



WAX *Emulsion*

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Tianshi Group Introduction

Since 2002, Tianshi Group has been focused on the development and application of wax additives, creating a set of industrial chain from the refinement, oxidation, grafting, esterification and saponification of raw wax upstream to the emulsification and micronization of polymer wax downstream. Tianshi Group has established Nanjing Tianshi Experimental Micropowder Co., Ltd., Nanjing Tianshi New Material Technologies Co., Ltd. and Yangzhou Tianshi New Material Technologies Co., Ltd. with a total area of more than 100,000 square meters.

Tianshi Group produces 9,000 tons of micronized waxes and micronized PTFE , 6,000 tons of wax emulsions and wax dispersion, 12,000 tons of oxidized waxes and refined waxes, 3,000 tons of micronized waxes, serving nearly 7,000 customers in seventeen industries, such as coatings, inks, leather, textiles, engineering plastics, cosmetics and release agents.

Tianshi Group takes the pioneered supercritical CO₂ spraying as the technical core, produced spherical micronized waxes and then developed the nanoscale surface coating technology and waterborne technology. Tianshi Group has focused on wax additives for over 16 years, always promoting wax additives for precise applications to meet customer's customized requirements, keep improving on raw material selection and process monitoring, to create value for customers and win the recognition from them. Tianshi aim to be the expert of wax additives.



R&D and Quality Management

Tianshi has four application laboratories and analysis centers, including paint, ink, powder coating and leather, with a research and development team of more than 20 people. The Company has developed joint development plans and cooperative research and development with many customers, owns 15 patents technologies to provide customized products.

Tianshi products well known its high quality and stability. Quality is controlled from the source to ensure traceability of the whole process from raw materials to finished products. Tianshi strictly implements the ISO9001 quality management system, carries out standardized testing methods and quality control management methods, ensures the bar code management of the whole process from raw materials to finished products, reserves samples of batch inspection of raw materials and finished products for 2 years, and forms a unified file of inspection records.

Through the automatic and information-based DCS whole-process control system, the whole-process automation from raw material input to finished product packaging is achieved, thus improving production efficiency. Our core technology has 7 invention patents, with advanced manufacturing technology. It implements modern management systems such as lean production and 5S. The Company has certified REACH registration, ISO14001 Environmental Management System standards and ISO18001 occupational health and safety management system standards to ensure products with stable quality for customers.



PE Wax Emulsions

Model	Melting point °C	Solid content %	Ionic character	PH	Application
OE-03	105	35	N	7-9	High light, Mold release
OE-04	110-115	35	N	7-9	High light, Mold release
OE-6102	115	36	N	7-9	High light, Polish
OE-6108	120	50	N	7-9	High light, Abrasion resistance
OE-6103	115-120	50	N	7-9	Buffing, Abrasion resistance
OE-6201N	90-100	35	N	7-9	High light, mold release
OE-6301	127	35	N	7-9	High light, Mold release
OE-6501	137	35	N	7-9	High light, polishing
OE-6515	138	35	N	9-10.5	Wood Coatings/Floor wax/Leather
OE-6521	136	35	N	8.5-10.5	Wood Coatings/Floor wax/Leather
OE-6525	136	35	A	8.7-10.7	Wood Coatings/Floor wax/Leather
OE-6012	102	40	A	8.5-9.5	Architectural coating, Ink varnish
OE-6302A	123	35	N	8-11.5	Ink varnish
OE-6503	136	40	N	7-10	Wood Coatings/Ink varnish
OE-6505	139	35	N	9.5-11	Floor wax/Wood Coatings/Mold release
OE-6503C	137	35	C	3-5	Textile, Yarn
OE-6303C	127	35	C	3-5	Textile, Yarn
OE-6302C	127	30	C	3-5	Textile, Yarn
OE-6103C	112-115	35	C	3-5	Textile, Yarn
OE-6102C	110-115	30	C	3-5	Textile, Yarn
OE-6003C	100-110	35	C	3-5	Textile, Yarn
OE-6203C	90-100	35	C	3-5	Textile, Yarn

* The wax has a uniform particle size and a relatively small amount of addition can achieve the same effect.



Paraffin Wax Emulsions

Model	Melting point °C	Solid content %	Ionic character	PH	Application
OE-6802	58	45	N	7-9	Water proofing
LW-101	52	42	N	6-8	Water proofing, textile
LW-102	52	45	N	7-9	Water proofing
LW-103	60	42	N	7-9	Water proofing
LW-101C	52	30	C	3-5	Textile, Yarn
LW-102C	52	45	C	3-5	Textile, Yarn
LW-103C	60	45	C	3-5	Textile, Yarn

* Because of soft and excellent water proofing properties, the paraffin wax emulsions are widely used in variety industries.



Carnauba Wax Emulsions

Model	Melting point °C	Solid content %	Ionic character	PH	Application
CE-11	85	30	N	7-9	Polishing, hardening
CE-12	85	30	N	7-9	Polishing, hardening
OE-6001	80-90	30	N	7-9	Highlight, glazing
EC15	83	25±0.5	N	4.5-7	Leather, vehicle polishing
EC16	83	25±0.5	A	4.5-6.5	Textile, leather, ink

* Used for leather, mats industries that require glazing and polishing properties.



Wax Emulsion for Fiberglass

Model	Melting point °C	Solid content %	Ionic character	PH	Application
2055	153	35	Nonionic	6.5-8	Glass fiber reinforced PP
6703	156	40	Nonionic	7.7-9	Glass fiber reinforced PP, Demoulding
6752	163	35	Nonionic	8.5-11	Glass fiber reinforced PP
6850	-	40	Solution	2-7	Glass fiber reinforced PA
6850A	-	21	Solution	7-8.5	Glass fiber reinforced PA
7030	56	23	Alkaline dispersion	7.7-9.7	Glass fiber reinforced SMA
6806	52-54	32	Nonionic	6-7.5	Glass fiber lubricant
6505	139	35	Nonionic	9.5-11	Glass fiber sizing
7010	75	33	Alkaline dispersion	7-9	Glass fiber sizing

* Used in glass fiber wetting agent industry, to improve the compatibility of glass fiber in engineering plastics, such as nylon. For non-slip, anti-slip and high temperature applications, also used in glass fiber sizing industry.



Polymer Emulsions

Model	Melting point °C	Solid content %	Ionic character	PH	Application
7010	75	32-35	Alkaline dispersion	7.8-8.8	Flexible package/heat-seal/ Increase adhesion
7011	78	24	Alkaline dispersion	7.5-9.5	Flexible package/heat-seal/ Increase adhesion
7012	78	24	Alkaline dispersion	8.5-9.5	Flexible package/heat-seal/ Increase adhesion
7012A	78	45	Alkaline dispersion	7.5-9.5	Flexible package/heat-seal/ Increase adhesion
7040	--	5	Solution	9.5-11.5	Composite membrane anchoring agent/Increase the adhesion of ink and wash

Aqueous Wax Dispersions

Model	Dropping point °C	Solid content %	Ionic character	PH	Application
PEW-2001	110	45	N	7-9	Abrasion resistance
PEW-2003	137	36	N	7-9	Abrasion resistance
PEW-2011	115-120	60	N	7-9	Abrasion resistance
PEW-2015	110	50	N	7-9	Abrasion resistance
PTFE-1003	320	35	N	7-9	Abrasion resistance
PTFE-1005	320	55	N	7-9	Abrasion resistance
Twax-2101	144	30	N	6-9	Hand feeling, release
Twax-2102	130	30	N	6-9	Wood paint polishing agent
Twax-2105	80	28	N	6-9	Coating, leather, water proofing, anti-blocking
Twax-2106	86	40	N	6-9	Leather, polishing, hand feeling
Twax-6901	--	34	N	6-9	Leather white mist wax
Twax-2201	122	33	N	6-9	Leather, hand feeling, pull-up
Twax-2202	155	33	N	6-9	Leather, hand feeling, pull-up
Twax-2203	220	34	N	7-9	Leather, hand feeling, pull-up
Twax-2204	110	30	N	7-9	Papermaking, smoothing
Twax-2205	220	30	N	7-9	Leather, hand feeling, pull-up

* In aqueous systems (such as inks), the abrasion resistance of dispersions are significantly better than wax emulsions. Its excellent abrasion resistance and stability improve the scratch and mar resistance of coatings and inks although it affects the gloss of systems.

The water-based treatment of leather finishing agents is becoming a trend. Tianshi has made all kinds of leather solvent-based waxy powders into water-based dispersions, which is convenient to add in aqueous systems.





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