

Furfural Derivatives Industry: Global Furfural Derivatives Market Poised For Robust Growth

Furfural Derivatives Industry and Its Wide Range of Applications

Furfural is an organic compound derived from agricultural byproducts such as oat hulls, corncobs, and sugarcane bagasse. It is produced by acid-catalyzed hydrolysis of pentosan-rich biomass followed by distillation. The global production of furfural reached over 650 kilotons in 2020, and it is estimated to grow further given the rising demand from various end-use industries. Furfural derivatives have a wide range of applications in plastics, coatings, fuel additives, and more.

Furfuryl Alcohol: A Versatile Chemical Building Block

[Furfural Derivatives](#) alcohol

is one of the most important and high-volume furfural derivatives. It is produced by the hydrogenation of furfural over a catalyst. Furfuryl alcohol finds applications as a resin, foundry binder, lubricant, and chemical intermediate. It is used to manufacture thermoset resins, which in turn are utilized to produce precision investment casting molds, chemically bonded sand molds, and other industrial applications including civil engineering structures. Increasing manufacturing activity across industries is expected to support the demand for furfuryl alcohol in the coming years.

Furandicarboxylic Acid (FDCA): Bio-Based Alternative to Terephthalic Acid

FDCA is emerging as a sustainable bio-based alternative to terephthalic acid, a petroleum-derived chemical used in manufacturing polyesters like polyethylene terephthalate (PET). It is produced through the oxidation of furfural. FDCA can be polymerized with ethylene glycol to make bio-PET resins, which have properties similar to conventional PET but are completely compostable. Leading plastic manufacturers are collaborating to develop cost-effective large-scale technologies for producing FDCA-based plastics. This is likely to provide a major push to the furfural derivatives market.

Other Major Derivatives and their End-Uses

Furan, another important derivative of furfural, is used in production of tetrahydrofuran, which acts as a solvent for polyesters and cellulose derivatives. Methyltetrahydrofuran (MTHF) produced from furan and furfural mixed with bio-methanol is becoming an attractive gasoline blending component. Furoic acid manufactured through oxidation of furfural is used to produce pharmaceuticals, perfumes, pesticides and dyes. Furfurylamine prepared from the reductive amination of furfural serves as a curing agent in epoxy resins and possesses fungicidal properties. Furfurylidenes such as FDME are suitable compatibilizers and monomers while furfuryl esters have applications as plasticizers, lubricants and insecticides.

