



## ANODAL® WT SYSTEM

The ***Anodal WT System*** is a chemical decolorizing and precipitation process that separates the metal containing dyestuffs from the aqueous solution. The clear liquid, and the precipitated dyestuffs can then be separated by sedimentation or filtration. Note that wastes containing certain heavy metals such as chromium may be regulated as hazardous wastes. Be sure to follow all applicable local, state and federal regulations when handling and disposing of wastes.

- Decolorizes most of the liquid in the dye tank.
- Precipitates heavy metals with the colorant.
- Easily filtered or separated by sedimentation.
- Leaves liquid virtually free of heavy metals when used properly.

### **PRINCIPLES OF THE PROCESS:**

The precipitating agent, *ANODAL WT-A Liquid*, is added while constantly stirring. Treatment should take place in an acid resistant vessel.

Neutralization with calcium hydroxide then serves to precipitate the metals completely in the form of hydroxides, whereby the dyes are also precipitated as sparingly soluble salts or absorbed by the hydroxide sludge. The optimum pH for the precipitation is 8.0 – 8.5; pH values below 8 and over 9 increase residual solubility appreciably. The neutralizing agent is added with constant, vigorous stirring. After neutralization, the still-dissolved dye is coagulated with *Anodal SWE liquid* and precipitated. *Anodal SWE liquid* is added with constant, vigorous stirring.

Separation is achieved by either direct filtration or by sedimentation after mixing with other effluents in the processor's own wastewater treatment plant. For de-watering of the sediment sludge, filter presses are the most suitable. Machine wire presses or centrifuges result in poorer de-watering values. With direct filtration, the neutralized mixture is pumped into the filter press in undiluted form.

### **APPLICATION DETAILS:**

1. Add correct amount of *Anodal WT-A Liquid* to dye bath and stir until uniformly distributed.
2. While stirring, neutralize\* bath with calcium hydroxide (eg. 25% solution) until pH of 8.0 – 8.5 is reached. *NOTE: This reaction is very slow and needs extended reaction time.*
3. While stirring, add *Anodal SWE liquid*. Mix well then allow to settle or filter.

\* The required amount of calcium hydroxide depends on the amount of *Anodal WT-A Liquid* used and the buffer content of the dye solution. It must be determined in a pre-trial. As a guideline use the data given in the table below and add about 1 ml of the 25% slaked lime solution for every 1 ml of *Anodal WT-A liquid* required. For dyes not in the table, the suggested addition is 0.5 g/l *Anodal WT-A* and 1.0 g/l *Anodal SWE liquid* for every g/l dye in the bath to be treated.

Dye Name	Dye bath Concentration Grams/L	ANODAL WT-A Liquid Oz/Gal	Anodal SWE Liquid Oz/Gal
Deep Black MLW	10.0	3.5	1.5
Deep Black HBL	10.0	3.5	1.5
Deep Black H3LW	10.0	3.5	0.4
Black BKA	10.0	3.5	0.8
Black GL	10.0	3.5	0.5
Grey NL Liquid	2.0	1.0	0.8
Yellow Brown 2G	1.0	0.5	1.5
Olive Brown 2R	1.0	1.0	2.5
Violet CLW	3.0	0.5	2.0
Turquoise PLW	5.0	0.75	2.5
Green LWN	1.0	0.75	2.0
Orange 3A	2.0	3.5	3.0
Bordeaux RL	5.0	0.5	1.0
Red B3LW	5.0	0.75	1.5
Fieri Red ML	5.0	0.5	1.0
Bronze G	1.0	0.5	0.5
Bronze 2LW	1.0	0.75	0.5
Fast Bronze L	1.0	5.0	1.0
Fast Gold L	2.0	10.0	3.0
Gold S	2.0	10.0	2.5

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