



Presidency of the Islamic
Republic of Iran
Vice Presidency for
Science and Technology



Thirteenth, Volume

PAINTS, RESINS & POLYMER ADHESIVES

Knowledge-Based Products and Equipment

مجلس المدینة العلمیة

THIRTEENTH VOLUME

Knowledge-Based Products and Equipment
Paints, Resins & Polymer Adhesives





Presidency of the Islamic
Republic of Iran Vice Presidency for
Science and Technology

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Export Development &
Technology Transfer Fund

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Knowledge-Based Products and Equipment

Thirteenth Volume: **Paints, Resins & Polymer Adhesives**

Supervisor: Export Development and Technology Transfer Fund (ETDF)
Email: info@etdf.ir
Website: www.etdf.ir
Tel: (+98) 21 910 700 80
Address: No 4, Eram Alley, North Shirazi St., Mollasadra St., Vanak Tehran, Iran,
P.O BOX 1991734784

Preface

One of the key factors in a nation's industrialization and economic complexity is technology. Complex economies can connect vast networks of individuals with relevant information to produce a variety of knowledge-based goods. Indeed, the types of goods or products that are ultimately supplied to international markets are taken into account when determining the complexity of an economy.

A knowledge-based economy is one in which the application of knowledge and information plays a significant role in shaping production and distribution, and where investments in knowledge-based businesses have drawn particular attention. Along with enhancing nations' competitiveness, the transformation of economies into knowledge-based economies has the potential to have a significant impact on international trade.

7000 knowledge-based businesses in Iran provide knowledge-based goods that are the result of the expertise and experience of professionals and university graduates. These businesses, which occasionally resemble enormous technology factories, sold more than 10\$ billion worth of goods last year and exported 1\$ billion or so to various nations. The Presidential Deputy for Science and Technology is recognized as the most significant authority for direction, leadership, and development of the technology area in Iran. It serves as a support organization for startups and knowledge-based businesses by finding and selecting these enterprises. This book, along with 19 other books, is a carefully curated selection of goods with a track record or export potential that was put together using data provided by chosen businesses for presentation to foreign clients, business people, and government and academic officials interested in using these goods. To review the company's manufacturing and distribution records, access to technical knowledge and specialized human resources, production and export capacities, and after-sales services, two specialized and commercial committees were formed separately, and each committee reviewed the products in detail with the participation of technical and commercial experts.

In this procedure, specialized committees were held with the collaboration of the experts of the center of companies and knowledge-based institutions of the Deputy for Science and Technology, headed by *Dr Reza Asadi Fard* and Coordinated by *Engineer Mojtaba Houshmandzadeh*. In addition, *Engineer Mehdi Ghaleh Noei* and *Engineer Ruhollah Estiri* presided over commercial committee meetings, which also included businessmen from the private sector, and I want to express my gratitude to these two groups for their work and assistance.

I also want to appreciate the project manager, *Zahra Afzali*, who has taken on a lot of responsibility and given close attention to the project's design and development from the beginning with innovative ideas.

I also think it's important to recognize and express my gratitude to my other colleagues for their efforts in gathering, reviewing, contacting firms, selecting, and rewriting texts, and finally editing and creating this book:

Project monitoring and editing team: *Mohammad Torabi, Fereshte Elahi*

Evaluation team: *Mohammad Ali Pour Ebrahim, Kaveh Ashjaee*

Editorial team: *Mohammad Ali Pour Ebrahim, Farzaneh Farokhi, Reza Mahdavi*

Design team: *Mohammad Hossein Pourdabbaq, Masoud Khalili*

I want to underline that the aforementioned goods may be offered in a variety of ways in the country of destination, including export of end products, export of semi-finished and assembled products at the destination, joint production in the destination country and other economic cooperation. In each of the aforementioned scenarios, the Export Development and Technology Exchange Fund is prepared to co-invest in the target countries and guarantee the purchases as a financial sponsor of knowledge-based export enterprises.

The book's conclusion also includes a list of export management firms authorized by the Deputy for Science and Technology for communication, Iran Houses of Innovation & Technology (iHiTs), located in several countries, and commercialization and technology transfer agencies. Finally, I am hoping that this book will be beneficial to the readers and provide them with a thorough grasp of Iranian technological advancements.

Regards,
Mehrdad Amani Aghdam
CEO of Export Development and Technology Transfer Fund

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Introduction

The Origin of Industry and Export in The Eyes of Iranians

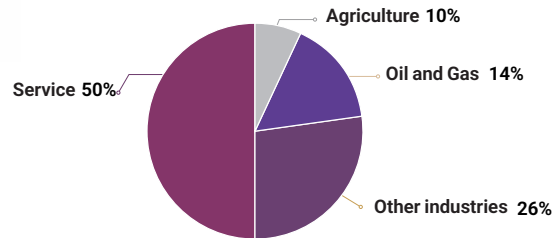
The ancient land of Iran has long been the source of knowledge and industry, and Iranians have played a significant role in the development, evolution and promotion of science and human awareness. Most historians of the world believe that most of the advances in science and human civilization are owed to Iranian civilization and the most brilliant works of art and the highest industrial levels has come from the minds of Iranians. Metalworking industries, agricultural industry, pharmacy and alchemy with themes including tile glazing, carpet dyeing, fabrics and glass were some of the industries that were considered by ancient Iranians. In parallel with the special attention to the development of industry, the history of mutual trade relations between Iranians and other civilizations in East and Central Asia, Europe and Africa has a long history, and Iranians have played a significant role in the expansion of global altruism since long ago by being on the route of the Silk Road and maritime trade.

We Iranians today, like our ancestors, consider industry, art and production in our ancient land to be a transformative and constructive place, and we consider the development of technological interactions and the trade of knowledge-based industrial products with other countries as an opportunity for friendship and the expansion of ties.

Industry and Export in Today's Iran

Industrial development has a very important place in the plans and policies of the Islamic Republic of Iran due to the creation of value added, job creation, increase in exports and reduction in imports, and the transition from an economy dependent on oil and mineral raw materials to an industrial and manufacturing economy, especially an economy dependent on new technologies, is a grand plan that has been adopted for this purpose. Currently, 50% of Iran's gross domestic product is allocated to services and another 50% to industry and manufacturing, which includes 10% agriculture and food industry, 14% oil and gas industry, and 26% other manufacturing industries.

The Share of Various Activities in Iran's GDP

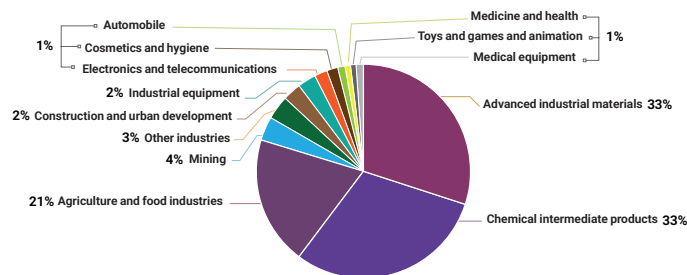


In the meantime, various industries such as pharmaceuticals, medical equipment, construction, communications and telecommunications, energy, mining, chemicals, etc. have a special share of Iran's gross domestic product, and their production, in addition to covering a considerable amount of country's domestic needs, are exported to various destinations.

According to World Customs Organization data, in 2021, the Islamic Republic of Iran had exports equal to 75 billion dollars, almost half of which is allocated to non-oil industries and processed industrial products. Advanced industrial materials, chemical intermediate products, agricultural products and food industry are all among the biggest exporting industries with more exports.

Iran's Exports in 2021

Ref: Trade Statistics for International Business Development ¹



¹ www.trademap.org

Regarding the main export destinations of Iran, it should be noted that China, India, Indonesia, Russia, Uzbekistan, Ghana, Germany and South Africa, as well as among the regional neighbours, Iraq, Turkey, UAE, Afghanistan, Pakistan, Oman, Turkmenistan, and Azerbaijan account for the largest dollar value of imports from Iran.

Where the New Technologies Stand in Iran's Industry

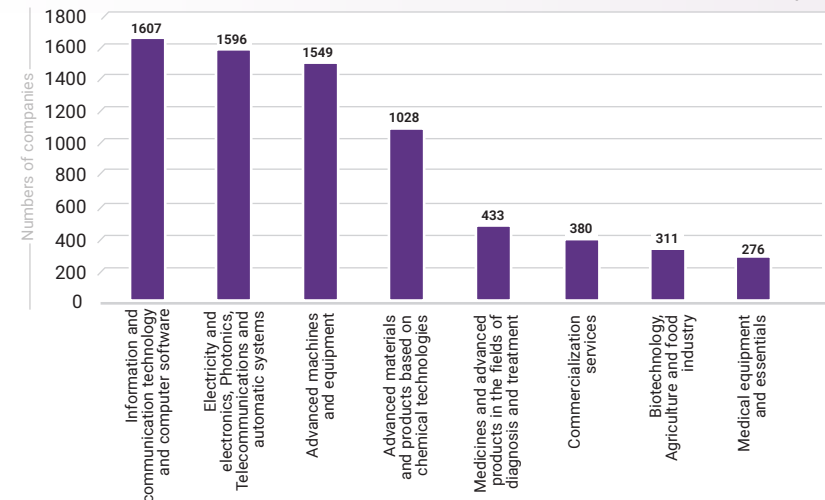
Paying attention to the development of new technologies, commercialization and its influence on manufacturing industries has caused the Islamic Republic of Iran to experience a growing progress in this field in the last decade; An issue that has taken place in Iran in the form of the development of knowledge-based enterprises. Based on this, the meaning behind knowledge-based enterprise is as follows:

A private company that produces products or provides services that have the following three features:

1. The product or service provided by the company has a high or medium to high technology level and its technical knowledge has a significant technical complexity (technology level condition).
2. The product or service design in the company is based on internal research and development or technology transfer (Research and development-based design condition).
3. The company is able to produce and provide the mentioned goods or services to the market (production condition).

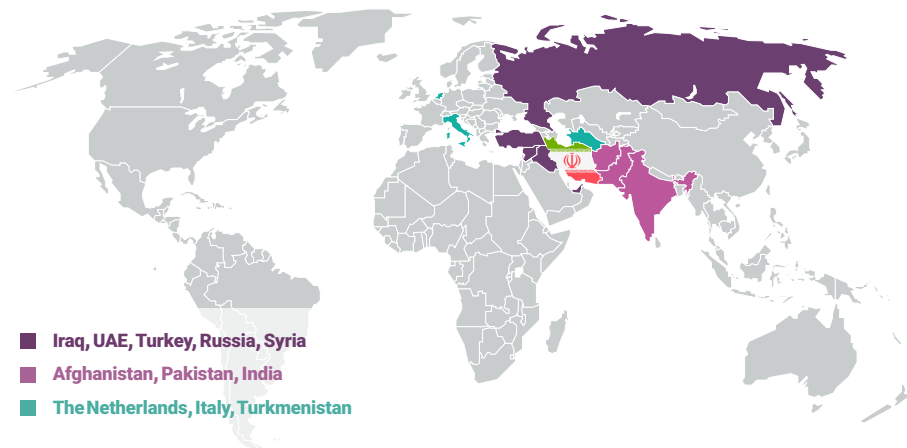
Currently, more than 7 thousand knowledge-based enterprises in Iran are producing products and providing services in the field of various technologies. These companies produce more than 15,000 products or services in total, and their direct employees, which generally include people with a high level of education, are around 250,000 people.

The Number of Knowledge-Based Companies - Technology Fields



The export of Iran's knowledge-based enterprises has been growing in the last 5 years, and these companies currently account for about %2 of Iran's non-oil exports.

The Largest Export Destinations of Iranian Knowledge-Based Enterprises in the Last 5 Years



The Status of Knowledge-Based Products in Paints, Resins & Polymer Adhesives

Due to their wide and varied application in various industries and also due to the competitive advantage of the Islamic Republic of Iran in the production of raw materials, paints, resins and polymer adhesives are considered to be one of the downstream petrochemical industries, whose development is considered very important. Therefore, in the last decade, we have witnessed a significant growth in the production of these basic industrial products in Iran.

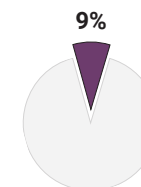
According to the reports of the Central Bank, the share of the industry sector in the GDP is about %26. The petrochemical industry of Iran produces a myriad of raw materials required for the production of paint, resins and polymer adhesives and this indicates their prominent position. Furthermore, other industries such as electricity, steel, construction, medical equipment, automobile, oil and gas, etc., are consumers of these products. Thus, this industry is closely related to a wide range of industries in Iran. In addition, paints, resins and polymer adhesives have a special place in Iran's exports. In the last few years, about 11,500 million dollars, which comprises about 15 percent of Iran's total export has been allocated to the field of chemical intermediates, a significant part of which is specific to paints, resins and polymer adhesives.

Considering the availability of the primary resources required for the production of

chemical intermediates in Iran (which include paints, resins and polymer adhesives) as well as the dependence of other industries on this field, the foundations for the growth of many knowledge-based technologies and products have been provided in it. This process is currently under way owing to the activity of more than 650 Iranian knowledge enterprises and the supply of more than 1100 technological products.

Paying special attention to creation of added value in technology chains related to oil extraction and the development of downstream petrochemical industries has caused the activity of knowledge-based companies that produce chemical intermediates that include paints, resins and polymer adhesives to be accompanied by significant growth in recent years. This statement can be proved considering that this field comprises about %10 of the volume of Iran's knowledge-based production and employment. Finally, regarding the export of knowledge-based products of this field, it is worth mentioning that a total of 845 million dollars worth of products produced by knowledge-based companies active in the field of chemical intermediates have been exported outside Iran in the last 5 years.

The Percentage of Chemical Intermediates from All the Knowledge-Based Enterprises

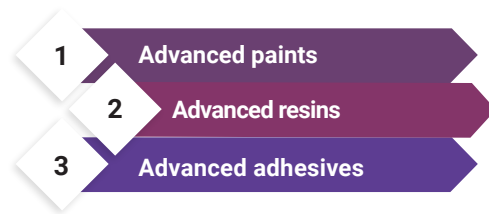


The Main Export Destinations of Iranian Knowledge-Based Enterprises in the Field of Chemical Intermediates



The Division of Knowledge-Based Products in Paints, Resins & Polymer Adhesives

As previously mentioned, due to the availability of the primary resources required for the production of paints, resins and polymer adhesives in Iran, as well as the dependence of other industries on this field, the foundations for the growth of many knowledge-based technologies and products has been provided in it. This book includes products that can be divided into the following categories:



The following describes each category and their subcategories in order to give a general understanding of these areas.

1

Advanced Paints

In the formulation process of advanced paint, various parameters are involved, which causes special and practical features in the paint. These capabilities can include creating resistance to water and temperature, anti-corrosion properties, creating anti-freeze coatings, self-cleaning and self-healing properties, etc. In this category, regardless of their production process and technical parameters, the classification is based on their specific industrial application and is as follows:

- **First Section | Coil Coating Paints:**

In this category, the paints used in the production of metals with colored coating and also painted metals are presented, which are known as coil coating paints. It should be noted that when using this type of paint, first both surfaces of the metal sheet are cleaned and undergo a chemical treatment, then the primer process is performed and ultimately, this process ends with the baking of the sheet in the furnace. In this category, only the chemical paints of the mentioned process are presented.

- **Second Section | Epoxy Paints:**

This type of paint is a two-component product based on epoxy resin and polyamide hardener and is considered a thermosetting paint. Epoxy paints included in this category have good adhesion properties and high resistance to environmental and chemical factors. They are also widely used in industrial structures due to their anti-corrosion properties.

- **Third Section | Colorants (Dyestuff):**

In this category, one of the raw materials of the paint industry known as colorants, which are among knowledge-based products, is presented. Colorants have different types and classifications. The products in this category include coloring agents, whitening agents, and matting agents.

- **Fourth Section | Traffic Paint:**

As the name suggests, the paint used in painting the public thoroughfares fall into this category. This type of paints can be divided into cold, warm and multi-component traffic paints. Properties such as high abrasion resistance, being water resistant, excellent adhesion to asphalt and concrete, no color change when exposed to sunlight and high drying speed are considered important in traffic paints

- **Fifth Section | Protective Paints:**

These paints are among the industrial protective coatings that are used to increase the resistance of metals against oxidation and protect them, as well as for protection against waves. In order to produce protective paints, special resins and materials are used that can create a hard and impenetrable coating in the paint.

- **Sixth Section | Powder Paints:**

Unlike other paints, powder paints are produced and stored in a solid form and in a powder state. Hence these paints are used through electrostatic spraying (charging the surface of metal and paint powder). The powder paints introduced in this category have anti-corrosion and antibacterial properties.

Start chapter at page 22 »

2

Advanced Resins

Resin is a widely used term that mostly refers to compounds that are in liquid form and then turn into a solid and hard surface through certain processes. Therefore, these products consist of two components, resin and hardener, and by mixing these two liquid components, a chemical reaction takes place between them. There are many types of resin in the industry, some of which are knowledge-based products and are produced by Iranian knowledge enterprises:

- **First Section | Acrylic Resins:**

Acrylic resins introduced in this category are actually polymer materials that contain acrylic monomers. In general, acrylic resins exhibit good chemical and photochemical resistance. They are commonly used and have many different applications, from solvent-based and water-based industrial coatings to architectural coatings

- **Second Section | Other Polymer Resins:**

Other polymer resins produced by knowledge-based companies are presented in this category, and among them can be mentioned polyurethane resins and polyester resins. Also, these resins can be divided into two categories of cold box and thermoplastic.

Start chapter at page 60 »

3

Advanced Adhesives

Adhesive is a substance that holds or sticks two different surfaces together. There are many types of industrial adhesives and they are usually classified based on adhesive properties, composition or curing mechanism and production method. Knowledge-based advanced adhesives are categorized here based on the adhesion process and include the following:

- **First Section | Hot-Melt Adhesives:**

Hot-melt adhesives have a solid formulation and enter the liquid phase when heated. After the parts are bonded together, they immediately change phase and become solid again. The adhesives in this category are applied on the substrate by extruder, roller or spray and are based on APAO, SBC and EVA.

- **Second Section | Pressure-Sensitive Adhesives:**

Pressure-sensitive adhesives are adhesives that establish a strong bond with objects in a dry state and normal temperature only with a little pressure. The composition of basic polymers of pressure-sensitive adhesives includes acrylic polymers, silicones, polyurethanes and polyesters.

- **Third Section | Other Polymer Adhesives:**

In this category, other polymer adhesives produced by Iranian knowledge enterprises such as interlayer polymer adhesives, cold seal adhesives, adhesives used for connecting rubber to metal, etc., are introduced.

Start chapter at page 98 »

Paints, Resins & Polymer Adhesives

First Chapter Advanced Paints

- Coil Coating Paints
- Epoxy Paints
- Colorants (Dyestuff)
- Traffic Paint
- Protective Paints
- Powder Paints



Second Chapter Advanced Resins

- Acrylic Resins
- Other Polymer Resins



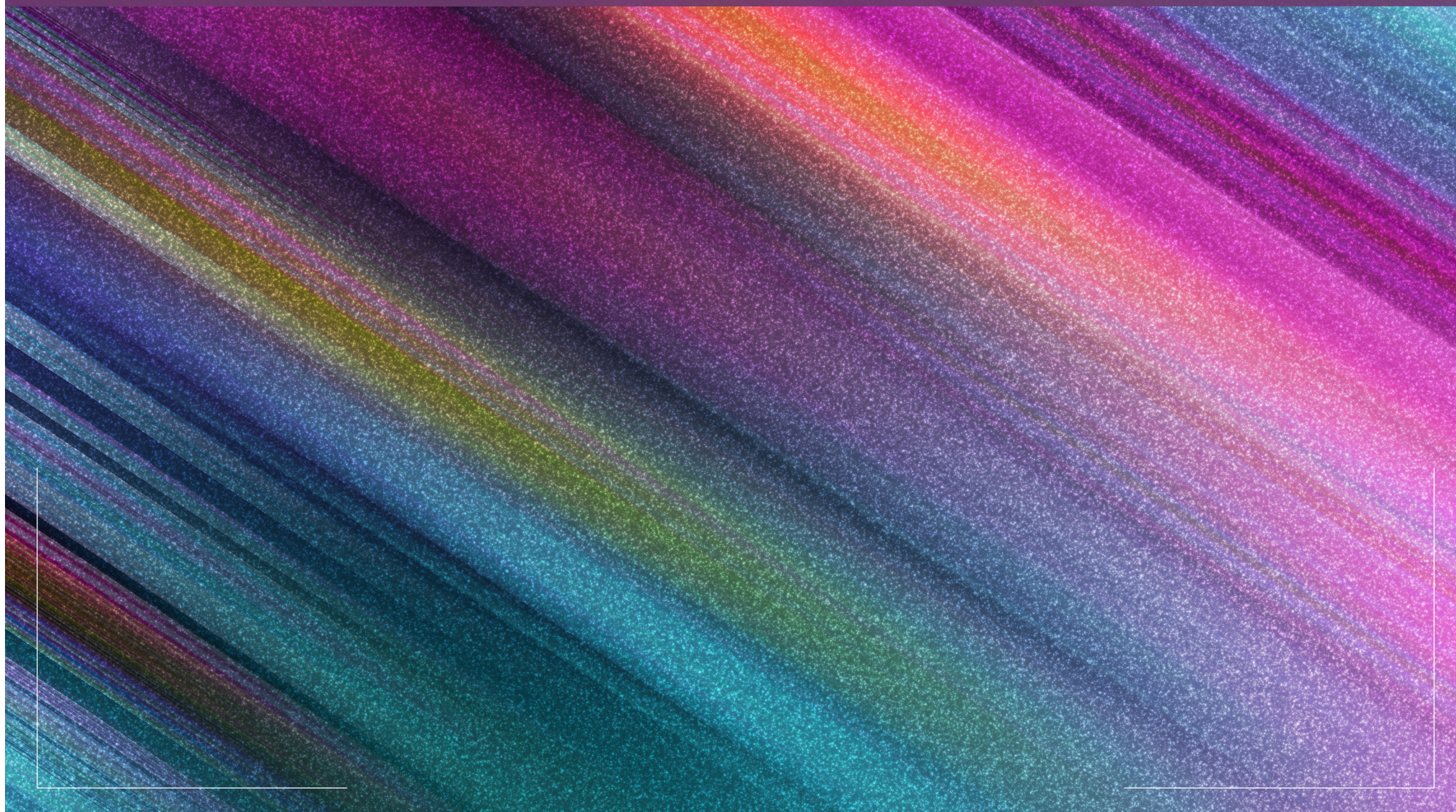
Third Chapter Advanced Adhesives

- Hot-Melt Adhesives
- Pressure-Sensitive Adhesives
- Other Polymer Adhesives



First Chapter

Advanced Paints



1st CHAPTER

First Chapter

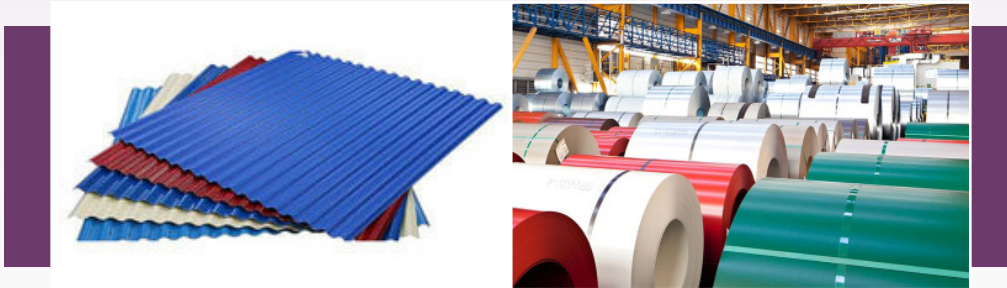
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Third Chapter

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Coil Coating Paints	○
Epoxy Paints	○
Colorants (Dyestuff)	○
Traffic Paint	○
Protective Paints	○
Powder Paints	○



➤ Construction Coil Coating

◆ Tuka Paint Foolad Sepahan Co.

www.tukapaint.ir



Product Introduction:

The physical-mechanical features of the coating of metal coils, whether aluminum or galvanized, allow the sheet to be painted first and be provided to industries as a coil or pre-painted sheet. These sheets have the ability to withstand the change of mechanical forms, including cutting, bending, stretching, and in these stages, they maintain their adhesion to their substrate. In addition, these coatings have very good weather resistance and are suitable for structures that are exposed to sunlight and different weather conditions (sultry, desert, urban). These coatings are applied by roller method and are often applied in three layers of lining, top and back coating on the sheet.

Founded:

2006

Application:

The main use of these metal sheets is in the building facade, sandwich panels and use in the roof and attics.

This product is a final B2B customer product.

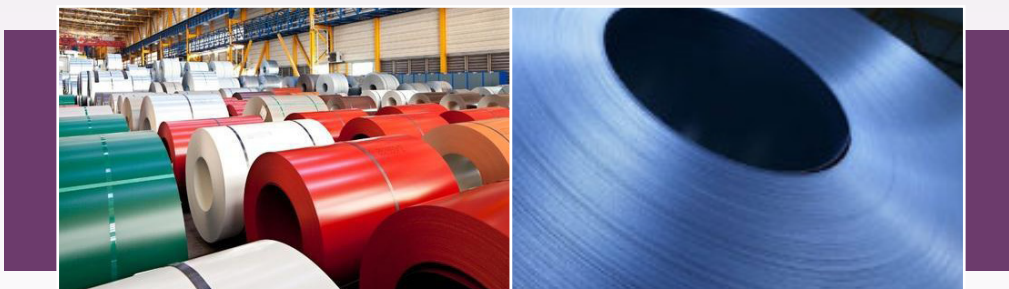
Technical Specifications:

This coating is applied on the metal surface in the form of 3 top layers, primer and back coating.

- * **Primer layer:** This layer is implemented with the aim of improving the adhesion and flexibility of the coating system. Its formulation requirements include high adhesion, high flexibility and longer curing time than the top layer. After applying the primer and placing the galvanized sheet in the furnace, this layer should not be fully baked; Because if this happens, the top layer will not stick to it.
- * **Top layer:** This layer is the most important layer and its formulation is very important. This layer contains polyester resin, pigment, hardening agent and catalyst.
- * **Back coating:** This layer is 5 micrometers thick on the back of the galvanized sheet and is based on polyester resin or a hybrid of epoxy and polyester. The back layer is connected with a single layer of foam, usually made of polyurethane, and the adhesion of this layer to polyurethane foam is one of the requirements of this layer.

Advantages:

This company currently supplies 50% of the steel industry's needs, which is a proof of its high production capacity and reasonable price. Another advantage of this company is the completeness of its product portfolio.



► Coil Coating Used in the Color Sheet of Household Appliances

◆ Tuka Paint Foolad Sepahan Co.

www.tukapaint.ir



Product Introduction:

This type of coil coating is designed in such a way that after finishing the baking process, it looks as if the paint has been applied with a spray and the orange peel effect can be seen in it. The product has a formulation of a color based on polyester resin, solvent, pigment and some additives. The factor that creates a different appearance in this type of coating is the use of two types of curing agents with different curing speeds, which causes roughness in the surface.

Founded:

2006

Application:

Colored sheets coated with this type of paint can be used to produce refrigerators, stove color, kitchen hoods, washing machines, and so on.

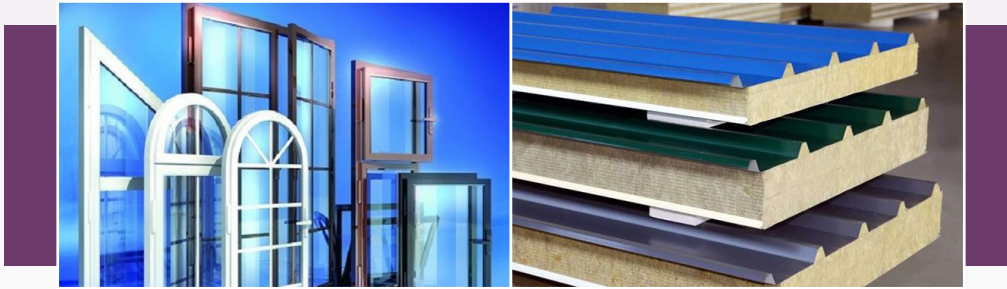
This product is a final B2B customer product.

Technical Specifications:

The conventional method in painting household appliances is to use electrostatic spraying of polyester powder. Another method is to use colored sheets that after applying color on the metal surface through the coil coating process, the color should have high resistance to chemicals, high gloss, high hardness, high impact resistance and excellent bending resistance.

Advantages:

This company currently supplies 50% of the steel industry's needs, which is a proof of its high production capacity and reasonable price. Another advantage of this company is the completeness of its product portfolio.



➤ Coil Coating Colors (Primer, Top Coat, Back Coat) with Catalyst Synthesis

◆ Giti Assa Co.

www.gitiassa.com



Product Introduction:

The product is a formulation of a color based on polyester or epoxy-polyester resin and other components. This product is produced in order to cover the surface of galvanized or steel rolled sheets used in industrial sectors through the coil coating process.

Coil Coating is a continuous and fully automated process for coating and painting metals before use. In this method, during a continuous process, first both the top and bottom surfaces of the sheet are cleaned, chemical treatment is performed on it, primer is applied, it is baked in the oven and the cover or top coat is applied. Then it is placed again in the oven and finally the painted sheet is rolled and packed.

Founded:

1990

Application:

New methods and processes have been used in the production of coil coating sheets, which have created a uniform and stable production path. Foils made in this way are used in many industries and have a variety of applications, including building roofs, container bodies, composite panels (sandwich panels), doors and windows, sports tools and equipment, as well as home and kitchen appliances such as refrigerators, oven, washing machine, etc.

This product is a final B2B customer product.

Technical Specifications:

Usually, a metal color production line by coil coating method consists of the following steps:

- * opening the metal roll and cleaning the sheet
- * cutting (removing grease, etc.)
- * chemical treatment
- * drying the sheet
- * priming both sides
- * heat treatment (baking in the oven between 15 and 60 seconds)
- * cooling the sheet
- * applying the top color
- * second heat treatment
- * cooling to room temperature
- * & rolling the sheet again

As it is clear from the above description, two types of coating are used for this product, including the top coat and the back coat of the rolled sheet: first, the top coat is applied and then the back coat is applied while maintaining the necessary properties. In both stages, only a few microns of coating are applied, which needs to be baked at a temperature of about 230-210 °C in 30 seconds. The most important thing that must be observed is to maintain the properties of the color while rolling the galvanized, steel or aluminum sheet so that it does not crack either during rolling, during re-opening, or during conversion into a special product (T-bend Test).

Advantages:

- * High production volume
- * Reasonable price



➤ Splash Zone Epoxy Paint Based on Phenalkamine Epoxy Hardener Synthesis

◆ Abadgaran Construction Chemicals Co.

www.abadgarangroup.net



Product Introduction:

This product is a solvent-free epoxy paint to protect concrete surfaces. This color is ideal for use in tidal and splash, and on-shore areas; In such a way that it continues the baking reaction even after being immersed in water. This color can be applied on wet surfaces and by using the modified epoxy system, it is possible to apply this color in environments exposed to the atmosphere. In other words, while the water level is low, this coating is applied and when the water rises in the tide, the resin curing is completed in the water.

Main Export Destinations:

Iraq

Export History:

Up to 500,000 \$

Founded:

1993

Application:

The produced resin is used in the casting industry, especially the casting of delicate parts (such as car parts) using the cold box method. This product has no other alternative.

This product is a final B2B customer product.

Technical Specifications:

The formulation is two-part, the first part of which is epoxy paint with thinner and other components, and the second part is phenalkamine hardener.

Advantages:

Due to the synthesis of hardener by the company itself, the price is lower.

International Standards or Permissions:

- * ASTM C900 and ASTM C881M
- * Confirmation of Askaleh-ye Bandar Emam (Iran)



➤ Solvent-Free Epoxy Paint Based on the Synthesis of Phenalkamine Epoxy Hardener

◆ Abadgaran Construction Chemicals Co.

www.abadgarangroup.net



Product Introduction:

The difference between this color and the previous color is actually the application of this product. The product is used in docks and places that are not in contact with water and are exposed to salty winds and humidity.

Main Export Destinations:

Iraq

Export History:

Up to 500,000 \$

Founded:

1993

Application:

As a protector on polymer surfaces after printing

This product is a final B2B customer product.

Technical Specifications:

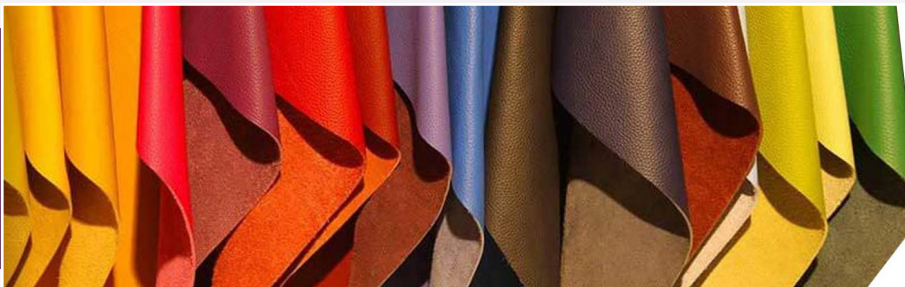
The difference between this product and the previous product is that this product uses cycloaliphatic epoxy thinner, which has higher chemical and UV resistance than the previous product.

Advantages:

Due to the synthesis of hardener by the company itself, the price is lower.

International Standards or Permissions:

- * ASTM C900 and ASTM C881M
- * Confirmation of Askaleh-ye Bandar Emam (Iran)



Application:

The produced materials are used in the leather industry, textile, production of detergents such as soap and shampoo, and adding color to products used in agriculture, such as fertilizer and plant additives.

➤ Bis-, Tris- and Tetra-Azo Dyes

◆ Alvan Sabet Industry Covered Paint Co.

www.alvansabet.com



Product Introduction:

These goods are a group of azo dyes in the form of bis, tris and tetra, which actually means that there are two, three or four azo groups in the structure. The desired material is obtained from the coupling of aromatic amines and other aromatic rings, which include the following:

- * Acid Black ATT
- * Direct Black 22
- * Blue D71 Direct
- * Direct Red 23
- * Reactive Black 5
- * Yellow 86 Direct
- * Orange 122 Reactive
- * Red 195 Reactive

In addition to the mentioned items, the company also produces various bases of mono coloring materials. The produced dyes have good color and light stability.

Main Export Destinations:

China, Azerbaijan, Turkmenistan, Iraq

Export History:

Up to 500,000 \$

Founded:

1983

This product is a final B2B customer product.

Technical Specifications:

The mentioned materials have passed all kinds of FTIR, UV-vis tests, dyeing of all kinds of textiles at different temperatures and reflective spectroscopy, the stability of the coloring matter and the appropriate color. The most important feature of azo dyes is the amount of amine remaining in the product, which has been minimized by using rubber-lined reactors and industrial processes.

Advantages:

- * Appropriate purity along
- * The possibility of supplying a large volume of requested materials as well as competitive prices in the regional market due to the high prices of transportation from China to the countries of the region.



Application:

The mentioned dyes are used for dyeing wool, silk, nylon and polyester fabrics.

➤ **Metal Complex Dyes**

◆ Alvan Sabet Industry Covered Paint Co.

www.alvansabet.com



Product Introduction:

By complexing azo dyes with metal elements, their functional stability, especially their optical stability, increases greatly. The offered products are azo dyes complexed with chromium (with a ratio of 2 to 1).

Main Export Destinations:

China, Azerbaijan, Turkmenistan, Iraq

Export History:

Up to 500,000 \$

Founded:

1983

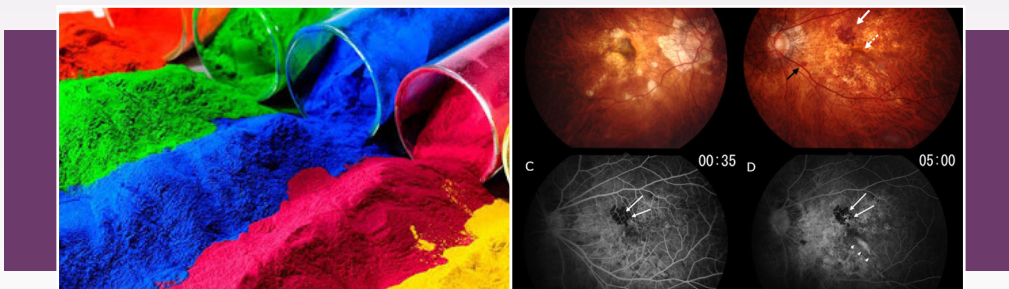
This product is a final B2B customer product.

Technical Specifications:

The materials provided are blue and black and are crushed and micronized using a mixer crusher and packaged. Color stability and dyeing behavior tests have been performed and FTIR and UV-Vis spectra have also been obtained. Reflectance spectroscopy, dye material stability and suitable color tests have also been done on the product.

Advantages:

- * Appropriate purity along
- * The possibility of supplying a large volume of requested materials as well as competitive prices in the regional market due to the high prices of transportation from China to the countries of the region.



Application:

One of the most important uses of fluorescein is its use in angiography by direct injection and then photography. Fluorescein with industrial purity is used as a dye in antifreeze and to indicate the movement of underground water.

➤ **Fluorescein Dye**

◆ Alvan Sabet Industry Covered Paint Co.

www.alvansabet.com



Product Introduction:

The dye fluorescein is obtained from the 2 to 1 reaction of resorcinol and phthalic anhydride. The resulting dye is fluorescent and is a red powder. The purity of the product is at the industrial level and it is not used for medicinal applications.

Main Export Destinations:

China, Azerbaijan, Turkmenistan, Iraq

Export History:

Up to 500,000 \$

Founded:

1983

This product is a final B2B customer product.

Technical Specifications:

The materials provided are fluorescent and are crushed and micronized using a mixer crusher and packaged. Color stability and dyeing behavior tests have been performed and FTIR and UV-Vis spectra have also been obtained. Reflectance spectroscopy, dye material stability and suitable color tests have also been done on the product.

Advantages:

- * Appropriate purity along
- * The possibility of supplying a large volume of requested materials as well as competitive prices in the regional market due to the high prices of transportation from China to the countries of the region.



Application:

This product used to whiten the appearance of fabric, chemical fertilizers and detergents

➤ **Optical Brightener (Fluorescent Brightener)**

◆ Alvan Sabet Industry Covered Paint Co.

www.alvansabet.com



Product Introduction:

Optical brightener is a yellow powder with a fluorescent color, which is used as a yellow coating in textile products or detergents.

These materials increase the whiteness of the object by emitting blue light in the white light that was normally reflected from the object. In fact, optical brighteners were able to take the place of azure and other bluing agents (bluing dyes), which were used to neutralize the yellow color of textile goods: since all natural materials such as fabric and detergents have a yellow appearance, which is somewhat unpleasant for the customer's eyes. Fluorescent compounds remove their apparent yellowness and make them white.

Main Export Destinations:

China, Azerbaijan, Turkmenistan, Iraq

Export History:

Up to 500,000 \$

Founded:

1983

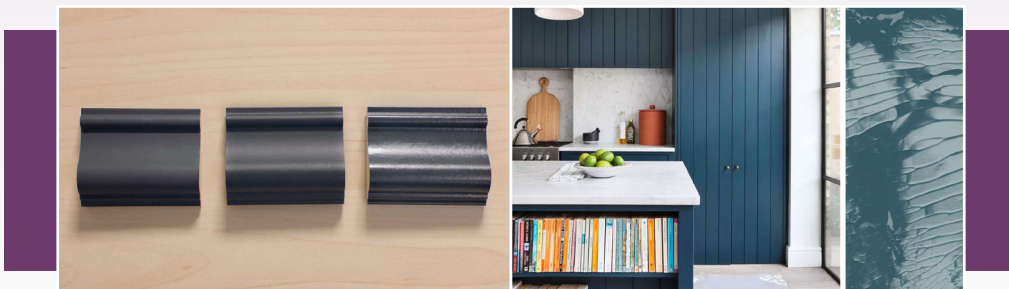
This product is a final B2B customer product.

Technical Specifications:

The materials provided are yellow powder and are crushed and micronized using a mixer crusher and packaged. Color stability and dyeing behavior tests have been performed and FTIR and UV-Vis spectra have also been obtained. Reflectance spectroscopy, dye material stability and suitable color tests have also been done on the product.

Advantages:

- * Appropriate purity along
- * The possibility of supplying a large volume of requested materials as well as competitive prices in the regional market due to the high prices of transportation from China to the countries of the region.



➤ Matting Agent for Paint, Coating and Plastic Based on Surface Modified Nano Silica

◆ Faraz Pooyan Fadak Co.

Product Introduction:

One of the important additives in paint, coating, polymer and plastic industries are matting agents, which are used to adjust the amount of light reflection from the surface of the final film. The presence of particles of this product in the coating formula causes the thickness of the applied coating to decrease during drying and evaporation of the solvent, and the nano-silica particles can be seen uniformly on the surface and reduce the glossiness of the surface by scattering the irradiated light. This is necessary for applications that require reflection and non-transmission of light. In the paint industry, different matte grades are used in the production of matte and semi-matte colors. Currently, the dominant matting agent used in the paint industry is the matting agent based on nano-silica, which is known in the market under the brand name Acematt OK412 and is often supplied by European companies. The company's product is a matting agent based on surface-modified synthetic nanosilica and is equivalent to the mentioned matting agent. This product is used in both solvent and water systems.

Founded:

2019

Application:

- * Production of industrial paints and coil coating in the form of matte and semi-matte colors
- * Production of transparent and matte wood coatings
- * Production of matte polymer parts
- * Production of thin matte plastic films
- * Production of printing ink

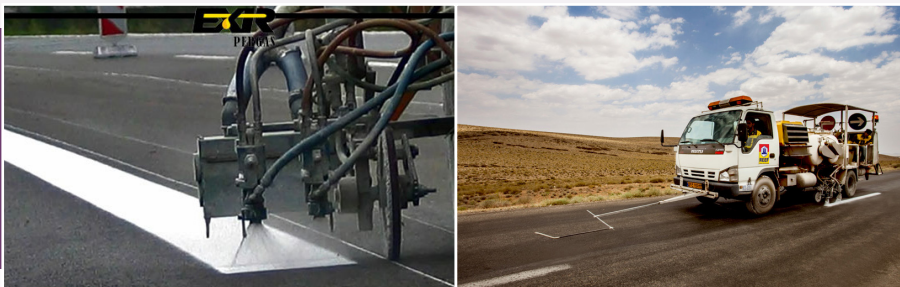
This product is a final B2B customer product.

Technical Specifications:

Relevant identification analyzes such as FTIR, XRD, TEM, SEM, DLS have been carried out by the company and are confirmed. Also, product performance tests, such as the amount of matting at different angles, which have been carried out by the company itself and are approved.

Advantages:

The product is comparable to the most prominent brands and shows a good final gloss.



Application:

Drawing and specifying driving signs on the asphalt

➤ Warm Traffic Paint

🏠 Reef Iran Co.

www.reefiran.com



Product Introduction:

This color can be applied to specify traffic signs and traffic directions on the surface of inner and outer city roads and on asphalt and concrete surfaces, etc. This resin is in the form of thermoplastic, which melts due to heating and becomes cold and permanent by spraying on the surface for a few seconds. This product is used to show traffic signs on the street to guide drivers.

Main Export Destinations:

Turkey, Armenia, Tajikistan, Iraq

Export History:

Between 500,000 - 1,000,000 \$

Founded:

1983

This product is a final B2B customer product.

Technical Specifications:

The first component of this product is resin, which is produced in Akbar company. This thermoplastic resin actually forms the main body of the paint, which plays the role of sticking to the asphalt surface as a result of heating and re-cooling (this part constitutes 40% of the formula). The second component is glass bead, which uses glass with a special mesh and helps the driver in reflecting light and identifying traffic signs (especially at night). In addition, this part increases the physical resistance of the resin against abrasion to some extent (its contribution in the formula is 15%). The third component is the filler, which is made of powdered calcium carbonate and usually makes up 10% of the formula. Another part is plasticizer, which is added to soften and lubricate the resin during execution. Usually, the material of these plasticizers is polyester, which is prepared in this company from PET waste and polyethylene glycol (5% of the formula is made from this part).

Advantages:

High volume production and low prices



Application:

It is used to draw lines or make marks on the asphalt.

➤ **Warm Thermoplastic Traffic Paint**

🏠 Imen Reef Aria Co.

www.imenreefaria.com



Product Introduction:

Warm paint or thermoplastic materials are materials that are prepared in the form of granules and powder. Thermoplastic materials become molten and fluid when heated and are applied to the road surface using appropriate manual or mechanical methods, and after cooling, they become a continuous and sticky film on the surface. In other words, hot thermoplastic paint is a solid material consisting of pigment, extender, resin and glass beads that is applied on the surface after melting. Warm paint can provide more durability and a longer service life against environmental factors such as traffic volume, pavement surface roughness, and environmental erosion. Among the advantages of this product compared to other products based on thermoplastic resins, we can mention the possibility of forming a film with a high thickness, a much longer lifespan and a much shorter drying time. Warm paint is usually applied by pressure spray, machine acrylic (under weight) and extrusion methods and with a thickness between 1500 microns and 3000 microns on the pavement surface (using small, manual or automatic and large equipment). Usually, glass beads (pre-mixed and disintegrating) are used in drawing with warm color in order to create the ability to reflect light and make the drawing visible at night.

Main Export Destinations:

India, Turkey, UAE, Iraq, Pakistan

Export History:

Between 500,000 - 1,000,000 \$

Founded:

2010

This product is a final B2B customer product.

Technical Specifications:

The company's product is a colored resin that has thermoplastic properties and can be used as a traffic color on asphalt. These colors should reflect light and be able to clearly identify road signs and directions for drivers at night. Its other uses are for location signs and sending messages to vehicles along the passage instead of installing roadside signs.

Advantages:

Durability and high strength

International Standards or Permissions:

The necessary tests were carried out in the company under ISIRI standard 3757.



➤ Anti-Electromagnetic Wave Nanopaint

◆ Sina Health Development High Tech Co.

www.nanosina.com



Product Introduction:

This product is a paint substrate coating containing ecological materials. It is used to prevent polluting electromagnetic waves caused by telecommunication towers, home Wi-Fi internet, mobile data internet, wireless phone, jamming, etc. This product is a coating for building walls. The complexities of the technical knowledge of this product occur for two reasons: the complexities of the color formulation and its synthesis method, as well as the complexity of its implementation, which is different from conventional paints and coatings. Among the important things that should be considered in this regard, we can mention how to use multiple layers of this coating along with the proper connection of the earth conductor coating (applying the earth layer before applying anti-wave paint to discharge the load on the coating). These cases take a different form in different applications, which should be investigated: because this coating is applied as a final paint substrate, and efficiency must be done for the final coating system applied in each application.

Founded:

2014

Application:

- ✦ Applying paint on the building walls to prevent polluted waves from entering the building environment
- ✦ Ability to apply on all wall, wood and metal surfaces
- ✦ Can be used in residential, office, hospital, educational spaces and spaces contaminated with electromagnetic waves
- ✦ The ability to control 99.9% of the passage of electric waves caused by power transmission lines
- ✦ Can be used for shield rooms, data centers and passive defense

This product is a final B2B customer product.

Technical Specifications:

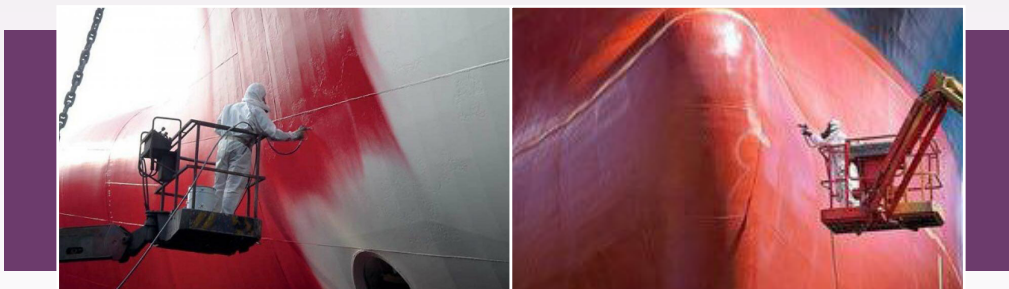
This paint consists of a blue base resin based on acrylic copolymer (a special grade of pure acrylic) and graphite nanoparticles (with a distance between nanometer plates) containing silver nanoparticles placed between carbon plates, next to the carbon block pigment (CB) is formed, which causes the conductivity of the resulting nano coating. In the presence of titanium dioxide (TiO₂) pigment, the resulting color is dark bluish black due to the simultaneous presence of graphite and silver nanoparticles and TiO₂.

Advantages:

- ✦ Product performance warranty up to ten years
- ✦ Absorption of 99.9% of microwaves compared to similar samples

International Standards or Permissions:

- ✦ The approvals of this product include: Approval from Tehran University Antenna Approach Laboratory, Afaq Research Center and SIMT Laboratory in Shanghai, China.
- ✦ In addition, this product has a domestic patent certificate (registered in November 2015).



Application:

This paint is applied on the body of ships and watercrafts and prevents the formation of algae and moss on the watercraft.

➤ Anti-Moss Paint Used in Marine Vessels

◆ Danesh Ara Rang Co.

www.daarang.ir



Product Introduction:

The company's anti-moss paint has different formulations, which include: the main components of resin (based on water-insoluble acrylate resins), solvent (xylene), anti-moss agents based on inorganic zinc (zinc oxide) and organic zinc (organic-metallic zinc complexes - The organic anti-moss agent also plays the role of pigment) thickening agent, and other additives such as extender, filler, etc.

Founded:

2018

This product is a final B2B customer product.

Technical Specifications:

In order for this paint to have a good anti-moss function, zinc must be released from inside the paint texture to the surrounding environment at an appropriate and controlled speed over a long period of 4-5 years. This requires the selection of the appropriate resin and zinc compounds in the formulation, so that it has a suitable controlled progressive erosion rate.

Advantages:

Intermittent release of the effective substance and longevity

International Standards or Permissions:

International Maritime Organization (IMO) approval



Application:

- * Painting hospital equipment
- * Using in laboratories and painting their equipment
- * Covering educational equipment
- * Hospital modular walls
- * Hospital hoteling

➤ **Electrostatic Powder Paint with Antibacterial Properties**

◆ Rangin Nano NewTech Co.

www.nano-newtech.com



Product Introduction:

Powder coatings include pigments and additives dispersed in a film-forming binder (resin and curing agent) that are produced as fine powders. Such powders are sprayed on the desired surfaces with an electrostatic gun. The powder particles are charged in the gun and form a thin sticky layer on the desired surface, and after passing through a furnace due to heat, the powder particles melt. In this way, adhesion and transversal bond are created and a hard, durable and insoluble coating is provided.

These coatings are part of electrostatic coatings. This product has acquired antibacterial properties with the help of nano technology; This means that it is able to destroy all types of bacteria of the E.Coli and Staphylococcus family up to 99.99%. The contact of bacteria with this color leads to their destruction.

Founded:

2018

This product is a final B2B customer product.

Technical Specifications:

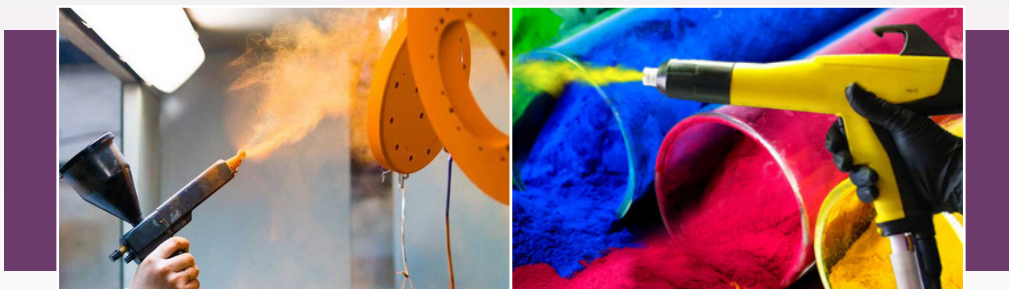
Resin base	Polyester
Spray to piece distance	25 ± 5 cm
Packing	20 kg
Ral number	1.52 kg/L
Adhesion test	GTO

Advantages:

- * The ability to destroy all types of bacteria (especially the E. coli and staphylococcus family)
- * Based on polyester resin
- * In 262 different colors and designs

International Standards or Permissions:

- * Patent certificate of Iran, Switzerland and Canada



Application:

- * On the refrigerator and washing machine
- * Office equipment
- * Aluminum facade of the store building
- * Stove and water heater
- * Metal profiles, etc.

➤ **Corrosion Resistant Electrostatic Powder Paint**

◆ Rangin Nano NewTech Co.

www.nano-newtech.com



Product Introduction:

Corrosion is a natural process that transforms pure metal into a more stable oxide or hydroxide form and imposes huge costs on various industries every year. This process of gradual destruction of materials (usually metals) occurs through their chemical reaction with the surrounding environment and causes the degradation of the effective properties of materials including strength, appearance and permeability to liquids and gases. Depending on the type of metal and its surrounding environment, corrosion-resistant coatings reduce the rate of corrosion. The addition of nanoparticles to coatings improves corrosion resistance through different mechanisms, depending on the type of nanoparticle. Preventing permeability, forming a passive layer, activating inhibition mechanisms, etc. are among these mechanisms. This product is in the group of electrostatic powder paints, which is highly resistant to corrosive atmospheric conditions in the urban environment, as well as impact and physical damage. Flexibility, adhesion and proper hardness are other characteristics of it.

Founded:

2018

This product is a final B2B customer product.

Technical Specifications:

Resin base	Polyester/Hybrid
Spray to base distance	25 ± 5 cm
Packaging	20 kg

Advantages:

- * Excellent surface adhesion
- * High resistance to impact, bending and scratching
- * High resistance to chemicals

International Standards or Permissions:

- * Patent certificate of Iran, Switzerland and Canada



Application:

The desired resin is used as a polyol agent in polyurethane coatings. These polyurethane coatings are used in automotive or protective coatings due to the high mechanical properties caused by this polyol.

➤ Ester-Amide Polymer Dispersants

🏠 Baspar Lia Chemical Co.

www.basparlia.com



Product Introduction:

In all kinds of formulations of paint, resin, paint paste, cosmetic products containing pigment, etc., in order to reduce the interfacial energy (resin matrix interface with particles), it will be necessary to add wetting agent and dispersant. These surface modifiers, due to their amphiphilic nature, are absorbed on the interface of two phases and reduce the interfacial energy. In this way, the tendency of particles to create accumulation is reduced. As a result, it is possible for the carrier (mixture of solvent and resin or any of them) to be absorbed on the interface (wetting function), the particles are separated and dispersed (dispersion function) and finally they remain in stable manner at the place. This product is a brown liquid with a viscosity of 590 mPas.

Main Export Destinations:

Turkey, Armenia

Export History:

Up to 500,000 \$

Founded:

2017

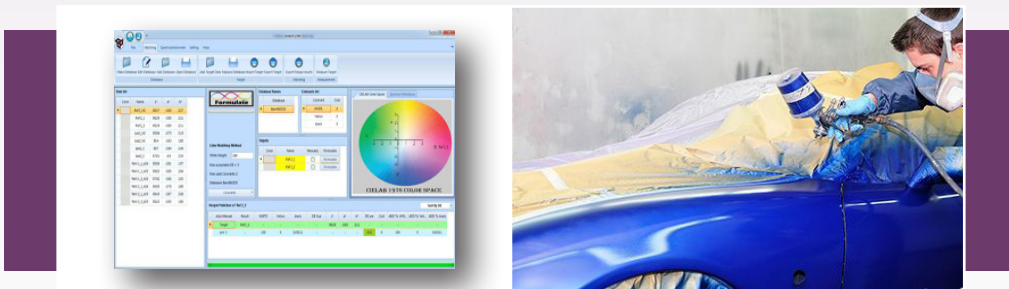
This product is a final B2B customer product.

Technical Specifications:

This dispersant is first formed by the reaction of vegetable fatty acid and self-condensation esterification, and then this substance forms the corresponding amide with multifunctional amines. Customization is absolutely necessary for this product and different variants of this product should be developed for different functions.

Advantages:

- ✧ Proper quality
- ✧ Adequate and fast absorption



Application:

This software can be used to simulate colors in paint factories, printing factories, and even car polishing and painting shops.

➤ **Color Matching Software**

◆ Jahat Co.

www.Jahatcompany.com



Product Introduction:

Color matching software with the brand name “j-match” can be used in the field of color matching in construction and industrial colors. In general, color matching refers to the combination of a series of primary colors with specific proportions to create a color with a specific fam or shade.

Performing similar color operations in some industries such as powder paints, masterbatch and textiles is time-consuming and wastes a lot of raw materials. In addition, due to the complexity of the color mixing process, high experience is needed to reduce the number of these repetitions, and it makes the production operation highly dependent on the experimental tinter; Therefore, there are several reasons that make this process to be done with higher agility and better accuracy, some of these reasons are: Increasing the speed of changes and the need for continuous and rapid changes in the primary colors and final fams, the need for higher accuracy in matching the final color with the target color, and at the same time, the need to make changes in the shortest possible time. Currently, worldwide efforts are being made to make this process easier and accurate by modeling the interaction of light and matter and using complex mathematical equations and solving them with the help of computer software. This software is modeled and implemented using complex mathematical algorithms. The software has the ability to calculate this operation in the shortest possible time, suggest the final formulation to reach the target color and, if needed, modify it according to the type of raw materials and price preference.

Founded:
2015

This product is a final B2B customer product.

Technical Specifications:

One of the features of color matching software is the possibility of predicting several different formulations (if any) and also sorting them based on the final cost price. Therefore, if you use a formulation, you can be sure that the formulation used is actually the cheapest and highest quality formulation possible to achieve the target color.

Advantages:

- ✦ Customization and after-sales support
- ✦ Low price compared to the foreign model

International Standards or Permissions:

Technical approvals have been obtained from companies such as Negin Bespar Giti, Rozin Pooshesh Fam and Hamgen Chemi Tekin.

Second Chapter

Advanced Resins



2nd CHAPTER

First Chapter

Second Chapter

Third Chapter

Advanced Resins

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Sections

Acrylic resins ○
Other polymer resins ○



➤ Pure Soluble Acrylic Resins with Anti-Sedimentation Properties

🏠 Simab Resin Co.

www.simabresin.com



Product Introduction:

D series pure acrylic transparent resins are the product of solution copolymerization of acrylic acid, methacrylic acid emulsion. Also, some special acrylate monomers such as butyl acrylate, acrylonitrile, acrylamide and their derivatives are used in some products. In powder detergents, there is a certain amount of zeolite as a moisture absorber, and its sedimentation on textiles during the washing process can cause the textiles to become rough and lumpy. Adding about 2% of this resin in the formulation of detergent powders prevents this phenomenon and softens the fabric. This product was developed as a replacement for BASF's Sokalan product.

Main Export Destinations:

Turkey, Syria, Iraq

Export History:

Up to 500,000 \$

Founded:

1993

Application:

These resins are used as thickeners in the formulation of detergents such as shampoos, latexes, and facade paints. The slight tendency of this product to sedimentation during storage causes stability of viscosity and regulation of the rheological behavior of the paint.

This product is a final B2B customer product.

Technical Specifications:

The synthesis process of these resins is a semi-continuous reaction of emulsion of primary monomers in water under controlled conditions. The mixture of monomers, in the presence of surface active substances or dispersing substances and water, which is called the primary emulsion, is injected into the reaction reactor charged with water in a controlled manner and under a certain temperature and stirring speed, the living addition polymerization reaction takes place. In the structure of resins of this category, there are a large number of carboxylic acid functional groups, which both interact with mineral structures and absorb these resins on mineral structures, and also provide a suitable solubility for these structures in the aqueous environment. For this reason, one of the comonomers used in this category of products is maleic anhydride. The reactivity of maleic anhydride in radical polymerization processes is very low, and this adds to the difficulty of producing these products.

Advantages:

- ※ Ability to customize
- ※ Proper quality control on manufactured products

International Standards or Permissions:

- ※ Determination of solid percentage based on ASTM D-1259 standard.
- ※ Determination of viscosity based on ASTM D-562 standard



Application:

These resins are used in the production of elastic coatings with high elasticity and low water absorption, as well as sound and temperature insulation coatings used in sheds. They are also used in the production of interior facades and building paints for interior and exterior use, adhesion to cement, asbestos, concrete and other substrates.

➤ **Styrene Acrylic Emulsion Resin**

🏠 Simab Resin Co.

www.simabresin.com



Product Introduction:

Styrene-acrylic based resins, as their name suggests, are prepared from the polymerization of styrene monomer and acrylate monomers and have many uses. It should be noted that these resins are water-based.

Main Export Destinations:

Turkey, Syria, Iraq

Export History:

Up to 500,000 \$

Founded:

1993

This product is a final B2B customer product.

Technical Specifications:

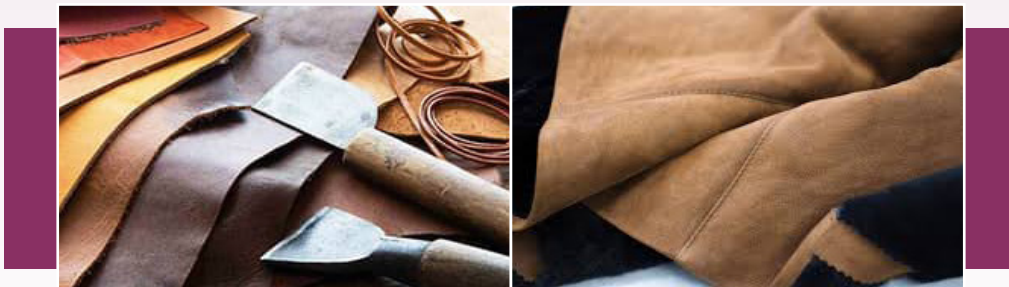
Another prominent feature of this product is its excellent adhesion to XPS and EPS foams. In addition, this resin has good compatibility with all types of pigments and fillers, and its pigmentation properties are significant. The film formed by this product is a soft, clear and colorless film, while it has good color stability in pigment printing. This resin is compatible with all kinds of binders and additives in pigment paste. Printing based on this resin has excellent shear stability, suitable washing and drying stability, and acceptable dry and abrasion resistance.

Advantages:

- * Ability to customize
- * Proper quality control on manufactured products

International Standards or Permissions:

- * Determination of solid percentage based on ASTM D-1259 standard.
- * Determination of viscosity based on ASTM D-562 standard.



Application:

- * It is used to finish leather goods and cover the surfaces of these products. These products contain acrylonitrile in their structure, which creates good adhesion to leather surfaces.
- * Another group of these resins are also used in adhesives and the production of adhesive back labels and tapes.

➤ Acrylic and Acrylic-Vinyl Emulsion Resins

🏠 Simab Resin Co.

www.simabresin.com



Product Introduction:

The investigated products are water-based emulsion acrylic resins, in which all the monomers used in their structure are acrylic and methacrylic monomers, and in some of them, some vinyl monomer is partially included in the resin structure. These resins are produced and supplied as an emulsion in water with a water content of about 50% by weight.

Main Export Destinations:

Turkey, Syria, Iraq

Export History:

Up to 500,000 \$

Founded:

1993

This product is a final B2B customer product.

Technical Specifications:

Almost all the products in this category are very soft and have a low glass transition temperature (T_g) of less than 45°C. The film obtained from these resins are therefore soft, flexible and insoluble in water. This resin can be used well on all kinds of leather as upper leather and also leather for clothes. Due to its adhesion and permeability, this resin can be used alone on the surface of leather. Also, with the addition of ammonia, its viscosity increases and it will be suitable for different uses, such as in split and thin leather. This product creates a soft to medium film and will have good stability against washing with water and solvent after crosslinks are formed. This resin has good wet and dry abrasion stability and is resistant to water. This emulsion resin is dispersed in water.

Advantages:

- * Ability to customize
- * Proper quality control on manufactured products

International Standards or Permissions:

- * Determination of solid percentage based on ASTM D-1259 standard.
- * Determination of viscosity based on ASTM D-562 standard



➤ Thermoplastic Dispersion Polyurethane Resins

🏠 Simab Resin Co.

www.simabresin.com



Product Introduction:

Thermoplastic polyurethane resin dispersed in water is used as a lining layer and top layer in the process of finishing leather goods and covering their surface. The properties of this category of products are much better compared to acrylic base products. In addition, they have a different base. The structure of this product consists of thermoplastic polyurethane chains.

Main Export Destinations:

Turkey, Syria, Iraq

Export History:

Up to 500,000 \$

Founded:

1993

Application:

It is used in the final finishing of leather products.

This product is a final B2B customer product.

Technical Specifications:

In thermosetting resins, due to the fact that after application, cross-links are formed and a polymer network is obtained, infinite molecular mass is obtained and minimum properties can be achieved more easily. But this is not the case in thermoplastic structures; Therefore, thermoplastic polyurethane structures must have a very high molecular mass to provide minimum desirable properties. As a result, the degree of polymerization of this product should be able to increase at least up to 100 units. But on the other hand, achieving such length of chains requires a large increase in viscosity and a decrease in processability. This makes dispersing the polymer structure in a solvent environment to be considered as a solution. If the intended environment for dispersion of polyurethane resin is water, it will be favorable both in terms of price and in terms of health and environment.

Advantages:

- * Ability to customize
- * Proper quality control on manufactured products

International Standards or Permissions:

- * Determination of solid percentage based on ASTM D-1259 standard.
- * Determination of viscosity based on ASTM D-562 standard



➤ Solvent-Based Thermosetting Acrylamide Acrylic Resins

◆ Taak Resin Kaveh Chemical Co.

www.taakresin.com



Product Introduction:

The production base of these products, similar to other polyol and thermoplastic products, includes a set of acrylate monomers, solvents and initiators. Its main difference is the use of acrylamide monomer. The presence of the amide group on the chain structure gives the resin the ability to react with each other at high temperatures (generally above 150°C) and form a three-dimensional polymer network. One-component acrylic resins are oven-thermoset and self-curing, and if they are modified with a small percentage of epoxy resin or melamine formaldehyde, they have excellent adhesion and are used in home appliance coatings as well as can coating.

Founded:

2000

Application:

This resin is used in all kinds of home appliance coatings and can coating.

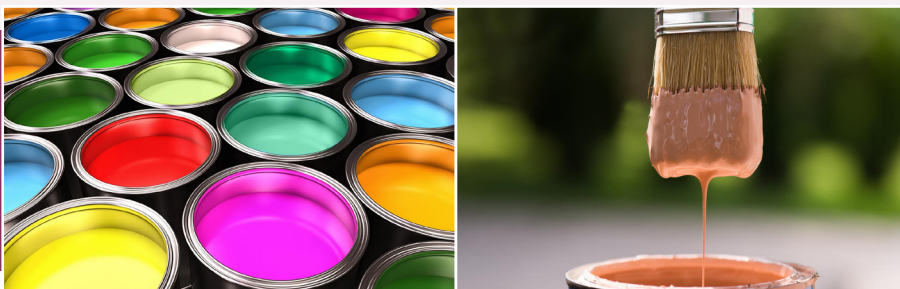
This product is a final B2B customer product.

Technical Specifications:

These systems have many advantages, the most important of which is the structural diversity, due to the variety of monomers that can be used, and the synthetic conditions that result in a wide range of products with different functions and properties. In this category of products, there are functional groups on the resin structure that react with each other at high temperature (generally above 170°C) and form a three-dimensional polymer network. In this type of resin structures, usually less than 5% of the monomers forming the chain is N-methylol acrylamide. This product is a thermosetting resin; That is, in the final coating, the curing reaction occurs. Therefore, achieving a high molecular mass with a uniform distribution (PDI below 1.5) is not so critical for these products. These products are synthesized with a molecular mass of about 30,000 and a PDI of about 2. Although a reaction step of acrylamide and formaldehyde is added to the production process.

Advantages:

Product quality and customization based on customer needs



► Solvent and Solid Hydroxyl Acrylic Resins Crosslinkable with Polyisocyanates

◆ Taak Resin Kaveh Chemical Co.

www.taakresin.com



Product Introduction:

Polyurethanes are one of the most important industrial coatings, ranging from relatively simple glaze-like coatings to high-quality automobile coatings. These coatings are usually the result of the reaction of an alcohol (R-OH) and an isocyanate (R-NCO), and the most common type of urethane coating is a solvent-based and two-part coating, where one component contains polyisocyanate and the other polyol. The most common types of polyol are acrylic polyol, polyester polyol and polyether polyols. Owing to their linear structure, acrylic polyol polyurethane resins have high light resistance, good moisture resistance, and excellent hardness, and are widely used in protective coatings. This material is used as a polyol in combination with isocyanates to produce a variety of polyurethane coatings.

Founded:

2000

Application:

The main use of resin with high solid percentage is in the formulation of paints that require less solvent. This issue is very important due to the strict regulations limiting the volatile components of VOC chemical products in Europe. Reducing the consumption of volatile solvents, especially in the dilution stage before application, is one of the main ways to adjust the formulation to meet environmental standards. In order to reduce the consumption of paint thinner and solvent, a formulation is necessary that, despite having a sufficient amount of resin in the formulation, the paint can be brought to the target viscosity with less solvent.

This product is a final B2B customer product.

Technical Specifications:

With common polyol products to increase the share of resin (solid percentage) of the paint, the hydrogen bonds are increased and the viscosity is greatly increased due to the approach of the hydroxyl groups (especially in polyols with high OH percentage). Therefore, producing polyol resin with high hydroxyl percentage and low viscosity is the solution to this problem. The main challenge in the production of these products, compared to the usual resin with a similar composition of monomers, is to reduce the viscosity while providing the hydroxyl functional group and reactivity within the required range. The results of FTIR, GPC and DSC tests have been obtained.

Advantages:

The possibility of customization by changing the monomer and hydroxyl percentage



Application:

The desired resin is used as a polyol agent in polyurethane coatings. These polyurethane coatings are used in automotive or protective coatings due to the high mechanical properties caused by this polyol.

➤ Hydroxyl Acrylic Resin

🏠 Reef Iran Co.

www.reefiran.com



Product Introduction:

Polyurethanes are one of the most important industrial coatings, ranging from relatively simple glaze-like coatings to high-quality automobile coatings. These coatings are usually the result of the reaction of an alcohol (R-OH) and an isocyanate (R-NCO), and the most common type of urethane coating is a solvent-based and two-part coating, where one component contains polyisocyanate and the other polyol. The most common types of polyol are acrylic polyol, polyester polyol and polyether polyols. Owing to their linear structure, acrylic polyol polyurethane resins have high light resistance, good moisture resistance, and excellent hardness, and are widely used in protective coatings. This material is used as a polyol in combination with isocyanates to produce a variety of polyurethane coatings. This product has the ability to form crosslinks with polyisocyanates with a hydroxyl percentage of less than 3%.

Main Export Destinations:

Turkey, Armenia, Tajikistan, Iraq

Export History:

Between 500,000 - 1,000,000 \$

Founded:

1983

This product is a final B2B customer product.

Technical Specifications:

Acrylic resin is a resin composed of acrylic acid derivatives ($\text{CH}_2 = \text{CH} - \text{OOH}$). The molecular weight of acrylic resins used in urethane coatings is usually low (example: 25000 daltons) and the molecular weight of the final cross-linking film is quite high (example: infinity). The low molecular weight of acrylic resin makes it possible to make a coating with a high solid percentage and medium to low viscosity. Acrylic polyols, like most acrylic resins, are prepared by radical polymerization. Any acrylate monomer containing hydroxyl groups such as hydroxyethyl methacrylate, hydroxybutyl acrylate and hydroxyethyl acrylate can exist in the polymer structure. However, only hydroxylated monomers are not used in the polymer structure and other acrylate monomers are also used.

Advantages:

- ※ High volume production
- ※ Low prices



➤ Hydroxyl Acrylic Resin

◆ Parnian Resin Industrial Group

www.parnianresin.com



Product Introduction:

Polyurethanes are one of the most important industrial coatings, ranging from relatively simple glaze-like coatings to high-quality automobile coatings. These coatings are usually the result of the reaction of an alcohol (R-OH) and an isocyanate (R-NCO), and the most common type of urethane coating is a solvent-based and two-part coating, where one component contains polyisocyanate and the other polyol. The most common types of polyol are acrylic polyol, polyester polyol and polyether polyols. Owing to their linear structure, acrylic polyol polyurethane resins have high light resistance, good moisture resistance, and excellent hardness, and are widely used in protective coatings. This product is acrylic polyol resins with a hydroxyl number of 4.5, which is produced by using acrylate monomers and during the process of radical chain polymerization.

Founded:

2002

Application:

This resin is used as a hydroxyl agent in combination with isocyanate to produce polyurethane.

This product is a final B2B customer product.

Technical Specifications:

Acrylic resin is a resin composed of acrylic acid derivatives ($\text{CH}_2 = \text{CH} - \text{OOH}$). The molecular weight of acrylic resins used in urethane coatings is usually low (example: 25000 daltons) and the molecular weight of the final cross-linking film is quite high (example: infinity). The low molecular weight of acrylic resin makes it possible to make a coating with a high solid percentage and medium to low viscosity. Acrylic polyols, like most acrylic resins, are prepared by radical polymerization. Any acrylate monomer containing hydroxyl groups such as hydroxyethyl methacrylate, hydroxybutyl acrylate and hydroxyethyl acrylate can exist in the polymer structure. Although only hydroxylated monomers are not used in the polymer structure, methyl methacrylate, methyl acrylate, butyl methacrylate, butyl acrylate, acrylic acid, methacrylate acid and styrene monomer are used along with peroxide initiator, depending on the application. The polymer chain structure is formed based on the concentration of monomers and the reactivity of each one at the moment of chain formation.

Advantages:

Proper quality



Application:

This category of resins is used in different uses of air dry coatings such as:

- * Special coatings for all types of plastic and metal surfaces
- * Traffic covers (road and traffic lanes)
- * Facade coatings (keeler on stone, plaster, clay and concrete surfaces)
- * Pool and spray paints
- * Types of laminate adhesives
- * Types of printing inks
- * Varnishing a photo decal

► Solvent-Based Thermoplastic Acrylic Resin

◆ Parnian Resin Industrial Group

www.parnianresin.com



Product Introduction:

In many industries, emulsions of organic substances in water, such as oils, waxes, and solvents, are used for various processes. Among these industries, we can mention metal turning, textile, tanning, etc. However, oil and water emulsions are an ideal place for microbial growth, and for this reason, they spoil in a short time and lose their functional properties. The increase of the microbial population, especially in anaerobic conditions, causes the degradation of emulsions, the creation of odors, the reduction of pH, and the separation of oil and water. Heavy growth of fungi leads to clogging of components, such as fluid transfer pipes, and may also have harmful effects on workers' health. It should be noted that the amount of degradation caused by microorganisms depends on factors such as the type, population, physical condition of the system such as temperature, cleanliness, type of water used and the age of the emulsion.

Founded:

2002

This product is a final B2B customer product.

Technical Specifications:

- * The tests of solid percentage, viscosity, acid number, gloss, impact test, filming, crosscut and wetting are performed in the company's laboratory.
- * Product production is based on the customer's order forms and by measuring the desired properties, prototyping and measuring the properties of the sample, obtaining the formulation, customer approval, production and finally quality control.

Advantages:

Proper quality



Application:

The use of this resin is more common in metal industries and it is most used there. Its other uses are in the production of various furnace coatings, glazed coatings for kitchen and laboratory equipment, can coatings, etc.

➤ **One-Component Solvent-Based Thermosetting Acrylic Resin**

◆ **Parnian Resin Industrial Group**

www.parnianresin.com



Product Introduction:

These resins are made based on acrylate and butylated amide monomers and have self-curing capability at 150 to 200 °C and for 20 to 30 minutes. The final coating that has formed a film under these conditions has a high gloss and has very good mechanical characteristics. Also, due to the reticulation of the coating, they have a very high resistance to detergents and solvents. In order to improve the final properties, auxiliary resins such as amino resins or epoxy resin can be used in a small amount. Although it is better to test their compatibility before use.

Founded:

2002

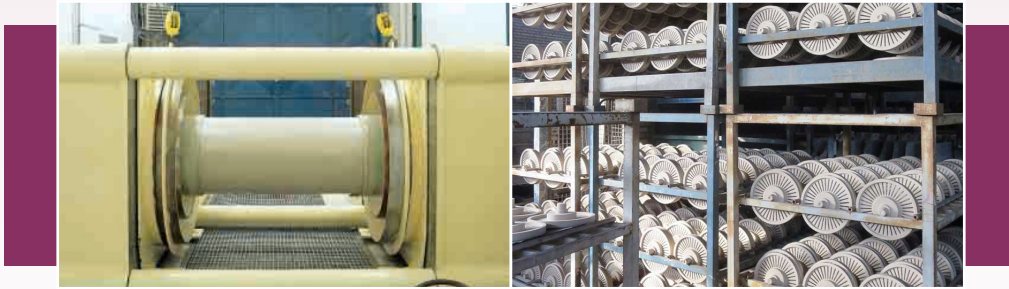
This product is a final B2B customer product.

Technical Specifications:

In this product, the hydroxyl group is cured with isocyanate in the environment: because the hydroxyl groups react with butylene and form a network. The solvent used is normal butanol and condensation is done between amine monomers.

Advantages:

Proper quality



► Technical Skills of COLDBOX Resin Production

Used in Casting Industry

◆ Maan Polymer Co.

www.maanpolymer.com



Product Introduction:

The product is a brown liquid and it is in two parts. This product is added at the place of consumption at a ratio of 1:1 and 1:6 to 2 percent of the weight of sand. The two requested components are phenolic resin and urethane resin. If stored correctly, the product can be used up to 6 months after production (away from moisture and heat). The viscosity of the product is 0.16 Pa.S.

Founded:

2017

Application:

The produced resin is used in the casting industry, especially the casting of delicate parts (such as car parts) using the cold box method. This product has no other alternative.

This product is a final B2B customer product.

Technical Specifications:

The most important product test is the instant bending strength, which the company has passed. The product has passed the strict standards of car parts manufacturing companies, and this company has the approval of Iran Khodro Aluminum Casting and the approval of TractorSazi Casting. Other analyzes such as determination of viscosity, molecular weight, residual monomer and physical and mechanical properties have been carried out by the company.

Advantages:

It can be said that the company is the only producer of this product Iran and has approval for consumption from the automotive industry and has produced the product using domestic materials, which, despite adding complexity, reduces the total price.



➤ Unsaturated Polyester with Terminal Carboxylic Acid Functional Group for Use in SMC and BMC Processes

◆ Farapol Jam Co.

www.farapol.com



Product Introduction:

In composite molding processes, two types of sheet and bulk molding products (Sheet molding compound (SMC)/Bulk molding compound (BMC)) are known for use in making parts with heat and press. The process is such that pre-impregnated fibers with resin along with initiator and accelerator and other additives are produced in the form of sheet or block. The resin used in these products are mainly epoxy, unsaturated polyester or vinyl ester. Also, the reinforcing fibers in these composites are types of glass fibers with specific length and diameter. These products may be stored in the warehouse for several weeks or months from the time of production to the time of molding; Therefore, the main difference of this type of composites with other methods in which fibers and resin are mixed in place is that the viscosity of the resin should be such that it does not flow during storage. In addition, the low viscosity at the time of molding also causes the fiber resin to release and exit the machine under the pressure of the press. However if the viscosity of the polymer component is very high, there will be a problem of not flowing and filling the mold during molding.

Main Export Destinations:

Russia, Turkey, Qatar, Oman, Belarus, Armenia, Uzbekistan, Iraq

Export History:

Between 500,000 - 1,000,000 \$

Founded:

2007

Application:

Unsaturated polyester resin has been developed for composite molding processes by bulk and sheet methods.

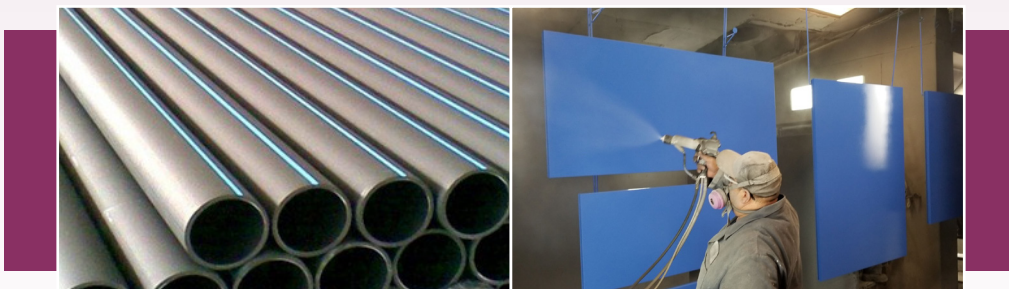
This product is a final B2B customer product.

Technical Specifications:

In addition to resin, other materials are used: styrene as an active solvent, fibers, a thickening agent, various fillers, additives such as dispersing and wetting agents for powders and pigments, mold release agents, shrinkage improvers, and possibly pigments. will be Fine tuning of these components is itself important in SMC/BMC fabrication. Increasing the amount of filler reduces the price and sometimes improves some properties; But on the other hand, it increases the viscosity. Although styrene can reduce viscosity; But its large amount causes fragility and loss of mechanical properties of the product. Although the design of the formulation of such products is mainly done by controlling its amounts and components, the thickening mechanism is one of the most important conditions for the production of BMC/SMC, in which the type of resin and its structure are important. The synthesis process of these resins is two-step, which is different from ordinary unsaturated polyester resins. In the first step, polyester resin with minimum acid number and hydroxyl end functional groups should be formed, and then the temperature decreases and by introducing dicarboxylic acid compounds, carboxylic acid end functional groups are formed. A variety of functional tests such as measuring the softness point, elasticity, acid number stability, etc. have been measured by the company.

Advantages:

- * High scale production
- * Strong quality control
- * Low price compared to competitors



Application:

This resin is used to make FRP composites and pipes and tanks. It is also used to produce gel coat or coatings that are exposed to corrosive and severe conditions.

➤ **Vinyl Ester Resin**

🏠 Reef Iran Co.

www.reefiran.com



Product Introduction:

Vinyl ester resins based on bisphenol A consist of a diglycidyl ether structure that has reacted with unsaturated monoacids (usually acrylic acid) at both ends. In this way, this resin has unsaturated functionality at its two ends. This resin is mixed with a reactive diluent, and this reactive diluent is usually vinyl monomers and specifically styrene. The curing process is done through the chain polymerization reaction of unsaturated agents. Before use, the investigated resin is mixed with mainly peroxide initiators and accelerators and is cured in a limited time. Vinyl ester resin is cheaper than epoxy; However it is more expensive than unsaturated polyester.

Main Export Destinations:

Turkey, Armenia, Tajikistan, Iraq

Export History:

Between 500,000 - 1,000,000 \$

Founded:

1983

This product is a final B2B customer product.

Technical Specifications:

In terms of functionality and physical-mechanical properties, this resin has average properties between unsaturated polyester and epoxy. The solid percentage of this product is measured based on the ASTM D1259 standard, which is usually more than 50%. The gel time also varies depending on the final application; But it is usually less than 30 minutes. In addition, the tensile strength (based on ISO 527-2 standard) and bending strength (based on ISO178 standard) are more than 50 MPa and 100 MPa, respectively. The final color of the product should be measured by Gardner's standard and depending on the precision of the synthesis method and the selection of suitable factors, it can be reduced to less than 1, which is reduced to about 2 in this product.

Advantages:

Production in high volumes with reasonable price and quality

International Standards or Permissions:

- * ISO178 standard
- * ISO 527-2 standard



Application:

The main applications of these resins are traffic coatings on the asphalt surface, adhesives for road signs and traffic varnishes.

➤ Cold Plastic Resins

◆ Parnian Resin Industrial Group

www.parnianresin.com



Product Introduction:

These resins are known as two-component resins and have unique capabilities. Their molecular structure is such that it increases the ability to absorb pigment and they have high pigmentability, and due to having a suitable viscosity, they have a suitable flowability during color making and application, and they are easily applied and create a uniform coating.

Compared to solvent-based resins, cold-plast resins are much more resistant in terms of abrasion, although they are more expensive than solvent-based resins. This category of resins has more smell than other acrylic resins due to the type of monomers and their chemical structure.

Founded:

2002

This product is a final B2B customer product.

Technical Specifications:

The polymerization process of these resins has no solvent and a prepolymer is created with an inappropriate sharing reaction with vinyl bonds. In this process, monomer acts as a solvent and inhibitor and accelerator are used. The initiator used is benzoyl peroxide, which is used during the application of resin. The inhibitor used has a quinone group (methylethylene hydroquinone). Mercaptan is also used as a chain transfer agent.

The molecular weight of the prepared prepolymer is about 3 to 4 thousand.

Advantages:

Proper quality



Application:

This substance is used as an additive in various formulations of paint, resin, paint paste, cosmetic products containing pigment, etc.

➤ Acrylic Polymer Dispersants, without Strict Structure Control

◆ Baspar Lia Chemical Co.

www.basparlia.com



Product Introduction:

In all kinds of formulations of paint, resin, paint paste, cosmetic products containing pigment, etc., in order to reduce the surface energy of the interface between the resin matrix and the particle, it will be necessary to add a wetting agent and a dispersant. These surface modifiers, due to their amphiphilic nature, are adsorbed on the interface of two phases, and by reducing the interfacial energy, they reduce the tendency of particles to create aggregation. As a result, they provide the possibility for the carrier (mixture of solvent and resin or any of them) to be absorbed on the interface (wetting function), the particles are separated and dispersed (dispersion function) and finally remain stable in the carrier (stabilization function). These types of materials are classified as additives. Additives are substances that are included in very small amounts (usually less than 3% of the total weight of the final formulation) in the formulation and have a large effect on the final properties. The investigated product is styrene-acrylic based polymer dispersants. The pH of this product is 5.7 and it is soluble in water.

The main structure of the polymer used in this product is a copolymer structure of styrene monomers, acrylic acid and other auxiliary monomers such as butyl-acrylate, etc.

Main Export Destinations:

Turkey, Armenia

Export History:

Between 500,000 - 1,000,000 \$

Founded:

2017

This product is a final B2B customer product.

Technical Specifications:

The synthesis mechanism of these structures is radical polymerization. The basic complication in the field of radical copolymerization, especially when the variety of monomers in the structure is high, is that in these reactions, unlike staged and live polymerization reactions, the chains are alive in a time span of much less than 1 second. That is, all the kinetic equations of a polymer chain are true according to the concentration of materials at the moment of formation of the same chain. This product is developed for water environments and should be optimized and customized for different applications and different pigments. Product performance is similar to "Joncryl 678" foreign sample.

Advantages:

Reasonable price



Application:

It is used in the production of various colors and printing inks on fabric or leather.

► Paint Paste with Dispersant Synthesis

◆ Baspar Lia Chemical Co.

www.basparlia.com



Product Introduction:

In the process of production of cover color and printing inks, it is usually done in this way that a mother color or mill base is prepared. Mill base contains almost all pigments and fillers, some additives, resin and if necessary solvent. The high viscosity of the mother color makes the process of grinding and dispersion of particles to be carried out with higher efficiency and in a more favorable way. In many cases, instead of pigment, color paste is purchased, which is the same as mill base, which has a small amount of resin and a very large amount of pigment. The color paste is then mixed with the rest of the components such as resin and solvent at the place of use and the desired coating is prepared. In this way, the consumer company will not need to grind or disperse the pigment and can achieve the desired coverage with a simple mixing. The same color process is done either at the request of the consumer and at the stage of color paste production, or it is done by the consumer himself by mixing a certain ratio of several color pastes. This product is made and marketed in original and color matched colors.

Main Export Destinations:

Turkey, Armenia

Export History:

Between 500,000 - 1,000,000 \$

Founded:

2017

This product is a final B2B customer product.

Technical Specifications:

Depending on the final application, the color paste should have a proper granularity. In applications such as decorative and construction coatings, etc., it is usually sufficient to achieve a grain size below 50 microns. In cases such as high-gloss coatings (such as car coatings), cosmetics (such as nail polish) and printing inks, achieving a grain size below 5 microns will be appropriate. The color paste consists of several types of pigments, resins and regulators of rheological properties and types of dispersants and wetting agents, etc.

Advantages:

Reasonable price



► Polyol Polyester Containing Cellulose Nanofibers for the Production of Hard Foam

◆ Baspar Touse Yaran Co.

www.btyco.ir

BTY
Quality is our benchmark

Product Introduction:

In this product, new types of polyols are synthesized based on natural materials and then they are formulated in order to prepare rigid insulating polyurethane foams with special physical and mechanical properties. This product uses types of polyols based on natural materials as a complete replacement for polyether polyols in the production of insulating polyurethane foams. In this process, a special synthetic system and nano cellulose (as a reactive raw material) have been used. In this way, with the participation of nano cellulose in the polymerization process, it is possible to prepare natural base polyols with appropriate hydroxyl number and viscosity to prepare hard polyurethane foam with appropriate properties.

Founded:

2015

Application:

This product is used as cold insulation in oil, gas and petrochemical industry.

This product is a final B2B customer product.

Technical Specifications:

One of the ways to improve the mechanical-thermal properties of the resulting foams is to introduce very low percentages of nano cellulose and modified lignin fibers into natural base polyols. These materials have suitable functional groups as well as proper distribution and distribution in the polyurethane substrate, and for this reason, they have received attention.

This product has three special functional aspects:

1. Due to the synthesis of special nanopolyol and its polymerization
2. In terms of the synthesis of nano polyol with different specifications (in three different grades with different branches and functional groups)
3. From the aspect of formulation with different additives, catalysts to produce foam with isocyanate.

It should be noted that this product is synthesized in several processes (at least two steps) and formulated in several steps. One of the advantages of this method is that this process is not sensitive to water or humidity. Nano cellulose is also used as a suspension in water.

Advantages:

- High strength of the product at a reasonable price

International Standards or Permissions:

The special function of the product is the preparation of rigid insulating polyurethane foams with properties according to the (strict) ASTM C591 standard.

Third Chapter

Advanced Adhesives



3rd CHAPTER

First Chapter

Second Chapter

Third Chapter

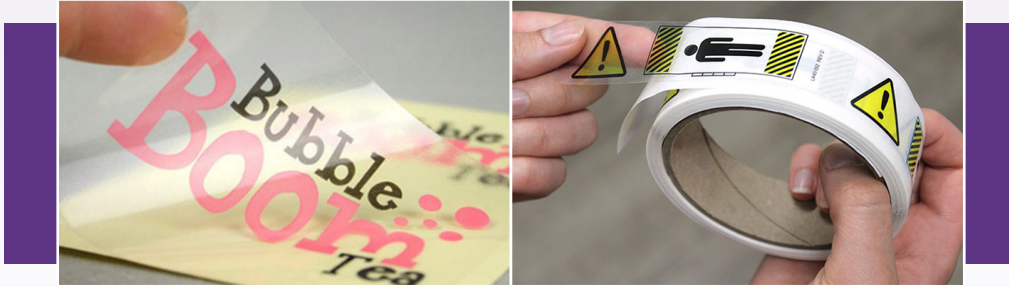
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Hot-Melt Adhesives ○

Pressure-Sensitive Adhesives ○

Other Polymer Adhesives ○



Application:

O.P.P label hot melt adhesive is used in the food industry to connect the label to the bottle at the end of the packaging lines for all kinds of drinks, especially soft drinks, non-alcoholic malt beverage, yogurt drink (doogh/ayran) and mineral water. Also, hot-melt adhesives are used for gluing all kinds of adhesive back labels (paper, shell and metallized). In addition, these adhesives are used to connect different layers of diapers and sanitary napkins (for example, in 7 layers of baby diapers). They use different types of construction adhesives, to fix sanitary napkins to clothes and position adhesives to create elasticity in dapers.

➤ SBC-Based Hot Melt Adhesive

◆ Almas Fanavaran Giti (GITACE) Co.

www.gitace.com



Product Introduction:

For many reasons, hot melt adhesives have a unique place among other adhesives. These reasons include: creation of powerful connections, high performance speed, no wastage and controllability, reduction of production time and space, no environmental pollution and risk of fire, connection strength and its durability in processes. The main ingredients of this type of adhesives include: SBC copolymer, tackifier to adjust rheology, plasticizer, waxes and antioxidants.

This product is a final B2B customer product.

Technical Specifications:

These adhesives have properties such as maintaining adhesion and no pill loss in the long term, uniformity of the adhesive on surfaces, maintaining adhesion in the long term and the ability to be used on all types of surfaces.

Advantages:

- * High production volume
- * High quality while keeping the price low



Application:

These adhesives are used to connect hard surfaces (low surface energy), frozen surfaces (low temperature) and to connect non-polar surfaces (polyethylene) to Tetrapak (straw glue) in all kinds of drinks in production lines.

➤ Hot Melt Adhesive Based on Polyolefins

◆ Almas Fanavaran Giti (GITACE) Co.

www.gitace.com



Product Introduction:

Hot-melt adhesives based on polyolefin (POE, POP, APAO) are used in sticky straw and cap-fix industries or gluing container lids. The reason for using this type of polymers is that in addition to its non-polar nature compared to other bases (EVA, SBC), they are more compatible with low energy surfaces and frozen surfaces. It should be noted that juice and drinks are mainly kept at a low temperature and cold; Therefore, in addition to high adhesion at the time of application, the glue must maintain its adhesion properties when exposed to cold.

This product is a final B2B customer product.

Technical Specifications:

- * Appropriate cold resistance
- * Maintaining adhesive flexibility at low temperatures
- * Adhesion in cold and hot environments (-5 to +75)
- * Appropriate machinability (high speed, no burning and blockage of nozzles and packaging lines during use)
- * High operating speed (low open time: 3-6 seconds)
- * Reduce consumption grammage
- * Very high speed in production lines (24 thousand envelopes per hour)
- * Adhesive resistance against tension

Advantages:

- * Lower price (20%-30%) compared to foreign samples
- * Higher adhesion due to the compatibility (coupling) of adhesives with non-polar surfaces



Application:

EVA based adhesives are used in ceramic tile and food packaging industries.

➤ EVA-Based Hot Melt Adhesive

◆ Almas Fanavaran Giti (GITACE) Co.

www.gitace.com



Product Introduction:

This family of adhesives has an older and more well-known formulation. The main ingredients of this type of adhesives include: EVA copolymer, tackifier resin and aromatic or paraffinic hydrocarbon and antioxidants.

This product is a final B2B customer product.

Technical Specifications:

- * Various formulations of adhesives for packing and connecting all kinds of surfaces
- * Maintaining adhesive flexibility at low temperatures
- * Adhesion in cold and hot environments (-5 to +75)
- * Appropriate machinability (high speed, no burning and blockage of nozzles and packaging lines during use)
- * High operating speed (low open time: 3-6 seconds)
- * Reduce consumption grammage
- * Adequate penetration in the surface
- * Suitable SAFT in hot lines
- * Droplet formation of adhesive on the surface and lack of spreading on the surface
- * Hot-Tack suitable for specific level

Advantages:

High quality at a competitive price



➤ Hot-Melt Adhesive Edge Tape or Adhesive Edge

◆ Baspar Gostar Ariya Engineering Co.

www.baspargostar.com



Product Introduction:

Hot melt adhesives are adhesives in which the heat factor plays the role of lubrication and the ability to apply adhesives on different surfaces. These adhesives are classified into two categories: pressure sensitive and non-pressure sensitive. Due to their viscoelasticity state and tackiness, pressure-sensitive adhesives are capable of re-adhesion at room temperature after applying and cooling down due to the application of small pressure. But the pressure-insensitive adhesives are completely dry after cooling and due to separation, the two substrates cannot be re-glued due to applying pressure.

This glue is pressure insensitive.

Main Export Destinations:

Georgia, Iraq, Afghanistan

Export History:

Up to 500,000 \$

Founded:

2008

Application:

The use of pressure-insensitive hot melt adhesives is wide and can be used in the automotive industry (Filter adhesive, carpet adhesive, lamp adhesive), bookbinding, sticky straw, adhesive (sticky) edge (gluing the edges of wood and MDF) and all kinds of packaging industries (paper napkins, light and heavy cartons, etc.).

This product is a final B2B customer product.

Technical Specifications:

These adhesives are composed of three main components, including polymer, which is the factor of strength (cohesion), resin, which is the factor of adhesion (adhesion), and lubricant (wax), which is the factor of flexibility, along with additives such as stabilizers, fillers, and other components.

The features of this adhesive include the following:

- * Application on all kinds of polyester tapes, melamine tapes, tapes with very thin edges and wooden strips.
- * The possibility of performing cutting, drilling and grating operations immediately after leaving the adhesive edge machine
- * Medium viscosity and high initial strength suitable for adhesive edge devices
- * Optimum melting point

Advantages:

- * One-component product
- * Reasonable price



Application:

- * Sticky straw adhesive is used to stick drinking straws, which are usually 100 to 200 ml, to the paper or PP body of the drink.
- * As the name suggests, bookbinding adhesive is used to bind books.

► Hot-Melt Adhesive for Sticking Straws and Bookbinding

◆ Baspar Gostar Ariya Engineering Co.

www.baspargostar.com



Product Introduction:

Hot melt adhesives are adhesives in which the heat factor plays the role of lubrication and the ability to apply adhesives on different surfaces. These adhesives are classified into two categories: pressure sensitive and non-pressure sensitive. Due to their viscoelasticity state and tackiness, pressure-sensitive adhesives are capable of re-adhesion at room temperature after applying and cooling down due to the application of small pressure. But the pressure-insensitive adhesives are completely dry after cooling and due to separation, the two substrates cannot be re-glued due to applying pressure.

This glue is pressure insensitive.

Main Export Destinations:

Georgia, Iraq, Afghanistan

Export History:

Up to 500,000 \$

Founded:

2008

This product is a final B2B customer product.

Technical Specifications:

These adhesives are composed of three main components, including polymer, which is the factor of strength (cohesion), resin, which is the factor of adhesion, and lubricant (wax), which is the factor of flexibility, along with additives such as stabilizers, fillers, and other components. In most cases, two or more types of polymers, resins and softeners along with other additives are used in the formulation of these adhesives. The number of components of these adhesives varies from 5 to 10 different components. These adhesives have different formulations. The difference in formulations is based on quality requirements (required mechanical properties after cooling), surfaces to be bonded, bonding speed, cooling speed, Cohesion and Adhesion in molten state, workability, bonding environment and performance during the lifetime of the adhesive, etc. The capabilities of this glue include: high production speed, ease of application and quick drying.

Advantages:

- * Competitive price
- * Good quality



➤ Hot Melt Adhesive for Car Filter Application

◆ Aria Baspar Pooshesh Partak Co.

www.aria-baspar.ir



Product Introduction:

It is a type of thermoplastic adhesive that is usually sold in the form of granules for various purposes. The common feature among these types of adhesives is that they all need to be heated during use. Hot melt adhesive changes shape from solid to liquid at a certain temperature (according to the type) and turns to solid again after the temperature drops. Hot melt adhesive is used in various industries and has many advantages over solvent-based adhesives, including the removal of chemical solvents.

Founded:

2016

Application:

Hot melt adhesive is widely used to connect plastics, wood, paper, ceramics and metals. The main use of this glue is to connect the car air filter.

This product is a final B2B customer product.

Technical Specifications:

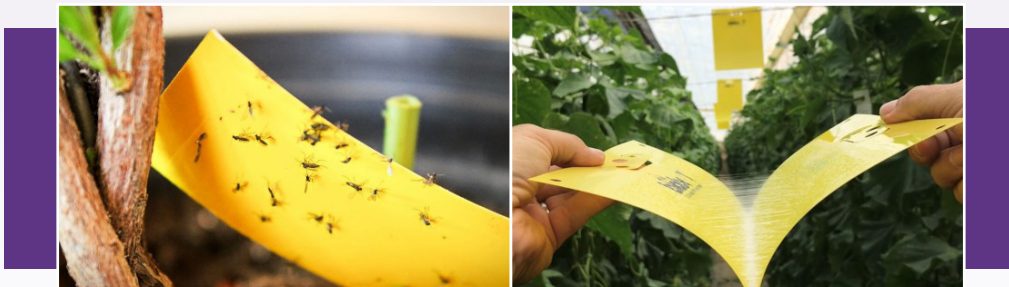
The appropriate adhesive design parameters for car air filter adhesive include: thermal stability at about 120°C, high drying and setting speed, and short opening time.

Advantages:

High quality at a competitive price

International Standards or Permissions:

- * The results of the light car air filter test including: efficiency test, sealing test, temperature limit test, air flow limit test, pressure difference and capacity test, have been obtained.
- * ASTM D3236
- * ASTM D4497
- * ASTM E28



► Pressure-Sensitive Adhesives with High Durability for Use in Biological Traps to Attract Insects

◆ Radin Plast Kavan Co.

www.radinplast.com



Product Introduction:

Pressure-sensitive hot melt adhesives are formulated based on different polymers due to their variety of applications. Due to having very low TG, these adhesives have surface adhesion at ambient temperature. This property classifies them as pressure-sensitive adhesives and in an independent group from the rest of the adhesives. They can be classified into water-based, solvent-based, and hot-melt pressure-sensitive adhesives based on their polymer base or physical properties.

Founded:

2013

Application:

One of the important applications of pressure-sensitive adhesives (especially the hot-melt type), due to their high surface adhesion, is to use them in making traps to attract insects and vermin (such as mice).

This product is a final B2B customer product.

Technical Specifications:

These types of adhesives, which are used as insect traps, will have different characteristics based on the polymer base used in their tackifier and plasticizer. In all of them, maintaining long-term adhesion properties, high adhesion strength, suitable thermal resistance, and lack of sagging in environmental conditions are completely common.

In order for pressure-sensitive adhesives to attract insects to be able to maintain the adhesive properties in different weather conditions for a long time (nearly one month), polybutene or poly-isobutene with low molecular weights are generally used as the main base of such adhesives. Due to its very high adhesion property and very low thermal resistance, in order to increase strength and adhesion, they use other polymer compounds such as thermoplastic rubbers, butyl rubber, etc. along with hydrocarbon resins and sometimes plasticizers.

Advantages:

- * High quality
- * High production volume



Application:

Butyl-based pressure-sensitive adhesives use recycled butyl rubber materials, cured with sulfur compounds, in double-glazed window and door manufacturing industries. In addition, they are used as pressure-sensitive adhesives for use in polyethylene foams to insulate car doors.

► Pressure Sensitive Adhesives Based on Butyl Rubber

◆ Farafoam Industrie Co.

www.farafoam.co



Product Introduction:

These adhesives include Butyl IIR rubber or Polyisobutylene-PIB. Butyl rubber (IIR) is produced by cationic copolymerization of isobutylene in solution with a small amount of isoprene (up to about 3%). It was produced and used industrially since 1942. This rubber is used in cases where low permeability against oxygen, ozone and chemicals is desired. This tire is the cheapest special tire.

Founded:

2004

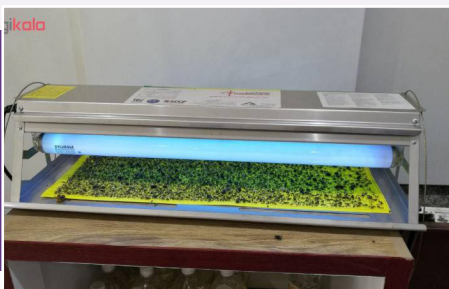
This product is a final B2B customer product.

Technical Specifications:

In the process of making these adhesives, 7-8% of butyl rubber is used as a raw material. Other materials used in the formulation of these adhesives include: paraffin oil, poly-isobutene, filler, hydrocarbon resins, and finally 45% of recycled rubber is used in the formulation of these adhesives. In the manufacturing process of all these products, first the powdered butyl rubber is charged inside the kneader, then it is placed at a temperature of 180 °C for two hours by adding additives for devulcanization, and finally it is rolled.

Advantages:

- * Thermal resistance of adhesives, tolerance of high and low temperature conditions
- * Adequate viscosity and workability of the glue
- * The amount of penetration and maintaining proper adhesion and flexibility in different temperature conditions



➤ Adhesive Insect Catcher with Pressure-Sensitive Adhesive Formulation

◆ Afand Shimi Co.

www.afandshimico.com



Product Introduction:

The product offered by the company is a new generation of mouse and insect traps. This product attracts mice and live insects by means of a layer of pressure-sensitive polymer compound (in the class of pressure-sensitive hot-melt adhesives) that is coated on a surface (usually paper) and the edible smell emitted from the glue. When these organisms pass through the compound layer, it traps and destroys them.

Founded:

1998

Application:

As mentioned, the application of the product is to trap small insects and mice by means of pressure-sensitive adhesives.

This product is a final B2B customer product.

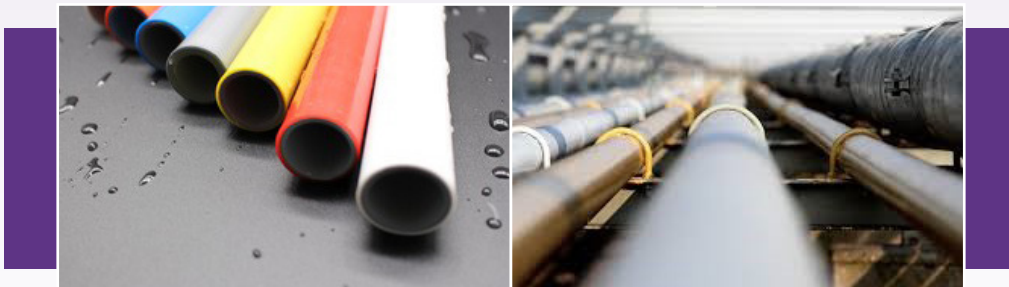
Technical Specifications:

These traps catch mice and insects. When they pass over the sticky compound (pressure sensitive), they stick to this layer. To trap mice, a thin layer of this polymer compound is placed on a glossy cardboard or laminated with cellophane. Then we coat the glue in a molten state on it, after folding the thick kraft cardboard on each other (in a way that they do not stick to each other), we put them in the plastic cover and finally the carton is packed.

For insects, in addition to creating a thin layer of compound, a device with a UV lamp has been designed, which attracts insects and finally traps them on this sticky layer. The insect attraction device is similar to the devices that pass the electric current of the metal nets placed next to the UV lamp, and the only difference is the use of a sticky layer coated on the paper, which traps them on the sticky surface of the paper instead of the electric current.

Advantages:

Reasonable price



➤ Polymer Interlayer Glue (TIE LAYER)

◆ Kimia Javid Sepahan Co.

www.kimiajavidco.com



Product Introduction:

Despite having many strengths, polymer pipes also have weaknesses that limit their use in special engineering applications. Nowadays, by designing multi-layer pipes, with a metal layer, manufacturers have tried to use the strengths of polymer and metal at the same time and also to cover their weaknesses. Polymer/metal multilayer pipes have properties such as impermeability against oxygen and high dimensional stability due to the metal layer in their structure. The presence of the polymer layer causes features such as long life, chemical resistance, corrosion resistance, easy processability, etc. in these pipes. Pipes with multi-layer structure including polyethylene or mesh polyethylene as the outer layer and aluminum or steel metal layer as the central layer are special products in piping systems. By improving the thermal and mechanical properties, these pipes are used for new applications that require high temperature and pressure.

Main Export Destinations:

China, Turkey, Malaysia, Azerbaijan, Uzbekistan, Afghanistan

Export History:

Between 1,000,000 - 10,000,000 \$

Founded:

1999

Application:

This adhesive is designed for use in two main cases:

1. Use as a layer connecting aluminum to PEX in pipes
2. To be used in the coating of steel pipes between the layer of polyethylene and epoxy coated on the pipe.

This product is a final B2B customer product.

Technical Specifications:

The polymer and metal layers in this structure are incompatible with each other and show weak adhesion to each other. To solve this problem, it is necessary to use interlayer adhesives to promote adhesion and improve compatibility between layers. These adhesives, having dual nature and functionality, are able to establish a strong bond between polyolefin (PE or PEX) and metal (AL or steel) layers. Improving the adhesion of different layers by using interlayer adhesives allows the production of pipes with optimal properties.

Advantages:

High quality at a competitive price

International Standards or Permissions:

ASTM 1281, ASTM1282



➤ Two-Component Solvent-Free Polyurethane Adhesive

in the Printing and Packaging Industry for Laminating All Types of Wrappers

◆ Taak Resin Kaveh Chemical Co.

www.taakresin.com



Product Introduction:

Polyurethane adhesives consist of three main parts: polyol, isocyanate and other possible additives necessary for curing. The company's solvent-free laminate adhesive is a two-component polyurethane adhesive based on MDI (methyl diphenyl diisocyanate as the (aromatic) isocyanate component) along with a polyol (which is usually a polyether polyol). The lamination process is widely used in the production of packaging components such as wrappers and coatings. This process is generally used to bond dissimilar pre-manufactured or in-production layers. Apart from natural adhesives such as starch, protein, waxes, etc., which were generally used in the past and are now not used industrially, lamination adhesives are generally based on polyurethane.

Founded:

2000

Application:

This adhesive is used in the manufacture and installation of insulation plates, decorative plates and other sandwich parts and has a good performance as an assembly adhesive. It is suitable for strong and permanent bonding of polar polymers such as ABS, PC, SMC and PVC, wood, foam, textile, aluminum and steel with paint and lining. Non-polar polymers such as PP and PE can also be glued with this adhesive after corona preparations.

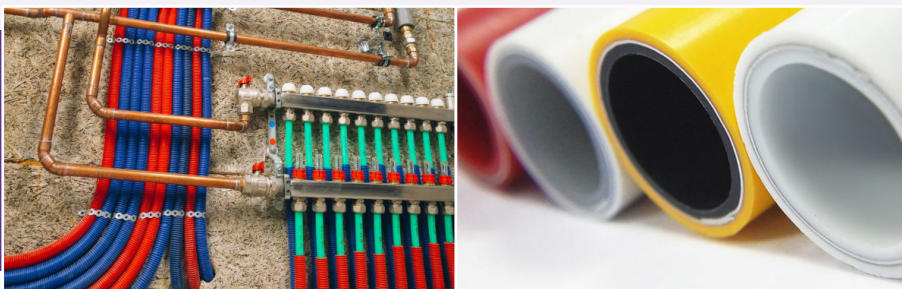
This product is a final B2B customer product.

Technical Specifications:

In summary, the manufacturing process of this product is as follows: Part 1 includes the mixing of polyether polyol with castor oil and part 2 includes the preparation of MDI prepolymer under neutral gas. In prepolymer preparation, the reactive ratio of MDI and polyether polyol is adjusted according to the molecular weight and isocyanate functionality of the prepolymer.

Advantages:

High quality at a competitive price



► Thermoplastic Adhesive with the Ability to Connect Incompatible Layers (ADMER-IR)

◆ Polymer Pishrafteh Dana Co.

www.polymer-pishrafteh.ir



Product Introduction:

Polymer adhesives include modified polyolefins with functional groups that can bond with a wide range of polyolefins, polyamides, ethylene vinyl alcohol, polyester, polycarbonate, polystyrene and metals. These adhesives are used as a compatibilizing layer in multilayer structures, in order to combine the properties of different materials, such as resins resistant to gas and moisture penetration.

Founded:

2013

Application:

The product is a type of thermoplastic adhesive with the ability to properly connect dissimilar layers such as polymer/metal. This product is used as an intermediate layer in a wide range of applications, including film, sheet, tube, multilayer pipes, pipe coating, etc., and to bond incompatible layers together, such as aluminum/polyolefin, polyvinyl alcohol/polyolefin, etc. Industrial applications of these adhesives include: production of multi-layer plastic pipes, coating of steel pipes, production of fuel tanks and chemical containers. In addition to these, by extruding these adhesives between a layer of plastic and a layer of paper or aluminum foil, a product is obtained that has a very high potential in packaging a variety of food and health products.

This product is a final B2B customer product.

Technical Specifications:

The formulation of this product includes 12 components in total. This product has three main parts: polyethylene, ethylene comonomers, and a type of linear light polyethylene grafted with maleic anhydride. On the other hand, according to the customer's needs, some other additives are added to them to improve their properties.

Advantages:

High production volume

International Standards or Permissions:

Melting point and density are within the range of ISO standards.



Application:

Some of the important applications of these adhesives are: interlayer adhesives in the five-layer pipe industry, interlayer adhesive for multilayer films in the packaging industry, and interlayer adhesive in three-layer coatings for oil and gas transmission pipes.

➤ Polyolefin Interlayer Adhesives

🏠 Aria Polymer Pishgam Co.

www.ariapolymer.ir



Product Introduction:

Interlayer adhesives are non-polar polymers containing polar groups. Today, various types of interlayer adhesives with different chemical structures have been developed. In multilayer compounds, due to the use of (polar/non-polar) groups and the incompatibility of these groups, it is necessary to use interlayer adhesives in order to maintain properties and processability. Interlayer adhesives are combined with polyolefin base along with maleic compatibilizers during a reactive extrusion process to connect non-polar groups such as polyethylene and polypropylene to polar groups such as aluminum, ethylene vinyl alcohol (EVOH), polyamide (PA).

Founded:

2008

This product is a final B2B customer product.

Technical Specifications:

This product is produced as interlayer adhesives with a special formulation under the reactive extrusion process including several different components of the base polymer. These components are:

1) linear low density polyethylene LLDPE, 2) polyolefin elastomer POE, 3) high density polyethylene HDPE, 4) polyolefin base compatibilizers, 5) high impact polystyrene HIPS, 6) styrene butadiene styrene SBS and 7) thermal stabilizers, etc. This process takes place under fully controlled temperature conditions in a twin screw extruder with a special screw design. In practice, in the production process of this product, an extruder has been converted into a chemical reactor, and the various components of the reaction must complete the reaction in less than 50 seconds before exiting the extruder.

Advantages:

High quality at a competitive price



► Polyurethane Based Lamination Adhesive for Use in BOPP Films

◆ Kimia Mana Polymer Co.

Product Introduction:

The current product is a solvent-free two-part lamination adhesive. In general, adhesives are structurally divided into two main categories, one-part and two-part. Two-part adhesives are adhesives in which the base resin and curing agent are packaged separately and mixed together before or during use. While in one-part adhesives, the base resin and curing agent are mixed together from the beginning and packaged together.

Founded:

2017

Application:

This product is used for laminating all kinds of polar and non-polar films for packaging all kinds of food.

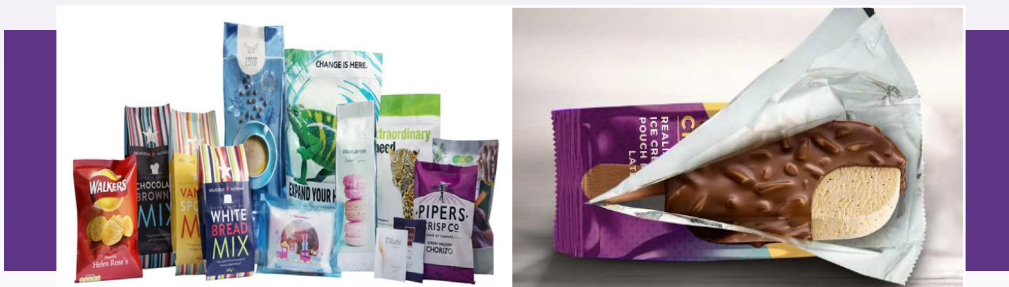
This product is a final B2B customer product.

Technical Specifications:

One of the high sensitivities of lamination adhesives among polyurethane adhesives is due to their type of use and use in food and pharmaceutical packaging. In these products, we are facing the problem of migration of isocyanide compounds to the surface and its disadvantages due to sensitivities in the formulation and correct selection of raw materials. Examining the migration tests of isocyanide groups to the surface, controlling the molecular weight of the polymer due to the absence of solvent, proper adhesion to different surfaces (polar and non-polar surfaces) and the absence of excess isocyanate groups, suitable viscosity for proper grammage are among the factors that will make its production very complicated. .

Advantages:

High quality at a competitive price



Application:

For packaging in the food industry

➤ COLD SEAL Adhesive

◆ Kimia Mana Polymer Co.

Product Introduction:

With the advancement of science and technology, especially in the packaging industries of food products such as cakes and cookies, the new generation of BOPP films was used, which is covered with a layer of aluminum vapor for its hygiene on the layer that is in contact with food. After this layer is printed on the film, during packaging by thermal jaws, the edges of the wrapper are connected to each other during 10-15 seconds in a semi-melting state. The disadvantages of this method are the low speed of packaging in production lines and the presence of vapors during heating with jaws. With the increasing growth and development of the packaging industry, a new generation of adhesives was introduced for the packaging of wrappers used in the food industry, which was introduced under the name COLD SEAL adhesive.

Cold seal adhesives are mainly used in companies that produce food wrappers. After applying glue on the metallized BOPP film with a weight of 1.5 grams per square meter, they are passed through the thermal tunnels at a very high speed at a temperature of 70-80°C, and after the water evaporates, they are packed in rolls. At the time of consumption, they are under pressure by the jaws and they are active and stick to each other in the shortest possible time (2-3 seconds).

Founded:

2017

This product is a final B2B customer product.

Technical Specifications:

Cold Seal adhesives are a combination of water-based emulsion resins (acrylic and vinyl acetate), natural latex, various additives such as antifoam, preservatives, etc. These adhesives are formulated by combining at least 6 main components with a solid percentage above 55%. The main complexity in the formulation of these adhesives is that they must simultaneously have several properties (pressure sensitive, self-mixing, adhesion to the metallized layer, and finally, lack of surface adhesion for the processability of films) in order to be used in food industry as a cold seal adhesive in the packaging of BOPP wrappers. Four types of base resins are used in cold seal adhesives, which create properties of self-mixing and elasticity, pressure sensitivity, strong connection to the metallized layer as a lining, adjustment of viscosity, drying time, etc. In addition to these resins, additives are used for easy operation, suitable and bubble-free coating, and preservatives to maintain the properties of the adhesive, etc.

Advantages:

- ※ High production volume
- ※ Good quality

International Standards or Permissions:

- ※ Food and Drug Administration approval
- ※ Health license



➤ Polymer Coupling Agents – Intralayer Adhesives Based on Polyethylene and Polypropylene Treated with Maleic Anhydride and Acrylic Acid

◆ Karangin Co.

www.karangin.com



Product Introduction:

In polymer mixtures, especially when the base polymer has a low polarity (especially in polyethylene and polypropylene mixtures), the dispersion of components with higher polarity such as fillers or some polar additives will be associated with problems. In such cases, components that have both polar and non-polar components in their molecular structure should be used. The most common compounds used for such applications are polyethylene treated with maleic anhydride and polypropylene treated with maleic anhydride.

Maleinated or grafted polyolefins with acrylic acid or a combination of both (grafted with acrylic acid and maleic anhydride) have a non-polar main chain on the one hand, and on the other hand, the maleic anhydride groups grafted on them have high polarity, which provides this dual behavior.

Application:

These polymers are used in three-layer coating systems of oil and gas pipes.

Founded:

1987

This product is a final B2B customer product.

Technical Specifications:

This product is continuously produced by reactive extrusion method. The main reactive components in this process are polyethylene, maleic anhydride and/or acrylic acid and peroxide compounds that produce radicals. In this process, the base polymer along with fillers, carbon black and additives are introduced from the entrance at the beginning of the extrusion process. In this section, dispersion and preparation of a uniform polymer mixture is achieved. In the middle part, a solution of peroxide and solvent components along with maleic anhydride and/or acrylic acid are injected into the extruder. Peroxide is broken at high temperature inside the extruder and creates free radicals. By separating a hydrogen from the polymer chain, this free radical creates a free radical on it, which then attacks the double bond in the maleic anhydride structure and reacts with it. It is in this order that the connection of maleic anhydride to the polymer chain occurs. The degree of maleation or grafting with acrylic acid, changes in molecular mass, molecular mass distribution, the amount of maleic anhydride and/or acrylic acid remaining in the final mixture, etc. are all things that will affect the quality of the final product.

One of the most important features of this product is Mellat Flow Index (MFI). Since in the process of maleation, the molecular mass of the polymer chains itself changes (generally, polyethylene increases and polypropylene decreases), MFI is considered as a determining characteristic for the final product. The MFI of the examined product based on the ISO1133 standard test method (with a weight of 2.16 kg and a temperature of 190 °C) is generally in a wide range of GR/10MIN8/0-15.

Crystallization temperature is another important feature of this product because when used as a TIE LAYER, it must have a crystallisation temperature close to that of the covering polyethylene layer in order to create a more effective bond between them. The measurement of this temperature is done using the ISO 3146 standard test method and is generally in the range of 100-120 °C.

Advantages:

High quality production on a large scale



► Polyurethane Water-Based Adhesive for Vacuum Coating (Vacuum Membrane)

◆ Baspar Gostar Ariya Engineering Co.

www.baspargostar.com



Product Introduction:

This product is a water-based product based on polyurethane (POLYURETHANE DISPERSION; PUD) and is consistent with the global movement towards replacing water-based adhesives instead of solvent-based adhesives.

In addition to the acceptable quality of the coated MDF surface, this adhesive also has the possibility of working on the patterned and designed MDF surface (by CNC). For this reason, the edge PVC tape can be removed and add more beauty and durability to the work.

Main Export Destinations:

Georgia, Iraq, Afghanistan

Export History:

Up to 500,000 \$

Founded:

2008

Application:

Membrane adhesive is mainly used in small workshops and for covering cabinets, wardrobes, beds, shoe racks and other products made by MDF.

This product is a final B2B customer product.

Technical Specifications:

The use of adhesive is in the form of applying adhesive on the surface of the wood and then placing the membrane coating on the surface. Before the coating is completely placed on the surface of the wood, it is heated to a level that provides the necessary temperature (about 100 °C) to activate the hardener system in the product (within 15 seconds). The hardener system consists of blocked polyisocyanate, the block part of which is opened at the mentioned temperature and allows the polyisocyanate to react with the chemical groups on the surface of the wood and the adhesive, and as a result, the adhesive hardens. At the same time as the coating is placed on the surface of the wood, negative pressure (vacuum) is applied from the direction opposite to the coating, which causes the coating to remain fixed on the surface during the chemical reaction in the adhesive layer.

Advantages:

High quality at a competitive price



Application:

This adhesive is used to connect and repair GRP composite pipes.

➤ Fiberglass Pipes Connecting Adhesives

🏠 Pishro Sazeh Payvand Barthava Co.

www.pspbcomposite.com



Product Introduction:

Fiberglass pipes are lightweight and corrosion-resistant pipes that are produced under advanced quality standards and have been increasingly used in industries for the transfer and processing of corrosive fluids over the past 60 years. According to the type of resin used and how they are reinforced, fiberglass pipes are divided into several types, one of which is GRP (Glass Reinforced plastic Pipe). GRP pipe has a composite structure of resin, glass fiber and other materials.

Epoxy adhesives are used to connect and repair pipelines and fiberglass parts, and the company's product is also based on this.

Founded:

2015

This product is a final B2B customer product.

Technical Specifications:

The adhesive base of the company is epoxy resin along with Novalak epoxy resin and various fillers. The company has used the combination of two types of amine hardeners to achieve the desired properties and all the mechanical, chemical and thermal resistance tests have been performed on the product and it has also been used in petrochemicals in the country. The product is qualitatively similar to Amron PR48 product.

Advantages:

Good quality compared to foreign competitors



Application:

This adhesive is based on epoxy resin and is used to repair machinery and metal equipment (for example, holes and cracks in engines, pumps and tanks).

➤ Super Metal Adhesive

◆ Pishro Sazeh Payvand Barthava Co.

www.pspbcomposite.com



Product Introduction:

Another application of epoxy adhesives is to bond metal surfaces.

This product is a final B2B customer product.

Technical Specifications:

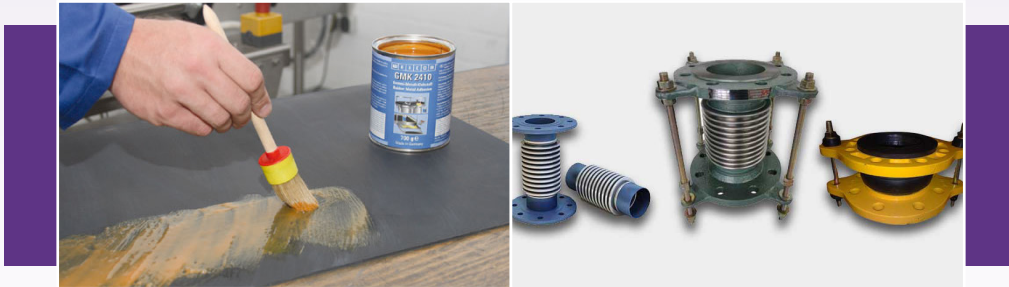
The company's product is similar to Belzona's product with code 1111. The adhesion (PULL OFF) of this product on metal is 19.6 MPa (very close to Belzona product), its shore D hardness is 90 (very close to Belzona product) and its tensile strength is 22 MPa (less than Belzona product).

Advantages:

Good quality compared to foreign competitors

Founded:

2015



Application:

This product is used to connect all kinds of integrated parts, dampers, shock absorbers, vibration absorbers and composites in the automotive, aerospace, military, road and construction industries, etc.

➤ **Rubber-to-Metal Primer and Adhesive**

◆ Rezin Baspar Aria Co.



Product Introduction:

Rubber-to-metal adhesive is used for thermosetting a wide range of elastomers, including natural rubber, styrene-butadiene rubber, nitrile rubber, chloroprene, to all kinds of metals, including steel, stainless steel, aluminum, zinc, and brass. A strong and durable bond between rubber and metal adds complexity due to the non-polar and non-adhesive nature of rubber. This product must withstand the tension and elasticity applied during use and must not separate from the metal until the rubber tears.

Founded:

2017

This product is a final B2B customer product.

Technical Specifications:

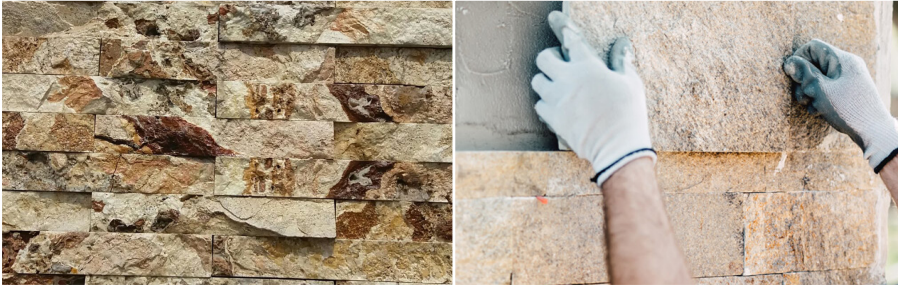
This product is designed in such a way that its curing process is completed at a temperature of about 150-200 °C and it causes high strength between rubber and metal. The dry film applied on the product will be 8-15 micrometers thick. Primer is the first layer used to prepare the surface for glue. According to the application of the primer and the target surface, the primer can be the main factor in creating adhesion or protection against corrosion factors.

Advantages:

High quality at a competitive price

International Standards or Permissions:

ASTM 03-D429



► Epoxy Stone Glue Containing Nano-Silica under the Megastone Brand

◆ Bartar Farma Technology Engineering Co.



Product Introduction:

This product is a kind of epoxy glue, especially for gluing all types of hardened concrete. This glue has two components and is suitable for creating glue in wet environments and damp concrete surfaces.

Founded:

2017

Application:

This glue is used for gluing all kinds of decorative stones and concrete parts in large-scale recreational and commercial places.

This product is a final B2B customer product.

Technical Specifications:

Due to the use of this glue to attach load-bearing parts, there are strict standards to confirm its use. To achieve the desired properties, the company has used nano silica additive in the product, which has improved the glue properties. Some of these properties are mentioned below:

Gel time (in the case of this product, it must be at least 30 minutes), compressive strength (in the case of this product, at least 70 MPa), compressive modulus (in the case of this product, at least 1400 MPa)

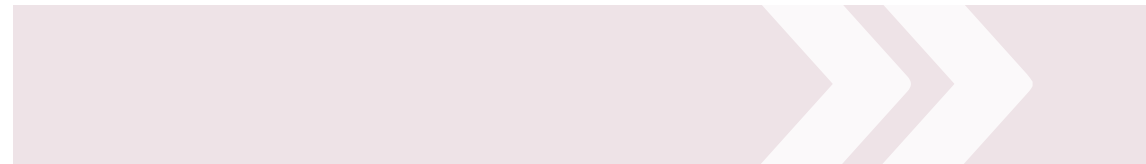
Advantages:

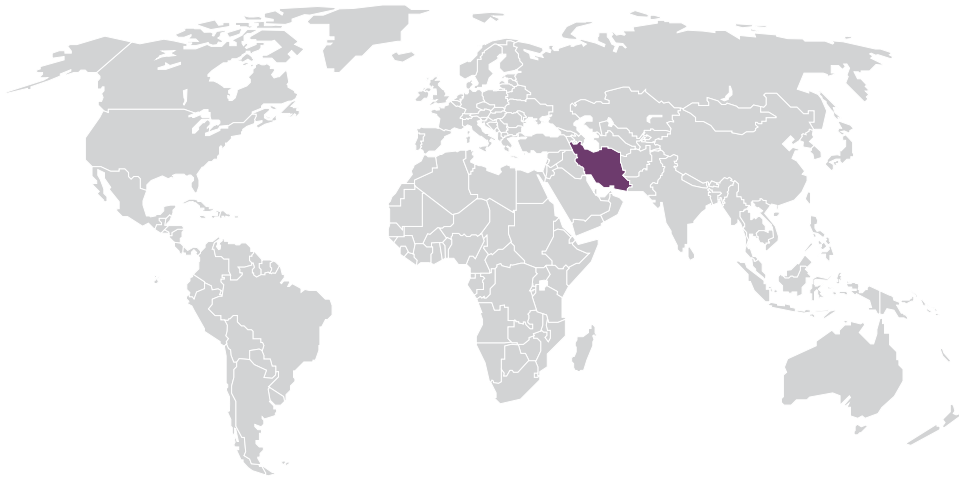
- * Competitive price
- * Passing strict standards
- * Useful in large projects in Iran



Iran House of Innovation and Technology (iHiT)

Iran House of Innovation and Technology (iHiT) is one of the types of export intermediaries that launched under the auspices of the Vice President for Science and Technology in Kenya, China, Russia, Turkey, Syria and Iraq. In addition to accessing the export instructions, these houses provide variety of services for companies to enter the interactional service markets such as: private and shared workspace, permanent exhibition of products, finding business partners and investing in the target countries of export, company registration, product registration, medicine, medical equipment and trademarks registration, dispatch and admission of business delegations, hiring local specialists to present products and service.





TEHRAN iHiT

Manager: Mohammad Karami

Field of Activity: Permanent International Exhibition | Export of products and services of knowledge-based, creative and technology companies in Tehran

Country: Islamic Republic of Iran – Tehran

Services:

- Holding permanent exhibition of knowledge-based products and services
- Holding specialized events and meetings
- Providing dedicated and shared workspace in Tehran
- Identifying export opportunities
- Identifying opportunities for scientific, technological and industrial cooperation

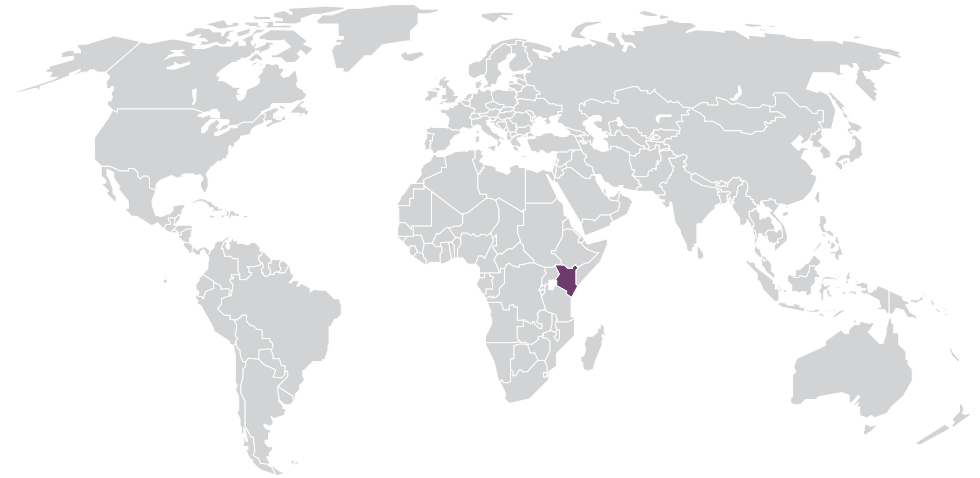
Address: Hall 37A, Tehran International Exhibition, Tehran, Iran

website: www.ihit-expo.com

Tel No: (+98) 912 444 9958 / (+98) 21 910 737 37

Supervisor: Mohammad Mahdi Agharafiee

Office Phone: (+98) 912 706 9611



NAIROBI iHiT

Manager: Ali Baniamerian

Field of Activity: Export of products and services of knowledge-based, creative and technology companies

Country: Republic of Kenya – Nairobi

Services:

- Holding Permanent exhibition of products and services
- Providing dedicated and co-working space
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Export development of knowledge-based products
- Identifying opportunities for scientific, technological and industrial cooperation
- Providing export instructions of the Center for International Science and Technology Cooperation

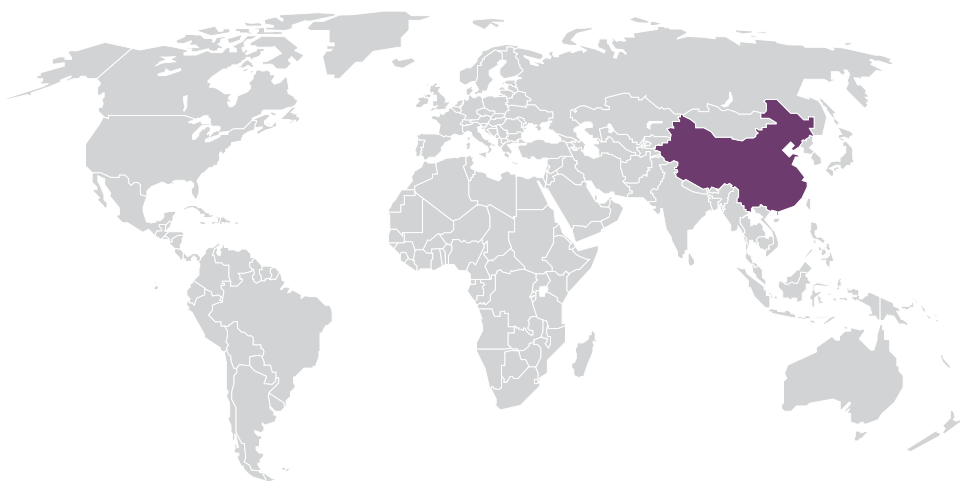
Address: Dennis Pritt Road, Next to Maalim Juma Road, Kilimani, Nairobi, Kenya

website: www.ihit.co.ke

Tel No: (+254) 111 606 113

Supervisor: Nazila Daneshvar

Office Phone: (+98) 21 910 700 80 INT 160



SUZHOU iHiT

Manager: Amir Ghorbanali

Field of Activity: Export of products and services of knowledge-based, creative and technology companies

Country: People's Republic of China - Shanghai

Services:

- Holding Permanent exhibition of products and services
- Export development of knowledge-based products
- Providing dedicated and co-working space
- Identifying opportunities for scientific, technological and industrial cooperation
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Providing export instructions of the Center for International Science and Technology Cooperation

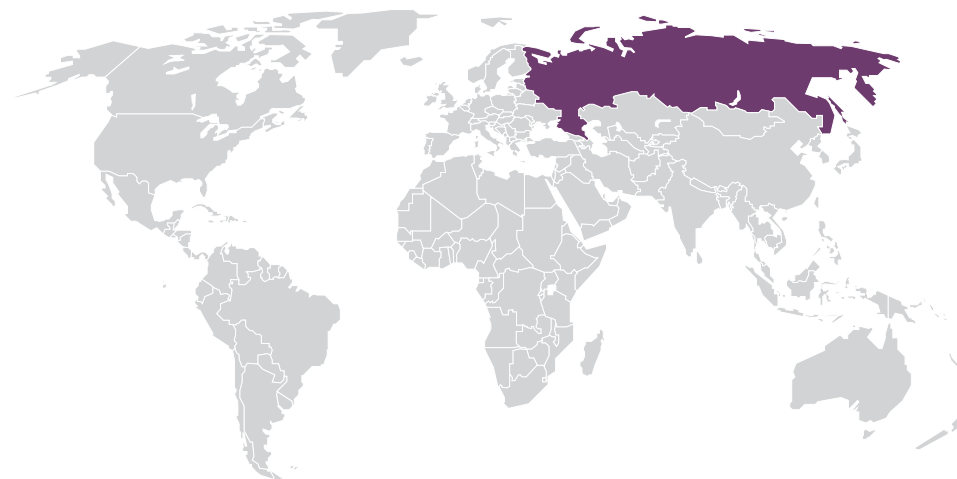
Address: Room 88 ,409 Keling Road, Advanced District, Suzhou, Jiangsu Province, China

website: www.innotechexport.ir

Tel No: (+86) 182 062 123 92

Supervisor: Simin Rafeapour

Office Phone: (+98) 935 861 44 22



MOSCOW iHiT

Manager: Mahdi Deilam Salehi

Field of Activity: Export of products and services of knowledge-based, creative and technology companies

Country: Russian Federation – Moscow

Services:

- Holding Permanent exhibition of products and services
- Providing dedicated and co-working space
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Export development of knowledge-based products
- Identifying opportunities for scientific, technological and industrial cooperation
- Providing export instructions of the Center for International Science and Technology Cooperation

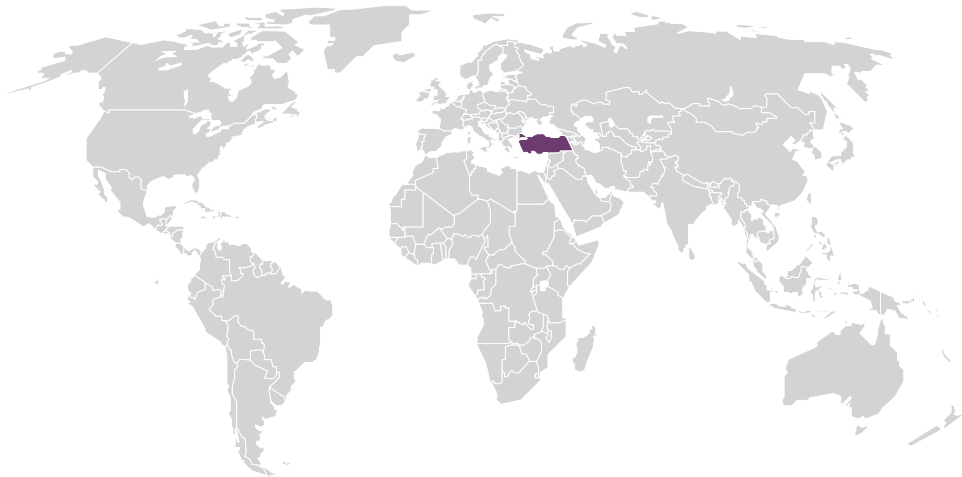
Address: No. 7, Unit 4, Arkhangelsky St., Moscow, Russian Federation

website: www.ihit-ru.com

Tel No: (+7) 903 123 16 31

Supervisor: Malek Saeidi

Office Phone: (+98) 912 617 6293 | (+98) 21 860 537 15 INT 309



ISTANBUL iHiT

Manager: Masoud Hasani

Field of Activity: Export of products and services of knowledge-based, creative and technology companies

Country: Turkey – Istanbul

Services:

- Holding Permanent exhibition of products and services
- Providing dedicated and co-working space
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Export development of knowledge-based products
- Identifying opportunities for scientific, technological and industrial cooperation
- Providing export instructions of the Center for International Science and Technology Cooperation

Address: Halaskargazi, Halaskargazi Cd. No: 34371 ,66-38 Şişli/Istanbul

website: www.istanbulihit.com **Email:** info@istanbulihit.com

Tel No: (+90) 21 240 141 44 **Whatsapp:** (+90) 533 505 4589

Supervisor: Masoud Hasani

Office Phone: (+98) 21 882 227 55



DAMASCUS iHiT

Manager: Mohammad Hadi Zeighami

Field of Activity: Export of products and services of knowledge-based, creative and technology companies

Country: Syria – Damascus

Services:

- Holding Permanent exhibition of products and services
- Providing dedicated and co-working space
- Export development of knowledge-based products
- Identifying opportunities for scientific, technological and industrial cooperation
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Providing export instructions of the Center for International Science and Technology Cooperation

Address: Damascus Freezone, Jamarag Sq., Damascus, Syria

website: www.ihit.sy

Tel No: (+98) 918 693 39 33

Supervisor: Hasan Tahmasebi

Office Phone: (+98) 21 631 033 15



Iraq (Sulaymaniyah) iHiT

Manager: Hossein Salmani

Field of Activity: Export of products and services of knowledge-based, creative and technology companies

Country: Iraq – Sulaymaniyah

Services:

- Holding Permanent exhibition of products and services
- Providing dedicated and co-working space
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Export development of knowledge-based products
- Identifying opportunities for scientific, technological and industrial cooperation
- Providing export instructions of the Center for International Science and Technology Cooperation

Address: Iraq, Sulaymaniyah, Sever St.

website: www.abc-s.com

Tel No: (+964) 774 567 03 66

Supervisor: Mohammad Mahdi Alebouyeh

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