2. Double-salt de-acidification with Erbslöh Neoanticid

Neoanticid is a specially prepared 'chalk' (calcium carbonate) with specific reaction properties which allow the crystallizing of calcium malatartrate.
Using this method tartaric and malic acids will reduce in roughly equal parts as a so called double-salt, this provides a substantially larger scope for de-acidification than by using Kalk.
In double-salt de-acidification the tartaric acid content also limits the amount of de-acidification, but substantially more scope for de-acidification is given than by using Kalk.

A special procedure is necessary: for precipitation of the double-salt the pH value in the must/juice has to be kept above 4.5. This is achieved by mixing the calculated weight of Neoanticid with a portion of the must. The portion will in this way be de-acidified totally and, after separation of the resulting crystals, recombined with the portion which has not been de-acidified. After mixing thoroughly the calculated acid content should be reached. The procedure for treatment is described in detail below.

Erbslöh's chart should be used to determine the weight of Neo-anticid (NA) and the Partial Volume (TM), according to the initial acidity and desired final acidity:-

total titratable acid, g/L	→	8,5	9,0	9,5	10,0	10,5	11,0	11,5	12,0	12,5	13,0	13,5	14,0	14,5	15,0	15,5	16,0	16,5	17,0	17,5	18,0	18,5	19,0	19,5	20,0
10,0	TM	–	–	–	–	–	115	145	190	235	265	300	330	355	380	405	430	450	470	495	510	530	545	560	575
	NA	–	–	–	–	–	0,7	1,0	1,3	1,7	2,0	2,4	2,7	3,1	3,4	3,7	4,0	4,4	4,7	5,1	5,4	5,8	6,1	6,5	6,8
9,5	TM	–	–	–	–	110	155	200	240	275	310	340	370	395	420	445	465	485	505	525	545	560	575	590	605
	NA	–	–	–	–	0,7	1,0	1,3	1,7	2,0	2,4	2,7	3,1	3,4	3,7	4,0	4,4	4,7	5,1	5,4	5,8	6,1	6,5	6,8	7,1
9,0	TM	–	–	–	115	170	215	240	280	320	350	385	410	435	460	480	505	525	540	560	575	590	605	620	630
	NA	–	–	–	0,7	1,0	1,3	1,7	2,0	2,4	2,7	3,1	3,4	3,7	4,0	4,4	4,7	5,1	5,4	5,8	6,1	6,5	6,8	7,1	7,4
8,5	TM	–	–	120	170	220	260	300	335	370	400	425	450	475	500	520	540	555	575	590	605	620	635	650	660
	NA	–	–	0,7	1,0	1,3	1,7	2,0	2,4	2,7	3,1	3,4	3,7	4,0	4,4	4,7	5,1	5,4	5,8	6,1	6,5	6,8	7,1	7,4	7,8
8,0	TM	–	125	180	230	270	320	350	390	415	440	470	495	515	535	555	575	590	610	625	640	650	665	680	690
	NA	–	0,7	1,0	1,3	1,7	2,0	2,4	2,7	3,1	3,4	3,7	4,0	4,4	4,7	5,1	5,4	5,8	6,1	6,5	6,8	7,1	7,4	7,8	8,1
7,5	TM	135	190	240	285	325	365	400	430	460	485	510	530	555	575	590	610	625	640	655	670	680	695	705	715
	NA	0,7	1,0	1,3	1,7	2,0	2,4	2,7	3,1	3,4	3,7	4,0	4,4	4,7	5,1	5,4	5,8	6,1	6,5	6,8	7,1	7,4	7,8	8,1	8,4
7,0	TM	200	260	310	340	390	420	460	480	505	530	555	575	595	610	630	645	660	675	690	700	715	725	735	750
	NA	1,0	1,3	1,7	2,0	2,4	2,7	3,0	3,4	3,7	4,0	4,4	4,7	5,1	5,4	5,8	6,1	6,5	6,8	7,1	7,4	7,8	8,1	8,4	8,7
6,5	TM	270	315	360	400	435	470	500	525	550	575	595	615	630	650	665	680	695	710	720	730	745	755	765	775
	NA	1,3	1,7	2,0	2,4	2,7	3,0	3,4	3,7	4,0	4,4	4,7	5,1	5,4	5,8	6,1	6,5	6,8	7,1	7,4	7,8	8,1	8,4	8,7	9,1
6,0	TM	330	380	420	460	500	520	550	575	600	620	640	655	675	690	705	720	730	745	755	765	775	785	795	805
	NA	1,7	2,0	2,3	2,7	3,0	3,3	3,7	4,0	4,4	4,7	5,1	5,4	5,8	6,1	6,5	6,8	7,1	7,4	7,8	8,1	8,4	8,7	9,1	9,4
5,5	TM	400	445	480	515	545	575	595	620	640	660	680	695	710	725	740	750	765	775	785	795	805	815	820	830
	NA	2,2	2,3	2,7	3,0	3,3	3,7	4,0	4,4	4,7	5,1	5,4	5,8	6,1	6,5	6,8	7,1	7,4	7,8	8,1	8,4	8,7	9,1	9,4	9,7
5,0	TM	470	510	540	575	600	625	645	670	690	705	720	735	750	765	775	790	800	810	820	830	835	845	850	860
	NA	2,3	2,7	3,0	3,3	3,7	4,0	4,4	4,7	5,1	5,4	5,8	6,1	6,5	6,8	7,1	7,4	7,8	8,1	8,4	8,7	9,1	9,4	9,7	10,0

In order to reduce acidity by 1 g/l, 0.67 g/l of Neoanticid is needed.
TV = total volume (litres) of must to be treated.
D = desired de-acidification in g/l = initial acidity (top line of table) - desired final acidity (vertical scale on left hand side of table).
The figures in the table relate to 1000 litres of must to be treated, and kilograms of Neoanticid.

Required quantity of Neo-anticid (grams) = **NA** = approx 0.67 x TV x D (as table above).

Partial Volume (litres) of must to be treated = **TM** = approx TV x D / TA (as table above)
(plus small extra % of TV if press-lees are included).

Maximum de-acidification possible in g/l = [TA x (WA - FWA)]/[TA - WA] where:-
TA = total titratable acidity (expressed as tartaric acid) in g/l
WA = tartaric acid content in g/l (typically 40% x TA)
FWA = final tartaric acidity in g/l (has to be a minimum of 1.0 g/l).

The procedure for treatment:-

1. First it is necessary to rack off (or press out in the case of red wine) the calculated Partial Volume of clear must to be de-acidified.

With white wine it is usual to include the press-lees in the Partial Volume, in which case a small %

should be added to the calculated Partial Volume (to allow for solids that will not be recovered). Clear must is first racked into a receiving tank, leaving the Partial Volume (including press lees) in the initial tank.

2. Mix the required weight of Neoanticid to a paste with a little must and put in a third tank (or a vat), of capacity at least 1.5 times the Partial Volume to be treated.

Then the Partial Volume of must is added very slowly to the Neoanticid paste, mixing it continually. In this way the freely emergent CO_2 is driven off so that stable pH conditions (above pH 4.5) are ensured.

3. After the CO_2 release has been concluded, complete separation of crystals should be carried out as soon as possible. Usually, if left for 30 minutes the crystals will have settled out sufficiently for a considerable amount of clear must to be racked off, the remainder should then be treated with Trub-ex.

4. As there is very little acid in the de-acidified portion it will oxidise quickly, so the de-acidified portion should be added back to the non-de-acidified must immediately.

If a suitable method of separation (eg. Trub-ex) is not available, then a simplified procedure can be used: the de-acidified portion is mixed back into the non-de-acidified must without the crystals being separated. After the crystals have been deposited the relatively pure must which is left is carefully racked off. However, especially where there are extreme acid values, there is a danger of calcium tartrate back-formation.