



VAT DYES: GAMMANTHREN

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Gammacolor offers a wide range of vat dyes, available in powder or liquid form.

Gammanthren dyes are insoluble in water, that's why they need to be reduced with sodium hydrosulphite and caustic soda to allow dyeing.

As a product of the reduction a leuco vat dye is formed, while at the end of dyeing the starting dye is formed again, after oxidation (by water peroxide)

Dyeing method:

there are 4 main different application method: IK, IW, IN, IN Special.

They differ from one another for the quantity of caustic soda and hydrosulphite required, and for dyeing temperature.

Vat dyes offer the best overall fastness on cellulosic fibers.

General application method:

- Disperse vat dye into warm water (50°C) 10/20 times dye weight.
- Filter dye dispersion and add to the circulating dyebath (in which caustic soda was already added),
- Add hydrosulphite and bring to the desired temperature
- maintain for 45-60', then release dyebath.
- rinse well, then add 1ml/l of water peroxide and bring to 60°C for 10'.
- release dyebath, add a new bath with acetic acid ,until pH=7
- release and set a new bath with soap
- bring to boiling point for 5-10'; then release the bath.
- rinse well.

In the tables:

+: more; ++: much more; G: green; Y:yellow; R:red; B: blue. P:pure

IN*: Caustic soda as for IN method; hydrosulphite as for IW method. Quantity of caustic soda and hydrosulphite depends on machinery used , type of good dyed and liquor ratio.

when 3 values reported: change in shade; staining on cotton; staining on raion.

when 2 values reported: change in shade; staining on cotton.

Light fastness: 1/1;1/3;1/12

Gammanthren series	%	Name	CI	App. method/ max T	Color change after soaping	Light fastness	Washing 95°C	Sea water	Acidic/alkaline perspiration	Waterdrop: immediately/ after 4 h	Dry ironing: immediately/ after 4 h	perchlorethylene	Boiling with NaOH+tampo nante y liq.	Bleaching H2O2	Bleaching NaClO	mercerization
	1	Giallo GCN	2	IN 115° C	++G	4-5 4-5 3-4	4-5 5 5	5 5 5	4-5 4-5	4-5 5	5 5 5	5 5 5	4-5 5 5	5 5 5	5 5 5	4-5 5 5
	1	Giallo 5GF	46	IW 115° C	+G	6 5-6 4-5	4-5 5 5	4-5 5 5	5 5	5 5	4 5	5 5 5	4-5 4-5	4-5 5 5	4-5 5 5	2R 5
	1	Giallo F3GC	33	IW 98°C	+P	6-7 6-7 6	4-5 5 5	5 5 5	5 5	4-5 5	5 5	4 5 5	4-5 5	4-5 5 5	4 5 5	4-5 5 5
	1,5	Giallo 3 RT	O11	IW 98°C	+P	6-7 6-7 6	4-5 5 5	4-5 5 5	4-5 5	4-5 5	3Y 5	4-5 5 5	4-5 5 5	4-5 5 5	4-5 5 5	5 5 5
	1	Arancio oro 3G	15	IW 115° C	+P ++G	6-7 6 5	5 5 5	5 5 5	5 5	4R 5	4Y 5	4-5 5 5	4-5 5 5	4-5 5 5	5 5 5	4-5 5 5
	1	Arancio oro G	9	IN 115° C	++Y	5-6 4-5 3-4	4-5 5 5	4-5 5 5	4 4-5	4-5 5	4Y 5	4-5 5 5	4Y 5	4-5 5 5	4-5 5 5	5 5 5
	1,5	Arancio brill GR	7	IN 98°C	+P	6-7 6 5	4-5 5 5	4-5 5 5	4-5 4-5	5 5	4Y 4-5	4-5 5 5	4-5 5	4-5 5 5	5 5 5	5 5 5
	1,5	Arancio RRTS	2	IN 115° C	+P	5-6 5 4	4-5 5 5	4-5 5 5	5 5	4Y 5	3Y 5	4-5 5 5	4-5 5	4-5 5 5	4-5 5 5	4Y 5

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	2	Rosso LGG	32	IW 80°C	3-4Y	5-6 5 4	4-5 4-5 4-5	4-5 4-5 4-5	4-5 5	4-5 5	3-4Y 4-5	4-5 4-5 4-5	4 4	3-4 4-5 4-5	4 5	4Y 5
	2	Rosso FBB	10	IW 115° C	+B	7 6-7 5	5 5 5	5 5 5	4 5	4B 5	4Y 5	4-5 5 5	4-5 5	4-5 5 5	5 5	4Y 5
	2	Rosso F3B	31	IW		6-7 6 -	5 5 5			4B 5					5	
	2	Scarlatto GG	14	IN 90°C	+O +B	7 6-7 6	5 5 4-5		5 5	4-5 5	4G 4-5	5 5 5	4-5 4-5	4-5 4-5 5	4-5 4-5 5	5 5
	2	Scarlatto EFR	54	IN 90°C	+Y	6-7 6-7 6	4-5 4-5 4-5			4-5 5	4Y 5	4-5 5 5	4-5 4-5	4-5 5 5	4-5 5 5	4Y 5
	3	Bordeaux HRR	15	IN 98°C	+B +P	6-7 6 5-6	4-5 4-5 4-5	4-5 5 5	4 5	4B 5	4Y 5	3-4 4 4	4-5 5	4-5 4-5 4-5	4-5 5	3-4 4-5
	1	Rubino R 150%	13	IN 90°C	+B	6 5-6 4	5 5 5	5 5 4	4-5 5	5 5	4-5 5	4-5 5 5	4-5 5	4-5 5 5	4-5 5	5 5
	1	Rosa brill R	1	IW 98°C	++Y	6 5-6 4	4-5 5 5	4-5 5 5	4 4-5	4Y 5	4-5 5	4-5 5 5	4-5 5	4-5 5 5	4-5 5	4Y 5
	2	Rosso FGL	mix	IN 90°C	+P +G	6-7 6 5	4-5 5 4-5	4-5 5 5	5 4-5	4-5B 5	4Y 4-5	4-5 5 5	4-5 5	4-5 5 5	4-5 5	4-5Y 5
	1,5	Violetto brill RR	Viol. 1	IN 115° C +B	++R	6 5 4	4-5 4-5 4-5	4R 5 5	4-5 5	2-3R 5	3B 3B	4-5 5 5	4R 5	4-5 5 5	4-5 5	4R 5

Gammanthren series	%	Name	CI	App. method/ max T	Color change after soaping	Light fastness	Washing 95°C	Sea water	Acidic/alkaline perspiration	Waterdrop: immediately/ after 4 h	Dry ironing: immediately/ after 4 h	perchloroethylene	Boiling with NaOH+tampo nante y liq.	Bleaching H2O2	Bleaching NaClO	mercerization
	2	Violetto brill 3B	Viol. 9	IN 115° C +B	+R	6 5 4	4-5 5 5	4-R 5 5	4-5 5	3R 5	3B 3-4B	4-5 5 5	4-R 5	4-5 5 5	5 5	3R 5
	2	Violetto B	13	IW	+P +R	7 6-7 5-6	4-5 4-5 4-5			4-5 5	4R 4-5		3R 2	4-5 4-5 5	4-5 5	4R 5
	2,5	Blu scuro BOA	20	IN 115° C	++R	7-8 6-7 5	4-5 5 5	4-R 5 5	4-5 5	3-4R 5	3-4Y 3-4Y	4-5 5 5	4-5 5	4-5 5 5	4-5 5	4-5 5
	3	Blu scuro DB	mix	IN 115° C	++R	7-8 7-8 6	4-5 5 5	4-5 5 5	5 5	4R 5	3-4Y 3-4Y	4-5 5 5	4-5 5	4-5 5 5	3-4Y 5	4-5 5
	3	Blu marino TRR	22	IN 90°C +R	++R	6-7 5 4	4-5 5 5	4-5 5 5	4-5 4-5	4-5 5	3-4R 4-5	4-5 3-4 3-4	4R 5	4R 5 5	4-5 5	4-5R 5
	3	Blu Marino 1209	mix	IN		6 5 5	5 5 4-5			4R 5	3-4Y 3-4Y				4	
	3	Blu marino AR	18	IN 90°C +R	++R	6-7 4-5 3-4	5 4-5 4-5	4-5 5 5	5 5	4R 5	4R 4-5	4 4 4	4R 4	4-5 5 5	4 5	4-5R 5
	3	Blu marino G	16	IN 115° C +R	++R	7 6 5	4-5 4-5 4-5	5 5 5	5 5	4R 5	3-4R 4Y	4-5 5 5	4R 4-5	4 5 5	4-5 5	4R 5

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	1,5	Blu brill. RCL	mix	IN* 115° C	+R	7 7 6	5 5 5	5 5 5	4-5 5	3-4R 5	4Y 4Y4	4-5 5 5	4-5 5 5	4-5 5 5	4Y 5	4-5 5
	2	Blu RS	4	IN* 115° C	++R	7-8 7-8 7	4-5 5 5	5 5 5	5 5	4-5 5	4Y 4Y	4-5 5 5	4-5 5 5	4-5 5 5	2Y 5	3Y 5
	1,5	Blu HT	66	IW 115° C	+P	7-8 7 6	4-5 5 5	4-5 5 5	5 5	4-5 5	4-5 4-5	4-5 5 5	4-5 5 5	4-5 5 5	4-5 5	4-5 5
	1,5	Blu BC	6	IN* 115° C	+R	7-8 7-8 7	4-5 5 5	5 5 5	4-5 5	4-5 5	4Y 4Y	4-5 5 5	4-5 5 5	4-5 5 5	2-3Y 5	4Y 5
	1,5	Blu GC	14	IN* 115° C	++R	7-8 7-8 7	5 5 5	5 5 5	4-5 5	5 5	4Y 4Y	4-5 5 5	4-5 5 5	4-5 5 5	2Y 5	3Y 5
	1	Verde brill FFB	1	IN 115° C	+P	7-8 7 6	4-5 5 5	4-5 5 5	5 5	4Y 5	2-3B 4-5	4-5 5 5	4-5 5 4-5	4-5 4-5 4-5	4-5 5	4-5 5
	2	Verde oliva B	3	IN 115° C	++P ++G	8 7-8 7	4-5 5 5	5 5 5	5 5	4-5 5	4Y 5	4-5 5 5	4 5 5	4-5 5 5	4 5	4Y 5
	2	Kaki 2-G	Green8	IN 90°C	+G	7-8 7 6	5 5 5	4-5 5 5	4-5 4-5	4-5 5	4Y 4-5	5 5 5	4 5 5	4-5 5 5	4 5	4-5 5

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	2	Bruno R	3	IW 98°C	+R	7 6-7 6-7	5 5 5	4-5 5 5	4 4-5	4-5 5	4Y 4-5	5 5 5	4-5 5	4-5 5 5	5 5	4-5 5
	2	Bruno BR	1	IW 98°C	+Y	7 6-7 6	5 5 5	5 5 5	4-5 4-5	4-5 5	4-5 5	5 5 5	5 5	4-5 5 5	4-5 5	4-5 5
	2	Bruno GG	mix	IW 85°C	+G	7 6-7 6	4-5 5 5	4-5 5 5	4 4-5	4Y 5	4R 4-5	5 5 5	4 4-5	4-5 5 5	4-5 5	4-5 5
	2	Bruno G	mix	IW 85°C	+G	7 6-7 6	4-5 5 5	4-5 5 5	4 4-5	4Y 5	4R 4-5	5 5 5	4 4-5	4-5 5 5	4-5 5	4-5 5
	2	Bruno AL	mix	IW	+Y	7 6-7 6-7	5 5 4-5			4 5	3 5				4 4	
	2	Bruno LBG	mix	IN, IW	+Y	7 6-7 6-7	5 5 4-5			4 5	4 4-5				4-5 4-5	
	2	Oliva R	Blac k27	IW 85°C	++G	7 6-7 6	4-5 5 5	4 5 5	4 4-5	5 5	4Y 5	4-5 5 5	4Y 5	4-5 5 5	4-5 5	3-4Y 5
	2	Oliva T	Blac k25	INS 115° C	+P	8 7-8 7	4-5 5 5	4-5 5 5	5 5	5 5	4Y 5	4-5 5 5	4-5 5 5	4-5 5 5	4 5	4-5 5
	2	Oliva MW	Green1 3	IN 115° C	+B	7-8 7-8 6	4-5 5 5	5 5 5	5 5	4Y 5	3-4B 5	4-5 5 5	4-5 5 5	4-5 5 5	3Y 5	4Y 5

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	1	Grigio CL/N	mix	IW 80°C	+R	6-7 6 5-6	5 5 5	4-5 4-5 4-5	4-5 5	3 5	3-4 5	4 4-5 4-5	4-5 4-5	4-5 5 5	4-5 5	4 4-5
	1	Grigio VARB	mix	IN 99°C	+P+G	6-7 6-7 6	4-5R 4-5 4-5	4-5 4-5 4-5	4-5 5	4 4-5	4R 5	4-5 5 5	4-5 4-5	4-5 4-5 4-5	4Y 5	4Y 4-5
	2	Grigio W-N	mix	IW 98°C	+Y	7 6-7 6-7	4-5 4-5 4-5	4-5 4-5 4-5	5 5	4-5 5	4-5 5	4-5 5 5	4-5 5	4-5 5 5	4-5 5	4-5 5
	1	Grigio 5607	mix	IW		6 6 6	5 5 4-5			3-4 5	4 5				4-5 4-5	
	1	Nero RBS	Black 9	IN 115°C	+R	6 5-6 5	4-5 5 5	4-5 4-5 5	5 5	4-5 5	3-4Y 4	4 4-5 5	4-5 5	4-5 5 5	3-4R 5	4R 5
	8	Nero diretto RB	Black 9	Blacks 115°C	+R	NER O 7-8 5 5	4-5 4-5 4-5	5 5 5	4-5 4-5	5 5	4-5 5	4-5 4 4-5	4-5 4-5	4-5 4-5 5	4-5 5	4-5 4-5
	8	Nero diretto R	Mix	Blacks 115°C	++R	NER O 8	4-5 5 5	5 5 5	4-5 4-5	4-5R 5	4 4-5	4 4-5 4-5	4-5 4-5	4-5 5 5	4-5 5	4Y 4-5
	8	Nero diretto 5589	Mix	Blacks 115°C	++R	NER O 8	4-5 5 5	5 5 5	4-5 5	4-5R 5	3-4 4	4-5 5 5	4-5 5	4-5 5 5	4-5 5	4-5 5
	8	Nero BB	Green 9	Blacks 115°C	++R	NER O 8	4-5 4-5 4-5	4-5 4-5 4-5	4-5 4-5	5 5	4-5 5	4-5 4-5 4-5	4-5 3-4	4-5 4-5 4-5	4-5 5	4-5 5



GAMMACOLOR

GAMMACOLOR s.r.l.

Dyes e auxiliaries for textile industry
Via Zeuner, 5
20822 – SEVESO (MB), Italy
tel. 0362.550.550 fax 0362.551.915
P.IVA 00736390964 – Cod.Fisc. 02639210158
c.c.i.a. Milano n. 927455
Codice APP/ISS azienda 00736390964
e-mail info@gammacolorsrl.com