Vitamin C Based Developers

Modified from Patrick Gainer's formulas [see **web site**]

I have no idea of the keeping properties of these developers once they are mixed up, but they are so easy to mix that there is really no excuse not to mix fresh.

Chemicals: all are available from the Photographers Formulary

Sodium Metaborate * 8H2O [a.k.a. Kodalk]
Ascorbic Acid [NOT the sodium salt!] [can get at health food stores also, NOW brand is good][Or from the **Formulary**]
1% Phenidone dissolved in alcohol [either denatured or 90+% isopropyl, KEEP AIR OUT, top off with "dust-off" to replace oxygen in air] This will keep for months if you follow this method.
Potassium Bromide

Film:

Deionized water	1 liter	500 ml	250 ml
Sodium metaborate	8 g	4 g	2 g
Ascorbic Acid	2 g	1 g	0.5 g
1% phenidone	10 ml	5ml	2.5ml

Develop using the times for D-76 [35mm Tri-X = 8 minutes @ 68F]

Paper: [~3x above, plus bromide]

Deionized water	1 liter	500 ml	250 ml
Sodium metaborate	24 g	12 g	6 g
Ascorbic Acid	6 g	3 g	1.5 g
Potassium Bromide	0.5 g	0.25 g	0.125 g
1% phenidone	32 ml	16 ml	8 ml

Develop for 3 minutes @ 68F

NOTE: You can substitute an equal weight of Sodium Carbonate [washing soda available in grocery stores] for the Sodium Metaborate ONLY in the paper developer. More energenic for deeper blacks.

Glass Plate Developer

Deionized water	1 liter	500 ml	250 ml
Sodium metaborate	6 g	3 g	1.5 g
Ascorbic Acid	1.5 g	0.75 g	0.37 g
Potassium Bromide	0.5 g	0.25 g	0.125 g
1% phenidone	15 ml	7.5 ml	3.7 ml

This developer can be used to develop the Seawater Plates or normal photographic paper for lower contrast needed when loaded into a camera. Grade 2 Arista RC Glossy paper is ISO 2 under these conditions and closely mimics the look and feel of the seawater plates (scan into a computer to reverse the negative).

Chris Patton, cpatton@stanford.edu