

# Lecture-15

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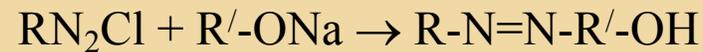
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# Azoic Dye & it's Properties

## What is Azoic Dye?

The dyes which contain insoluble azo group (-N=N-) are known as azoic dyes. These dyes are not found in readymade form.

They are produced through a process which creates the colored material directly on the fabric by a reaction between two compounds namely, di-azo compound or diazole base and coupling compound i.e. Naphthol..



Azoic dye

Azoic dye is one type of ingrain dye i.e. it is produced during dyeing process inside the fiber. The formation of an insoluble azoic pigment was first patented by Thomas and Robert Holliday in 1880

# Azoic Dye & it's Properties (continued)

## Different Names of Azoic Dyes

### Naphthol Color:

To make the fabric colored the fabric is first impregnated with aryl amide or sodium salt of  $\beta$ -naphthol to make substantive towards cellulose. As the first coupling compound is naphthol, it is called naphthol color.

### Ice Color:

For the diazotization reaction very low temperature is required ( $0^{\circ}$ - $5^{\circ}$ C) which is normally created by ice water. So, it is called ice color.

### Pigment Color:

Here two components which react together to form azoic color, i.e. a base and naphthol are both soluble in water, but the resultant color are insoluble in water. That is to say azoic color containing azo group, is insoluble in water. So it is called azoic pigment.

# Azoic Dye & it's Properties (continued)

## Different Names of Azoic Dyes (Continued)

### Magic Color:

Azoic colors are called magic color due to their versatility. Different colors are obtained by combining different bases with same naphthol within very short time. Again different colors can also be obtained by combining different naphthol with same base. So, they are called magic color.

### Fast Color:

As the azoic colors are insoluble in water, they have good wash fastness. So, azoic colors are called fast color.

### Developed Color:

As the dye is formed inside the fiber during dyeing process by chemical reaction it is called developed dye/color.

# Azoic Dye & it's Properties (continued)

## Properties of Azoic Dyes

- ❖ Cellulose specially cotton, flax (linen), rayon, jute, hemp, and silk, nylon, polyester, acetate fibers are dyed and printed with azoic dyes.
- ❖ Color is formed from water soluble components but produced color is water insoluble.
- ❖ Azoic colors have excellent light fastness with rating 6-7.
- ❖ Azoic dyed and printed materials have very good wash fastness as it is insoluble in water. The rating is 4-5.
- ❖ Azoic dyes are characterized by their very bright red and orange colors. Though various shades can be produced by them.
- ❖ Azoic dyed and printed materials have poor rub-fastness. This occurs due to the formation of insoluble azoic dye on fiber or fabric surface which is not removed during final stage of dyeing or printing.
- ❖ In case of viscose and cotton azoic dyes may cause delustrated effect named blinding effect.

