29.27 - Diazo-, azo- or azoxy-compounds.

These compounds, the most important of which belong to the aromatic series, are characterised by two nitrogen atoms linked by a double bond.

(A) DIAZO-COMPOUNDS

This group of products includes :

(1) **Diazonium salts**. These are products of general formula $RN_2^+X^-$ where R is an organic radical and X^- is an anion, for example :

(a) **Benzenediazonium chloride**.

(b) **Benzenediazonium tetrafluoroborate**.

This heading covers diazonium salts, whether or not stabilised.

This heading also covers diazonium salts diluted to standard strengths (e.g., by the addition of a neutral salt such as sodium sulphate) for the production of azo dyes.

(2) Compounds of general formula RN_2 where R is an organic radical, for example :

(a) **Diazomethane**.

(b) **Ethyl diazoacetate**.

(3) Compounds of general formula $R^1 – N = N – N \begin{matrix} R^2 \\ R^3 \end{matrix}$ where R^1 and R^2 are organic radicals and R^3 is either an organic radical or hydrogen, for example :

(a) **Diazoaminobenzene**.

(b) *N*-**Methyldiazoaminobenzene**.

(c) **3,3-Diphenyl-1-*p*-tolyltriazene**.

(Here $R^1 = R^2$)

(B) AZO-COMPOUNDS

These are compounds containing the group $R^1 – N = N - R^2$, where R^1 and R^2 are organic radicals with one of their carbon atoms linked directly to one of the nitrogen atoms, for example:

(1) **Azobenzene**.

(2) **Azotoluenes**.

(3) **Azonaphthalenes**.

(4) **2,2'-Dimethyl-2,2'-azodipropionitrile**.

(Here $R^1 = R^2$)

(5) **Aminoazobenzenesulphonic acids**.

(6) *p*-**Aminoazobenzene**.

The radicals R^1 and R^2 may themselves contain further –N=N– groups (bisazo-, trisazo-, etc., compounds).

(C) **AZOXY-COMPOUNDS**

These are compounds of the general formula $R^1–N_2 O–R^2$ in which an oxygen atom is linked to one of the two nitrogen atoms and where R^1 and R^2 are generally aryl radicals.

Azoxy-compounds are generally pale yellow crystalline substances. They include :

(1) **Azoxybenzene**.

(2) **Azoxytoluene**.

(3) *p*-**Azoxyanisole**.

(4) *p*-**Azoxyphenetole**.

(5) **Azoxybenzoic acid**.

(6) **Azoxycinnamic acid**.

(7) **Azoxytoluidine**.

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Diazo- and azo-compounds are the starting point in the formation of azo dyes. They give substitution derivatives which are also included here.

Organic colouring matters are **excluded** from this heading and are classified in **Chapter 32**.