



## Mah maleic anhydride

Anidride male [1] Names IUPAC name Furan-2.5-dione[2] Other names Maleic Anidride [2] cis-Butenedioic anhydride 2.5-Furanedione Anidride [2] cis-Butenedioic anhydride 2.5-Furanedione Anidride [2] cis-Butenedioic anhydride 2.5-Furanedione Anidride [2] cis-Butenedioic anhydride NIOWA (US health exposure limits): PEL (permissible) Anidride Succinica Anidride The related compounds Male acid Except where otherwise indicated, the data is given for the materials in their standard state (at 25 °C [77 °F], 100 kPa). N verify (what is YN?) Infobox references composed chemical male dioxide is an organic compound with the formula C2H2(CO)2O. It's the acid of maleic acid. It is a solid colorless or white with an acrylic smell. It is manufactured industrially on a large scale for applications in coatings and polymers. [5] The produced by vapor-phase oxidation of n-butane. The overall process converts methyl groups into carboxylate and dishydrates the spine. The selectivity of the process reflects the robustness of male dioxide, with its combined double-bonded system. Traditionally, male dioxide was produced by the oxidation of benzene and butane are fed into a hot air flow, and the mixture is passed through a high temperature catalyst bed. The ratio between air and hydrocarbons is controlled to prevent the mixture from turning on. Vanadium phosphate is used for the butane route:[5] C4H10 + 3.5 O2 «C4H2O3 + 4 H2O «H = «1236 k]/mol The main competitor process involves the complete combustion of butane, a conversion that is doublely esothermic than the oxidation part. The traditional method used by benzene has become uneconomic due to high prices and constantly increasing benzene and complete combustion of butane, a conversion that is doublely esothermic than the oxidation part. the production of male dioxide (4 atoms of C) a third of the original carbon atoms is lost in the form of carbon molecule and binds only oxygen and removes water; the 4-C-base body of the molecule remains intact. Overall, the most recent method is therefore more efficient from the point of view of materials[6]. There are parallels with the production of phthallic dioxide: While older methods use o-xilene as raw material. Reactions The chemistry of male dioxide is very rich, reflecting its ready availability and bifunctional reactivity. Hydrolyze, producing maleic acid, cs-HOOC-CH=CH-COOH. With the alcohols, the emistry is generated, for example, cis-HOOCâCH=CHâ;COOCH3. Maleiac Aoxide is a classic substrate for Diels-Alder reactions.[7] In 1928, it was used for the reaction of male dioxide and 1,3-butadiene, for which Otto Paul Hermann Diels and Kurt Alder received the Nobel Prize in 1950. It is through this reaction that male dioxide converts into many pesticides and drugs. Michael's reaction of male dioxide with active compounds of methylene or methin, such as malonate or acetoacetate esters, in the presence of sodium acetate catalyst. and isocytric acids.[8] Maleaic dioxide is spread by photochemical reaction to form tetracarboxylic (CBTA) cyclobutane. This compound is used in the production of polyimmides and as an alignment film for liquid crystal display.[9] It is also a low-efficiency metal complex binder, such as Pt (PPh3) 2 (MA) and Fe (CO) 4 (MA). Due to its 4 electrons cycle in a series of 5 atoms with p orbital, the male dioxide has long been considered antiaromatic. However, a thermochemical study concluded that only 8 kJ/mol of destabilization energy can be attributed to this effect, making it weakly antiaromatic[10]. Uses Maleiac Dioxide is used in many applications.[5] Plastics & resins About 50% of the worldwide production of male dioxide is used in the production of insatura polyester resins (UPR). Tried glass fibres are added to UPR produce fiberglass reinforced plastics that are used in a wide range of applications such as pleasure boats, sanitary ware, cars, tanks and pipes. Maleic dioxide is hydrogenated in 1.4-butandyl (BDO), used in the production of thermoplastic thermoplastics Fibre elastan / spandex, polybutilene tereftalate resins (PBT) and many other products. Malathion curative agents is a popular insecticide that derives from male dioxide. Structure of sodium sulphonated esters, common class of surfactants derived from male dioxide. male dioxide, are widely used in carpentry. The reaction of alerdo-diels of masydride and butadiene and isoprene gives the respective tetrahydrophyalic dioxide. These species are used as polymerization agents in epoxy resins. Another market for male dioxide is oil additives lubricant, which are used in petrol and diesel engine carter oils as dispersers and corrosion inhibitors. The variations in the lubrication specifications and the most efficient engines have had a negative effect on the demand for oil lubrication additives, giving flat growth prospects for the male dioxide in this application. Others a smaller number of applications for male dioxide. The food industry uses malic acid which is derived from maleic adihydride in artificial sweeteners and floor enamels. Maleaic anhydride is also a precursor of compounds used for water treatment detergents, insecticides and fungicides, pharmaceutical products and other copolymers. Main company manufacturers Location Capacity (KMT/year) Yongsan Chemicals, Inc. South Korea 38 Bartek Ingredients Inc. Canada 28 Sasol-Huntsman Germany 105 DSM NV Netherlands 100 Ineos USA 50 Huntsman Corporation USA 155 Huntsman Performance Products USA 100 Lanxess Corporation USA 75 Lanxess Corporation USA LONZA GROUP AG Switzerland 100 Ashland LLC USA 55 Mitsubishi Chimica Polyuretano, Inc. Japan 30 Mitsui Chimica Source: Kirk & Othmer Solid State Chemicals, Ltd. began the production of solid male dioxide pastilles in the United States in 2014. World Maleric Anidride Capacity per region Data in: Kilotonnes per Annum Region 2002 2012 2015 (KMT / year) North America 44 41 46 Western Europe 168 456 307 Central and Eastern Europe 64 58 60 ASIA 315 483 1864 Africa 10 10 14 Total 836 1359 2771 Source: Kirk & Othmer [fLL Required Quote] Packaging and transport Liquid male dioxide is available in oil tanks and/or tank containers made of stainless steel, which are isolated and equipped with heating systems to maintain temperature of A° C. Tank cars must be approved for the transport of molten anhydride masydride. Liquid / molten male anhydride is a hazardous material in accordance with RID / ADR. Pellets of solid anhydride are transported by trucks. The packaging is generally in polyethylene bags of 25 kg. Effects on human health and the This compound poses relatively low environmental risks, an important feature for some applications. In humans, exposure to maleic anhydride can cause irritation to the respiratory tract, eves, exposed mucosa and skin. Maleic anhydride is a low-risk chemical. Maleic anhydride is a low-risk chemical. Maleic anhydride is a low-risk chemical exposure to maleic anhydride is a low-risk chemical. itself are unlikely. Maleic acid is aerobically biodegradable in sewage sludge, as well as in soil and water. Dietary starch for use in night markets sold by a supplier was investigated for the 300 tonnes of contaminated starch; an earlier inspection in November had found 32 tonnes. 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