RF (SB)		4	5	4-5	4	4	2-3	100	100			Not disc.	Not disc.
		Red W B		4	4-5	4-5	4	4	2-3	100	100				
		Dark Blue W -R		5	5	4-5	5	5	2	100	100			Not disc.	Not disc.
		Navy SG		3-4	5	4-5	5	5	4-5	100	100			Disch.	Disch.
		Navy WB		3-4	5	4-5	5	5	1	100	100			Disch.	Disch.
		Black HBG		5-6	4-5	4-5	4-5	4-5	4-5	100	100				
		Black HBR		5-6	4-5	4-5	4-5	4-5	4-5	100	100				
		Deep Cherry R-D (S-D)		4-5	5	4-5	5	5	4-5	100	100			Not disc.	Not disc.
		Ruby R3B (S3B)		5	5	4-5	5	5	4-5	100	100			Not disc.	Not disc.
		Deep Night R-R (S-R)		3-4	5	4-5	5	5	2	100	100			Disch.	Disch.

Chlorinated water(20ppm)value: Ch. Light fastness ISO 105 B02 1/1SD (blue scale up to grade 8). Washing&perspiration value: staining on cotton.

Gammafix Series (80°C)	%	Name	CI	Light fastness	Water	Washing 60°C	Acidic perspiration	Alkaline perspiration	Chlorinated water	Solubility (30°C)	Rubbing		Dischargeability
										g/l	Dry	Wet	
	3	Verde H4BD	19	4	3-4	4	2-3	3	2	60	5	2-3	poor
	2	Giallo Brill. H-6G	135	4-5	4-5	5	4-5	4-5	3	80	5	3-4	4
	1	Giallo H 3G	81-105	5-6	5	5	4-5	4-5	1-2	60	5	3-4	4
	1	Giallo Oro H 4R	84	5	4-5	5	4-5	4-5	4	80	3-4	3	poor
	1	Arancio HR	84	4-5	4-5	5	4	3-4	3	70	3-4	2-3	poor
	1	Scarlatta H 3G	43	5	4-5	4	4	3-4	2-3	100	4	3	poor
	1	Rosso H 3B	120	5	5	5	4-5	4-5	3	140	4	3	poor
	1	Rosso H 7B	141	4-5	5	4-5	4-5	4-5	3-4	80	4	3	poor
	1	Blu HRD	160	5-6	5	4-5	4	4-5	3-4	90	4	4	poor
	3	Blu Marino HR 150%	171	5	5	4-5	4-5	4-5	3	90	3-4	3-4	moderate
	2	Blu HGN 125%	198	5-6	4-5	4-5	4	4	3	150	4	3	poor
	1	Turchese HA	71	5	4-5	4-5	4-5	4-5	3-4	110	4-5	4	poor

Chlorinated water(20ppm)value: Ch. Light fastness ISO 105 B02 1/1SD (blue scale up to grade 8). Washing&perspiration value: staining on cotton.



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