+357 96 030922
info@marketpublishers.com

China Dimer Acid Market Assessment, By Product Type [Standard, Distilled, Hydrogenated, Others], By Application [Resin Synthesis, Lubricants, Fuel Oil Additives, Oilfield Chemicals, Coatings, Others], By End-user [Personal Care Products, Inks, Oilfield, Automotive, Marine, Construction, Others], By Region, Opportunities and Forecast, 2016-2030F

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Abstracts

China dimer acid market size was valued at USD 1.1 billion in 2022, expected to reach USD 1.7 billion in 2030, with a CAGR of 5.8% for the forecast period between 2023 and 2030. Dimer acids are mainly produced from tall oil fatty acids (TOFA) and vegetable oil fatty acids (VOFA) in soybean and rapeseed oils. The market expansion of dimer acids can be recognized due to the rising demand for the ink and coating industry across China. Vegetable-based raw materials for dimer acid alkyd resin can be used for paint coating as a significant driver for expanding the dimer acids market in China.

Novel dimer acid-based waterborne polyurethanes (DWPUs) and various compositions of dimer acid-based polyester polyol can be an effective formulation for water and oil-resistant coating in paper substrate. The paper coated with DWPUs solution can experience excellent mechanical properties and thermal stability. Paper-derived products can replace conventional disposable plastic products due to their superior characteristics such as biodegradability, low weight, mechanical flexibility, etc. These paper-derived products can create market opportunities for dimer acid, which exceptionally improve the packaging system in different sectors.

Hot-Melt Adhesives using Dimer Acids

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Hot-melt polyamides are synthesized from dimer fatty acids and diamines with high adhesive and bonding strength and better temperature resistance. In addition to prominent properties, hot-melt adhesives are soluble in general organic solvents and represent excellent flexible property. The extensive usage of hot-melt adhesive can be found in shoes, garments, leather, and electric product seals. Moreover, polyamides with higher purity of dimer acids reflect more improving properties such as increased adhesion performance and excellent mechanical resistance. Addition of nylon-6 in the hot melt adhesive led to re-orientation of melted adhesive molecules around nylon-6 which subsequently increases crystallinity and ultimately the adhesive strength.

Hot-melt adhesive type materials are extensively used in the footwear industry, which is considered a huge market potential and the demand for footwear can revolutionize the China dimer acid market. The low temperature hot-melt adhesive can arbitrarily modify according to the requirement of shoe design chopper and best fit for the shoe cover material. The residual hot melt adhesive film can be recycled effectively and eradicate the chances of pollution. In addition to footwear industry, hot-melt adhesive can be suitable for connectors, sensors, and various assembly lines. All these applications lead to China dimer acid market to grow during the forecast period.

Dimer Acids as a Base Oil for Bio-lubricant

Conventional bio-based oils generally crystallize at a low temperature (below the cloud point) where the formulation is derived from palm, peanut, rapeseed oils, etc. Chemical modification of fatty acids can resolve the problem of temperature which ultimately improves cold temperature performance. The crystallization of such bio-based oils can be minimized by forming chain branching of dimer acids which reduces the melting temperatures by disordering the configuration of molecules. The synthesized C36-dimer acids (DA) on esterification with 2-ethylhexanol produces a new type of C52-DA 2-EH esters which significantly has physiochemical, cold flow, and oxidation stability characteristics that have potential application in various bio-lubricant formulations.

Oligomerization of oleic acid led to the synthesis of a dimer or higher-order oligomer which on further esterification produces lube base oil. Prepared lube base oil using this process, comprises of an x-type diester dimer which possess excellent low-temperature stability and is highly biodegradable. Raising concerns towards environmental sustainability, depleting petroleum wells, and strict government regulations led to the development of bio-lubricant for various industrial applications. Summing all those important parameters, the application of dimer acids can be explored as significant market opportunities in China for dimer acids is growing rapidly.

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Impact of COVID-19

The COVID-19 pandemic has severely impacted various sectors in China including industrial production of chemicals. Consequently, these impacts were due to decline of supply and demand shortage of capital and like parameters. The initiation of COVID-19 virus from China and its impact on the people led to devastation of Chinese economy in various chemical manufacturing units. The significant measure adopted by Chinese government to shift the negative change into the progressive one, emphasized the manufacturing industries to incorporate dimer acids in different sectors. The increasing demand in footwear, cosmetics, and lubricant sectors regulated the usage of dimer acids which progressively increases and create huge market potential in China.

Impact of Russia-Ukraine War

The outrageous aggression of Russia on Ukraine is impacting China and its industries. The imposed sanctions on Russia to restrict its trade with China has lowered the application of dimer acids. Dimer acids are prominently used in producing oilfield chemicals for oil and gas extraction and refining activities. The annexation has reduced the oil and gas trade between Russia and China, significantly affecting the usage of dimer acids and its market growth. But China being a soft power, has put relaxation on imposed sanctions, gradually establishing the oil and gas trade between the two countries. The continuous efforts by China to restore the production of dimer acids can create immense opportunities in the dimer acid market by making its usage in daily basis products.

Key Players Landscape and Outlook

Chemical companies are deriving their technologies to produce effective dimer acids that can possess multi-functional characteristics and can be used extensively in different applications. Shandong Huijin Chemical Co. Ltd. produces dimer acids by reducing the trace elements using advanced separation technology which is suitable for high-grade epoxy curing agent and polyamide resin. The physiochemical properties of dimer acid got restored by increasing the dimer content from 80% to 95%. Their high purity produced dimer acid with even molecular weight distribution can be substantially used to form high-grade polyamide resin, hot-melt adhesive, oil field corrosion inhibitor, surfactant and various other applications. Such excellent opportunities in different sectors can create immense potential for dimer acid market in China.

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