

# TI-1

## Technical information

### Anodising dyes

A service by:



**Electronic Things**  
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*Below you will find all relevant data for the use of our anodizing dyes.  
The data on the concentration vary greatly, because it has to be dosed depending on the desired color saturation. Be sure to do a sample coloration on valuable workpieces on a no longer needed rest of the same alloy!*

#### **General information**

The following information applies to all our offered anodising dyes. For optimal staining results, you should keep all parameters as close as possible on our recommendations. However, if the effort (especially the pH setting) is too high for you, you can also change the table values. The quality deterioration does not have to be serious - as always the individual case decides. There have also been excellent dyeings at room temperature and complete overdosage of a dye. In this respect, we advise you to experiment a little.

#### **Water quality**

Always use **deionised** (= distilled) water for the dye baths. Normal tap water usually contains high concentrations of sulfate and phosphate ions (for example from decalcification!) That can attack the dyes described herein and in extreme case destroy them.

#### **Flushing**

Because of the sulfate sensitivity of most dyes, it is necessary to thoroughly rinse the workpiece under running tap water and then in distilled water before being placed in the dye bath.

#### **Stirring the dye**

It is best to bring in the dyes by dissolving the required amount in a separate container with 80-90 degrees of hot water (usually 1 part dye to 10 parts water) and then stir this stock solution into the dye bath.

### **Storage and durability**

The powdered dye durability is virtually unlimited in usual storage. Store the color powder as dark as possible, e.g. a tight-closing box or something similar. The applied color baths can also be easily maintained for a long time, provided that the containers are suitable, so they don't emit foreign substances into the dye. Suitable are e.g. opaque plastic canisters, but also the 5-liter canisters, in which demineralized / distilled water is often offered. These must of course be stored dark. Furthermore, a cool storage (no freezing!) is conducive to the bath durability.

### **Long-term stability and preservation**

For an optimal bath life (which can reach some years!) a correct pH-value and prevention against mold, algae and bacteria is highly recommended. For information on buffering our dye baths, see the TI-6 "Buffering pH of dye baths". The preservation against microbiological infestation is best done with our conservation additive (Article No. 0192), which is extremely productive and still effective after years. Just add the appropriate amount of additive (0.2ml per liter of color bath sufficient) with thorough mixing to the finished dye bath. Of course, even already used dye baths can be subsequently protected by this method.

### **Important note about the color gold**

This dye is sensitive to light and oxygen. The dye baths must therefore be stored lightproof and well sealed. Ideally, you should fill the still warm baths in the container, since the baths absorb oxygen from the air when cooling down. Fill the container as completely as possible so that little trapped air remains. Also check the pH regularly, otherwise the dye may fall out in extreme cases.

### **Adjust the pH value**

The easiest way is to add a few drops of **pure** acetic acid (from a drugstore or pharmacy - please no acetic acid from red wine etc. ...) to the undyed bath while continuously monitoring the pH with a pH meter or indicator paper. Indicator paper should be obtained in every pharmacy. This is usually a small color scale supplied, so that the determination of the value is very easy. If the pH is too low, you can increase it by adding small amounts of NaOH (pH=0-6: bath is acidic, pH=7: bath is neutral, pH=8-14: bath is basic).

The setting is very simple with the help of our buffer additive (Item No. 0168).

More informations for pH adjustment can be found in our Technical Information TI-6 "Buffering pH of dye baths".

**Parameters**

<i>Dye</i>	<i>Concentration</i>	<i>pH value</i>	<i>Temperature</i>	<i>Duration</i>	<i>Notes</i>
Deep black	8 – 10g/l	4 – 4,8	50 – 60°C	10 – 20min	monitoring of pH value
Red	0,1 – 5g/l	5 – 6	40 – 50°C	10 – 20min	sensitive to sulfate, buffer additive recommended
Yellow	0,1 – 3g/l	5 – 6	40 – 50°C	10 – 20min	sensitive to sulfate, buffer additive recom- mended
Green	0,1 – 3g/l	5 – 6	40 – 50°C	10 – 20min	sensitive to sulfate, sensitive to hard water, buffer additive recom- mended
Blue	0,1 – 3g/l	5 – 6	40 – 50°C	10 – 20min	buffer additive recommended
Violet	0,1 – 3g/l	5 – 6	40 – 50°C	10 – 20min	buffer additive recommended
Orange	0,1 – 3g/l	5 – 6	40 – 50°C	10 – 20min	buffer additive recommended
Gold	8 – 10 g/l	4,5	30 – 50°C	30s – 15min	sensitive to light, sensitive to oxygen, monitoring of pH value, <b>no</b> buffer additive!
Turquoise	0,1 – 5 g/l	5,5	55 – 60°C	10 – 20min	buffer additive <b>required!</b>
Branding red	0,05 – 5g/l	5,5	25 – 60°C	10 – 30min	buffer additive recommended
Bronze	0,1 – 3g/l	5,5	25 – 60°C	10 – 30min	buffer additive recommended
Olive brown	0,05 – 1g/l	5 – 6	50 – 60°C	10 – 30min	buffer additive recommended
Grey	0,1 – 5g/l	5,4 – 5,8	20 – 60°C	10 – 40min	buffer additive <b>required!</b>
Brown	0,05 – 3g/l	5,4 – 5,8	40 – 50°C	15min	buffer additive recommended
Wine red	0,05 – 5g/l	5,4 – 5,8	40 – 50°C	15min	buffer additive recommended
Genuine bronze	0,05 – 3g/l	5,5	25 – 60°C	10 – 30min	buffer additive recommended
Copper	0,5g/l	5,5	40°C	20min	buffer additive recommended

<i>Dye</i>	<i>Concentration</i>	<i>pH value</i>	<i>Temperature</i>	<i>Duration</i>	<i>Notes</i>
Chrome yellow	1 – 5g/l	5 – 6	55 – 60°C	2 – 5min	buffer additive recommended
Haematite black	1 – 5g/l	5 – 6	55 – 60°C	2 – 5min	buffer additive recommended
Blue violet	2 – 5g/l	5 – 6	55 – 65°C	10 – 20min	buffer additive recommended
Pink	0,5 – 5g/l	5,5 – 6	60 – 65°C	2 – 20min	buffer additive recommended

If you have further questions (even if they seem to be simple) please do not hesitate to contact us. Everyone starts as a beginner and experience has shown that there are questions whose answer is nowhere to be found. Should we, for once, not be reachable by telephone, so please leave your name and telephone number on our answering machine. We will call you back as soon as possible.

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