SurTec 66x
Control of Trivalent Blue Chromates

Make-Up

Concentration*: (summer): _____ vol% at _____ °C

(winter): _____ vol% at _____ °C

pH-Value: **1.8** (adjust with nitric acid, see back side)

Immersion time: _____ s

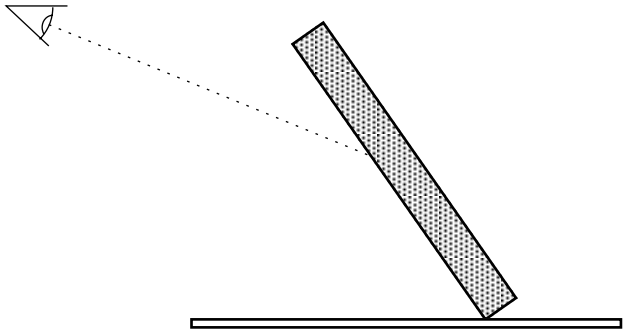
Transfer time: _____ s

* During operation the nominal value decreases by 0.5-1 vol% on 5 g/l increasing zinc. It decreases on 5 °C increasing temperature or increases on 5 °C decreasing temperature by 0.5-1 vol%.

Dosage by sight control of the parts

The iridescent colour of the chromate layer is an indication of its thickness and therefore is an excellent hint for adjusting the optimal operating conditions.

Place a part inclined on a white sheet of paper and look from an angled point of view down at the part.



Adjust the chromating bath in dependence on the colour effect according to the table.

Iridescent colour	**Cause**	**Actions**
golden	chromate layer much too thin	increase concentration **and** immersion time
reddish-golden	chromate layer too thin	increase concentration
reddish-blue	chromate layer little too thin	small increase of concentration **or** immersion time
blue	**chromating optimal**	**no actions**
greenish-blue	chromate layer little too thick	small decrease of immersion time
greenish	little overchromating	decrease of immersion time; 1. aid: pH-value may be temporarily decreased (but not beyond 1.65) while decreasing the concentration by working-out. dilute the bath, when not satisfied
greenish-yellow	heavy overchromating	dilute the bath

IMPORTANT: It is necessary to distinguish between the golden and the yellowish colour, therefore observe the parts very carefully in either case.

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pH-Adjustment of Trivalent Blue Chromates

desired pH	1,6	1,7	1,8	1,9	2	2,1	2,2
meas. pH	amount of $NaHCO_3$ in kg per 1000 l bath						
1	6,29	6,72	7,07	7,34	7,56	7,73	7,87
1,1	4,56	5,00	5,34	5,62	5,83	6,01	6,14
1,2	3,19	3,62	3,97	4,24	4,46	4,63	4,77
1,3	2,10	2,53	2,88	3,15	3,37	3,54	3,68
1,4	1,23	1,67	2,01	2,29	2,50	2,68	2,81
1,5	0,55	0,98	1,33	1,60	1,82	1,99	2,13
1,6		0,43	0,78	1,05	1,27	1,44	1,58
1,7	0,46		0,34	0,62	0,84	1,01	1,15
1,8	0,83	0,37		0,27	0,49	0,66	0,80
1,9	1,12	0,66	0,29		0,22	0,39	0,53
2	1,35	0,89	0,52	0,23		0,17	0,31
2,1	1,54	1,08	0,71	0,42	0,18		0,14
2,2	1,68	1,22	0,85	0,56	0,33	0,15	
2,3	1,80	1,34	0,97	0,68	0,45	0,26	0,12
2,4	1,89	1,43	1,06	0,77	0,54	0,35	0,21
2,5	1,97	1,50	1,14	0,84	0,61	0,43	0,28
2,6	2,02	1,56	1,19	0,90	0,67	0,49	0,34
2,7	2,07	1,61	1,24	0,95	0,72	0,53	0,39
2,8	2,11	1,64	1,28	0,99	0,75	0,57	0,42
2,9	2,14	1,67	1,31	1,01	0,78	0,60	0,45
3	2,16	1,70	1,33	1,04	0,81	0,62	0,48
3,1	2,18	1,72	1,35	1,06	0,82	0,64	0,49
3,2	2,19	1,73	1,36	1,07	0,84	0,65	0,51
3,3	2,20	1,74	1,37	1,08	0,85	0,67	0,52
3,4	2,21	1,75	1,38	1,09	0,86	0,68	0,53
3,5	2,22	1,76	1,39	1,10	0,87	0,68	0,54
3,6	2,23	1,76	1,40	1,10	0,87	0,69	0,54
3,7	2,23	1,77	1,40	1,11	0,88	0,69	0,55
3,8	2,23	1,77	1,40	1,11	0,88	0,70	0,55
3,9	2,24	1,78	1,41	1,12	0,88	0,70	0,55
4	2,24	1,78	1,41	1,12	0,89	0,70	0,56

amount of 53 % HNO_3 in kg per 1000 l bath

Because of the buffering property of dissolved zinc, the actual amounts may be higher to a small extent than given in the table above.