



## **IS 2558: 2024 'Ponceau 4R, food grade - Specification (Third Revision)'**

Ponceau 4R, food grade, is a **synthetic red azo dye** commonly used as a **food colorant**. It is specifically designated for use in foods, cosmetics, and pharmaceuticals, where it is identified as safe under certain regulated limits. Chemically, Ponceau 4R is the trisodium salt of 1-(4-sulpho-1-naphthylazo)-2-naphthol-6,8-disulphonic acid, with a molecular formula of  $C_{20}H_{11}N_2Na_3O_{10}S_3$  and a molecular weight of 604.5.

Ponceau 4R, food grade, should **have high dye** content for vibrant and consistent colouring. Safety is paramount, so **metallic contaminants** in dye must remain within strict limits. The product should have high purity having **low levels of impurities**, such as water-insoluble matter and combined ether extracts. Release/production of harmful by-products, including dye intermediates and primary aromatic amines, should be minimized to avoid health risks. Additionally, proper labelling and packaging enhances consumer reliability in the dye for food grade application.

Indian Standard, IS 2558:2024, prescribes physico-chemical and microbiological requirements for ensuring quality and safety of Ponceau 4R, food grade. This standard specifies **minimum dye content** of 85% for the purpose of vibrant and consistent colouring. The standard specifies **safety limit** of lead as 2.0 ppm, arsenic as 3.0 ppm, mercury as 1.0 ppm, cadmium as 1.0 ppm, chromium as 50.0 ppm and copper as 30.0 ppm. The standard tends to control impurities in dye by controlling **water-insoluble matter** and **combined ether extracts ( $\leq 0.2\%$  each)**, thereby ensuring product safety. Limits of **dye intermediates** and **unsulphonated primary aromatic amines**, have also been specified in the standard. **Clear labelling requirements**, including dye name, chemical structure, batch details, and quantity enhance transparency, and durable packaging requirements protect product stability, aligning with consumer health and quality expectations.