



KERONE
Kerone Engineering Solutions Limited



48 Year
Of experience

HOT MELT ADHESIVE MIXING PLANT



ELECTRO MAGNETIC innovative technologic

In Association with SVCH-Technologii, Moscow (Russia)

ISO 9001:2015 | ISO 14001:2015 | EMS 14001 | OHSAS 18001:2007



ABOUT KERONE

- ◆ KERONE is now renowned for serving the specialized needs of customers with the best quality and economical process of Heating /cooling and drying products, manufactured in a high-quality environment by a trained and qualified workforce (special purpose machinery)
- ◆ KERONE is a pioneer in application and implementation engineering with its vast experience and team of professionals.
- ◆ KERONE is devoted to serve the industry to optimize its operations both economically and environmentally with its specialized heating and drying solutions.
- ◆ KERONE has reported annual revenue of \$18 to \$20 Million , increasing year-on-year.
- ◆ KERONE is possessing employee strength of more than 280+ experts continuously putting efforts for happy industrial engineering solutions
- ◆ KERONE is having immense expertise in manufacturing and implementing various types of engineering solutions.
- ◆ KERONE is possessing experience of 48+ years in engineering excellence.



**48 Years
Manufacturing Excellence**



**Great Sale
Support**



Enhance the value of customer operation through our customer need centric engineering solution. ”

MISSION

- To enhance the value of customer operation through our customer need centric engineering solution
- We are committed to provide our customers, unique and best in class products in Industrial heating drying and cooling segment with strategic tie-up for the technical know-how with renowned leader in the industry specific segment

VISION

- Turn into a world leader in providing specialized, top-notch quality and ecological industrial heating, cooling, and drying solutions across the globe.
- To attain global recognition as the best of quality and environment-friendly engineering solution company.



VALUE PROPOSITION



Highly
Customized Product



Sound
Infrastructure



Adherence to
Standards



Team of experts
Delivering Quality



Cost Effective
Solutions



Timely
Delivery



Introduction

- ◆ Hot glue, also known as hot melt adhesive, is a multipurpose and commonly used bonding solution that has found use in a wide range of industries and applications. This glue is made of a thermoplastic substance that is solid at ambient temperature but melts upon heating and becomes very sticky.
- ◆ Hot glue guns are frequently used to apply it because they melt the solid adhesive, making it easy to spread across a variety of substrates. Hot melt glue has many benefits, including quick bonding, powerful adherence to a variety of materials, and the lack of solvents or water, making it an environmentally benign option.
- ◆ Its versatility demonstrates its crucial role in streamlining and improving everything from arts and crafts to industrial manufacturing, packaging, and even medicinal applications.





Importance of Mixing in Hot Melt Adhesive Production

- ❖ Hot melt glue manufacture must include a crucial stage called mixing since it is essential to the final product's quality, consistency, and functionality. Due to the widespread usage of hot melt adhesives in many different sectors, including packaging, automotive, textiles, and electronics, precise mixing is crucial to the application of these materials.
- ❖ In order to achieve homogeneity in hot melt adhesive compositions, mixing is first and primarily necessary. These adhesives are made of several different components, each having distinct qualities and properties, including polymers, resins, additives, and fillers. These elements are evenly dispersed throughout the adhesive matrix thanks to proper mixing. Because any changes in composition might result in inconsistent adhesive performance, including bonding strength, tackiness, and temperature resistance, this homogeneity is essential.





- ◆ Controlling the adhesive's viscosity and rheological characteristics requires effective mixing. Hot melt adhesives' viscosity has an impact on how easily they apply, how well they adhere, and how they flow. Manufacturers can adjust the adhesive's viscosity by careful mixing to fit the needs of each application, including spray coating, extrusion, or roller coating. Additionally, the glue flows easily and uniformly upon application thanks to consistent rheological qualities, ensuring optimum coverage and adhesive strength.
- ◆ Certain additives or curing agents in hot melt adhesives must be mixed in order to activate them. For some adhesives to initiate chemical cross-linking or curing processes, careful blending is necessary. This could improve the adhesive's overall performance, durability, and heat resistance. Without adequate mixing, these additives might not be distributed equally, which would leave some regions of the glue without the desired qualities.





Importance of Efficient Mixing

- ◆ Efficient mixing ensures that all ingredients are thoroughly blended, resulting in a homogeneous product with consistent characteristics. This uniformity is crucial to maintaining product quality, ensuring that every batch meets the desired specifications. Proper mixing prevents issues such as ingredient separation, clumping, or uneven distribution, which can adversely affect the product's taste, texture, appearance, and overall performance.
- ◆ Efficient mixing maximizes ingredient utilization and minimizes waste. Through proper blending, each ingredient is evenly dispersed and fully incorporated into the product, ensuring that no portion is left unutilized or concentrated in specific areas. This not only enhances cost-effectiveness but also promotes sustainability by reducing material wastage.
- ◆ Efficient mixing reduces production time and improves overall process efficiency. Properly mixed ingredients require less time for subsequent processing steps, such as heating, cooling, or further treatment. Additionally, well-blended ingredients facilitate smoother operations, reducing the risk of equipment clogging or downtime caused by inconsistent product flow.
- ◆ Effective mixing contributes to energy efficiency in manufacturing. When ingredients are thoroughly blended, the required energy input for subsequent processing steps, such as heating or cooling, can be minimized. Uniform mixing promotes faster and more effective heat transfer, reducing energy consumption and associated costs.
- ◆ Efficient mixing ensures product consistency and stability over time. Uniform blending helps to maintain a consistent formulation, preventing variations in taste, texture, or performance between batches. Additionally, proper mixing can enhance the stability of certain formulations by preventing ingredient separation, sedimentation, or chemical reactions that may compromise the product's quality or shelf life.
- ◆ In industries like pharmaceuticals and food production, strict regulatory standards must be met. Efficient mixing plays a crucial role in achieving compliance with these standards. Properly blended ingredients help ensure that products meet regulatory requirements, such as accurate dosage levels, uniform distribution of active ingredients, and hygienic manufacturing practices.
- ◆ Efficient mixing directly impacts customer satisfaction. Consistently high-quality products, free from issues such as inconsistent taste, texture, or ingredient separation, contribute to positive consumer experiences. Meeting or exceeding customer expectations fosters brand loyalty and strengthens market competitiveness.



Construction

◆ Facility Design and Layout

Designing the layout of the facility is the first step in constructing a hot melt adhesive manufacturing facility. This involves figuring out the size of the plant, how the equipment is set up, and how materials move about the building. In this stage, elements like safety, effectiveness, and scalability are essential.

◆ Raw Material Sourcing

Polymers, resins, and additives are frequently combined to create hot melt adhesives. To guarantee constant product quality, reputable sources for these raw materials must be established. To keep an eye on the materials as they enter the manufacturing facility, quality control procedures are put in place.

◆ Manufacturing Equipment

Hot melt glue manufacture calls highly specialized machinery. This covers cooling systems, extruders, mixers, and reactors. The equipment choice is based on the needed production capacity and unique formulation.

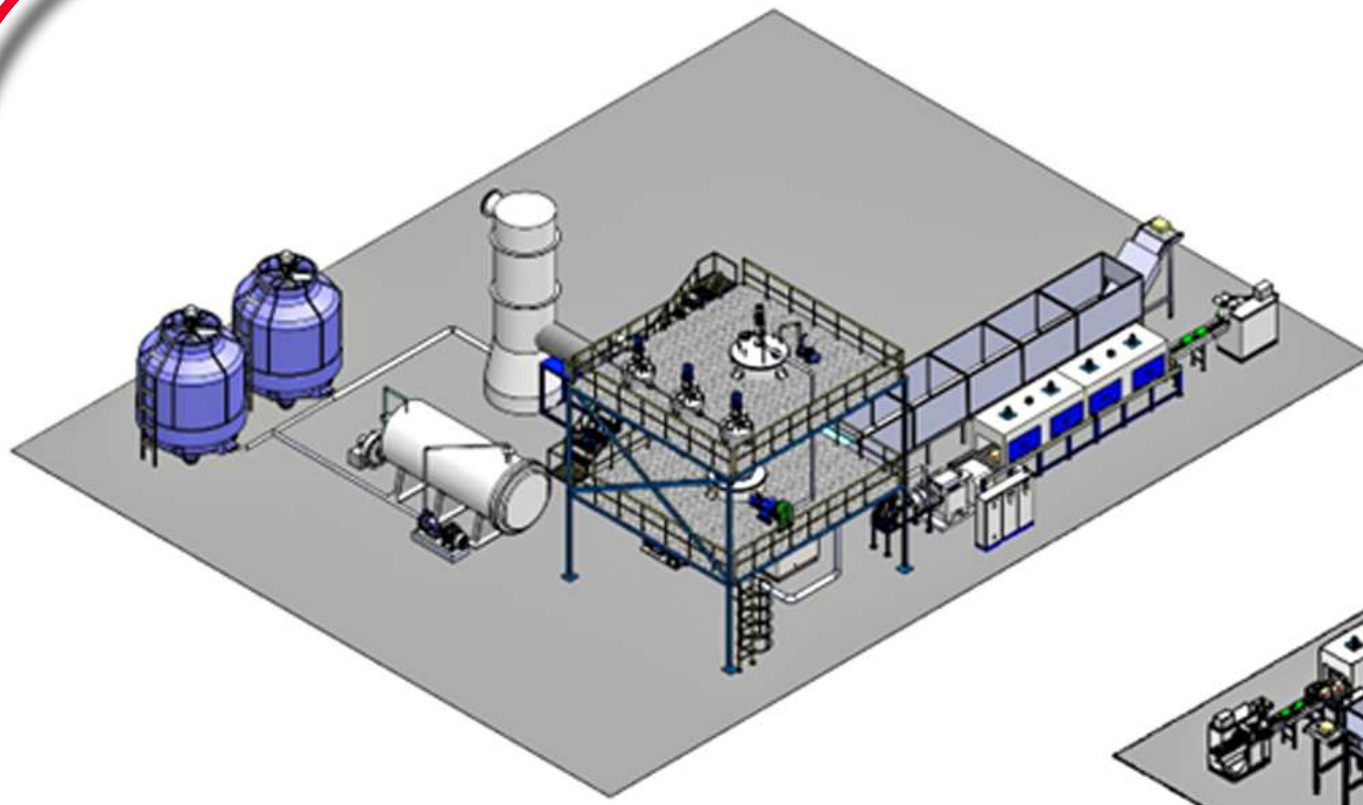
◆ Formulation Development

A crucial part of production is the hot melt adhesives' composition. Engineers and chemists collaborate to develop adhesive formulations that satisfy the required performance standards, including temperature resistance, curing time, and bonding strength. The production of these formulations is then scaled up.

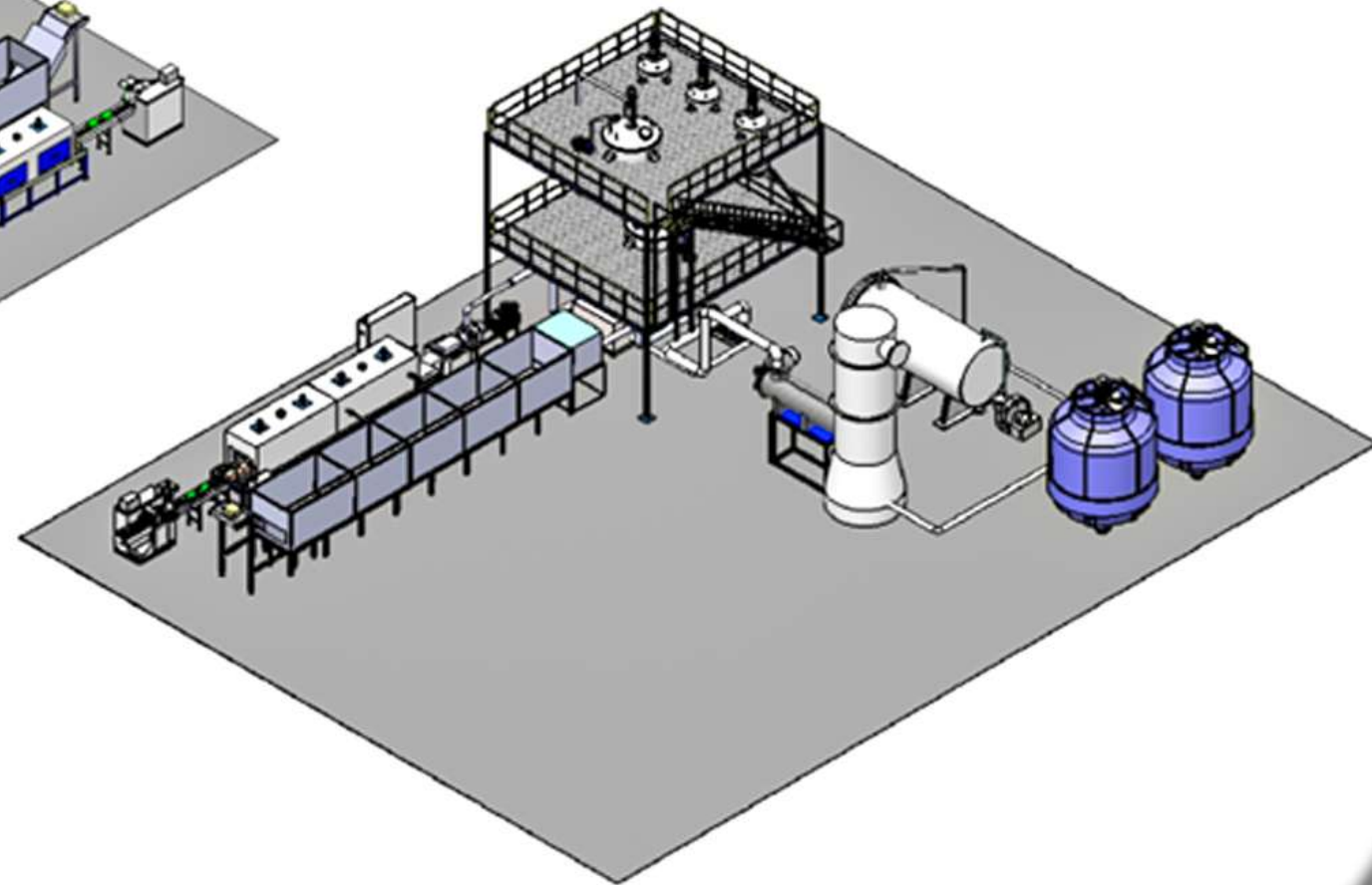
◆ Processing and Mixing

In the manufacturing apparatus, the raw components are combined and heated while being blended to create a homogenous adhesive melt. In order to preserve product uniformity, precise temperature and pressure controls are essential.

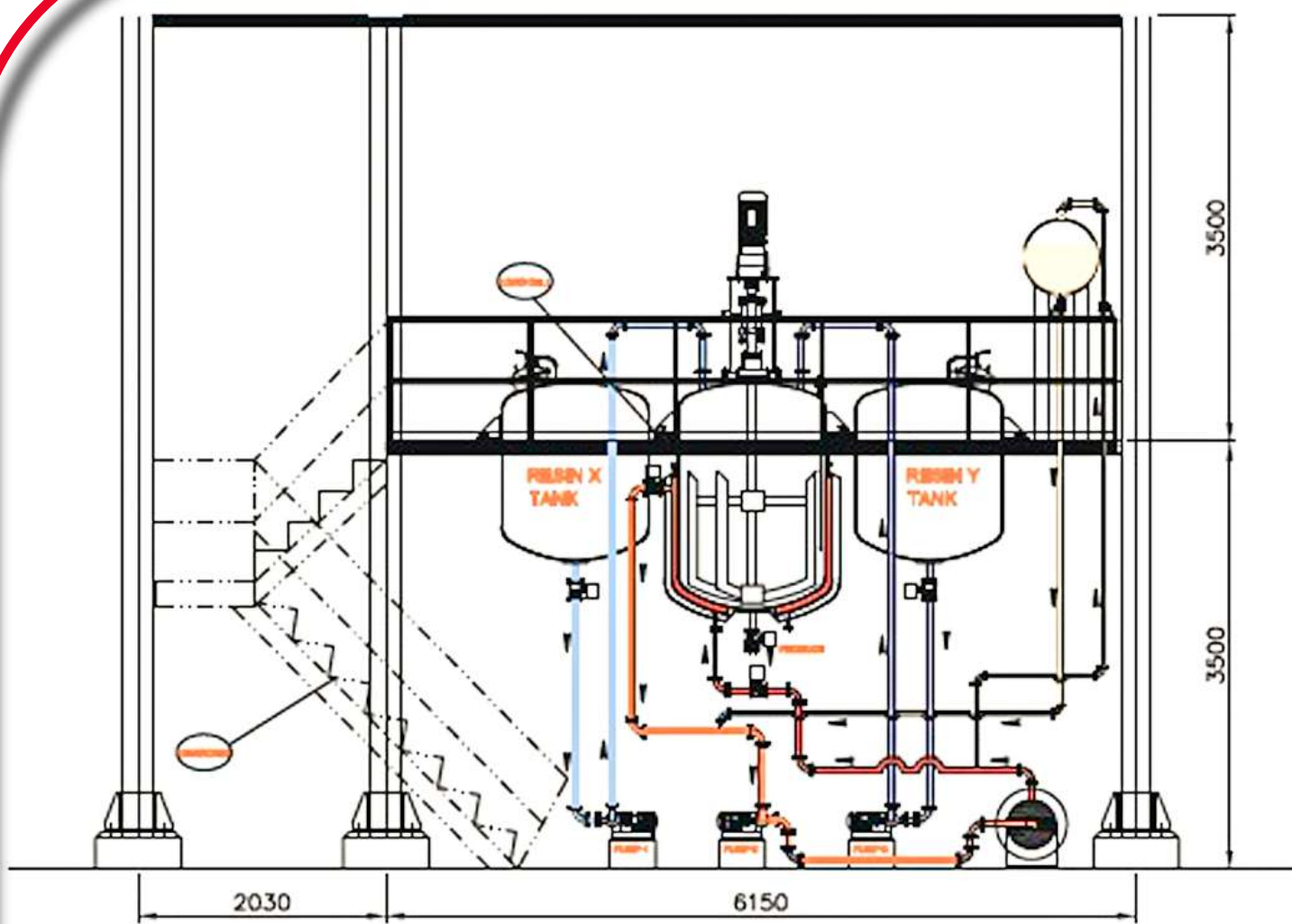
A hot melt glue production facility must be built with careful design, exact formulation, cutting-edge machinery, quality control procedures, and a strong commitment to environmental responsibility and safety. Technical proficiency, stringent quality control, and a commitment to addressing the adhesive needs of various industries are all necessary for successful production.



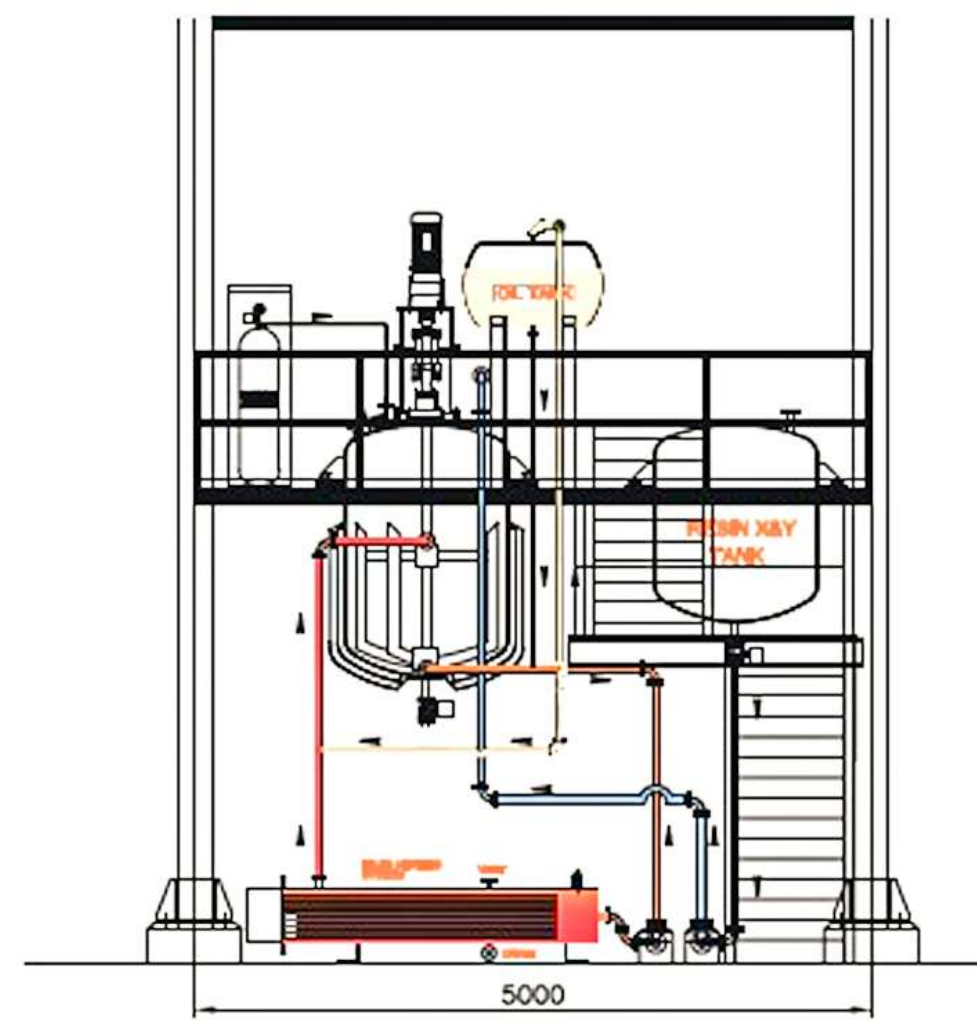
ISOMETRIC VIEW-01



ISOMETRIC VIEW-02



ELEVATION



SIDE VIEW



Key Features

- ◆ Mixing Plants are designed to achieve precise and consistent blending of ingredients. The mixing kettles, along with agitators or mixing devices, ensure thorough and uniform distribution of components, resulting in a homogeneous product.
- ◆ Mixing Plants often incorporate heating and cooling systems to maintain the desired temperature during the mixing process. This temperature control allows for specific reactions, viscosity adjustments, or preservation of product stability.
- ◆ Mixing Plants are typically constructed with materials that meet strict hygiene standards, such as stainless steel. This ensures the production of sanitary and contaminant-free products, making them suitable for industries like pharmaceuticals and food production.
- ◆ Mixing Plants often feature advanced control and monitoring systems. These systems allow operators to monitor critical parameters such as temperature, mixing speed, and ingredient flow rates. Precise control ensures consistent quality and enables operators to make adjustments as needed.
- ◆ Mixing Plants can be seamlessly integrated with other equipment in the production line. This integration enables a continuous manufacturing process, reducing handling and transfer steps, and improving overall operational efficiency.



Hot Melt Adhesive for Granules

- ◆ Hot melt adhesive for granules is a versatile and efficient bonding solution commonly employed across various industries. This thermoplastic adhesive is heated to a molten state and then applied to granular materials, solidifying rapidly upon cooling to create a strong and reliable bond. The selection of the appropriate hot melt adhesive is crucial, ensuring compatibility with the specific type of granules and the substrate to be bonded.
- ◆ Proper temperature control during application is essential, as overheating can degrade the adhesive, while under heating may result in inadequate bonding. Whether applied directly to the granules or the bonding surface, it's important to achieve even distribution for optimal adhesion. Safety precautions should be observed due to the high-temperature nature of hot melt adhesives. Conducting preliminary tests is advisable to verify the adhesive's suitability and strength for the intended application.
- ◆ Adequate storage conditions must also be maintained to preserve the adhesive's effectiveness. Overall, hot melt adhesive for granules offers a rapid and robust bonding solution across a wide range of industries, from packaging to wood working and textiles to automotive.



Hot Melt Adhesive for Stick

- ◆ Hot melt adhesive sticks, commonly referred to as hot glue sticks, are cylindrical-shaped solid adhesive forms that are designed to be used with hot glue guns. These adhesive sticks are made from thermoplastic materials that melt when heated and solidify upon cooling. They are widely used in crafting, DIY projects, woodworking, packaging, and a variety of other applications.
- ◆ Hot melt adhesive sticks offer the advantage of quick and easy bonding, as they can be applied precisely where needed. They are available in different sizes and formulations to suit various bonding requirements, making them a versatile choice for both professionals and hobbyists.
- ◆ When using hot melt adhesive sticks, it's important to select the right stick size and adhesive formulation for your specific project to ensure a secure and durable bond.





Hot Melt Adhesive for Pillow Packaging

- ◆ Hot melt adhesive is an ideal choice for pillow packaging applications. Pillow packaging, often used in the food industry for products like snacks and candies, requires a secure and aesthetically pleasing seal to encase the contents within a plastic or foil pouch. Hot melt adhesive, in pellet or stick form, is easily applied using automated packaging equipment.
- ◆ The adhesive offers several advantages in this context: it bonds quickly, ensuring efficient production line speeds, and it creates a strong, reliable seal that prevents tampering and protects the product's freshness.
- ◆ Moreover, hot melt adhesives are versatile and can adhere to various packaging materials, including plastic films and foil, making them well-suited for pillow packaging across a range of industries.
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Advantages

- ◆ Efficient blending and precise control in Mixing Plants ensure consistent product quality from batch to batch. This consistency is essential for meeting customer expectations and maintaining a strong brand reputation.
- ◆ Mixing Plants streamline the production process, reducing the time and effort required for ingredient blending. Efficient mixing and temperature control systems contribute to faster processing times and higher production rates.
- ◆ Proper mixing and precise ingredient utilization in Mixing Plants help minimize ingredient waste and optimize resource consumption. This leads to cost savings in terms of raw materials, energy, and operational efficiency.
- ◆ Mixing Plants are designed to meet stringent regulatory requirements in industries such as pharmaceuticals, food, and cosmetics. Compliance with quality and hygiene standards ensures that products meet regulatory guidelines and consumer safety expectations.



Applications and Industries

◆ **Pharmaceuticals**

Mixing Plants are essential in pharmaceutical manufacturing for blending active pharmaceutical ingredients (APIs), excipients, and other components to produce drugs in liquid or semi-liquid forms. They are used for formulating solutions, suspensions, creams, ointments, and other pharmaceutical products.

◆ **Food and Beverages**

Mixing Plants are extensively employed in the food and beverage industry for blending ingredients to create products such as sauces, dressings, marinades, dairy products, beverages, and confectioneries. They ensure consistent taste, texture, and quality of food and beverage products.

◆ **Cosmetics and Personal Care**

Mixing Plants play a vital role in the cosmetics and personal care industry, where precise blending of ingredients is crucial for the formulation of creams, lotions, gels, shampoos, conditioners, and other personal care products. They enable the creation of homogeneous products with desired consistency and stability.

◆ **Chemicals and Petrochemicals**

Mixing Plants are utilized in the chemical and petrochemical industries for blending various chemicals, solvents, additives, and raw materials. They are used in the production of paints, coatings, adhesives, lubricants, detergents, and other chemical-based products.

◆ **Specialty Chemicals**

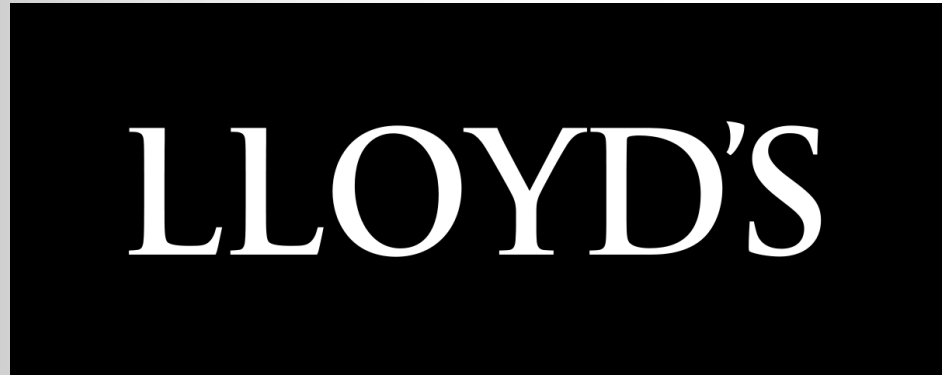
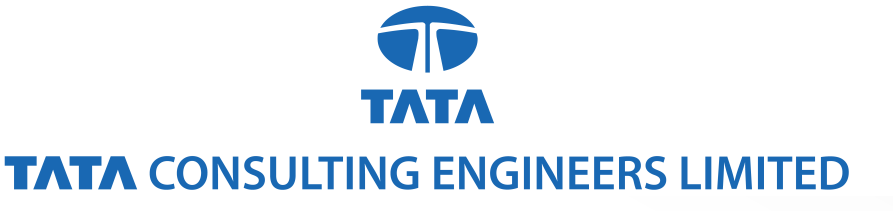
Mixing Plants find applications in the production of specialty chemicals, such as dyes, pigments, inks, flavors, fragrances, and specialty polymers. Precise blending ensures uniform dispersion of additives and components, resulting in high-quality specialty chemical products.

◆ **Biotechnology**

Mixing Plants are employed in biotechnology applications, including biopharmaceutical manufacturing, fermentation processes, and the production of enzymes, vaccines, and cell culture media. They facilitate the precise mixing of sensitive biological components and maintain optimal process conditions.



TRUSTED PARTNERS





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