LANDU兰杜

Product Manual

www.landu-china.com

INTRODUCTION

LANDU is a leading high-tech enterprise headquartered in Shandong Province, at the forefront of cutting-edge research, development, and manufacturing in the field of construction materials. Our core expertise lies in the production and global distribution of **Cellulose Ethers (HPMC, HEMC, HEC)** and **Redispersible Polymer Powder**. We have also strategically invested in state-of-the-art production facilities, enabling us to expand our product portfolio to encompass Polycarboxylate Superplasticizer, Gypsum Retarder, Silicone Hydrophobic Powder, and Powder Defoamer. This comprehensive range of offerings establishes us as the premier one-stop procurement partner for our clients.

— Hydroxypropyl methyl cellulose (HPMC)	20,000 MT/Year
— Hydroxyethyl methyl cellulose (MHEC/HEMC)	15,000 MT/Year
— Hydroxyethyl cellulose (HEC)	5,000 MT/Year
— VAE Redispersible powder (VAE RDP)	20,000 MT/Year
— Other construction additives	15,000 MT/Year

Our dedication to innovation and client-centric solutions is deeply rooted in our corporate culture. We've established a pioneering R&D center and application laboratory, providing customized production and responsive services through close collaboration with our esteemed clients. Our products now reach more than **60 countries** and regions, reaffirming our steadfast commitment to becoming the foremost supplier in the realm of advanced building materials additives.

Contents

03 Cellulose Ether (Landercoll® & Lenecel™)

04 Redispersible Polymer Powder (Accurate™)

05 Product recommend table

07-14 Applications

07 Tile Adhesive

08 Wall Putty / Skim Coat (Cement based)

09 Gypsum Based Mortar

10 Cement and Lime Based Render/Plaster

11 Self Leveling Compounds

12 EIFS

13 Detergents

13 Oil Drilling

14 Paints and Coatings

15-18 New Products (Novastar™)

15 Polycarboxylate Superplasticizer Powder (PCE Powder)

16 Silicone Hydrophobic Powder (SHP)

17 Powder Defoamer

18 Gypsum Retarder

Cellulose Ether

Our products are rooted in cellulose, a natural polymer sourced from wood or cotton linter. We specialize in three main types of cellulose ethers: Hydroxypropyl Methyl Cellulose (HPMC) ,Hydroxyethyl Methyl Cellulose (HEMC) and Hydroxyethyl Cellulose (HEC). These products are obtained through a chemical substitution process known as etherification.

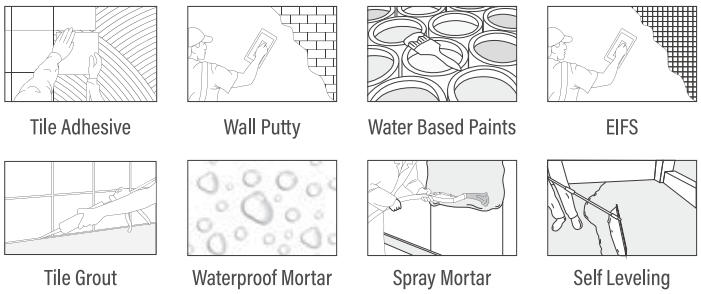
Landu offers modified high performance products, tailored to customers' different application requirements.

Using Landu's modified cellulose ethers, customers' products have the following advantages

Benefits:

- Enhanced Water Retention
- Improved Workability
- Increased Sag Resistance
- Extended Open Time
- Enhanced Tensile Strength
- Adjusted Water Demand

Recommended application:



Naming convention

Landercoll®	K / EM / HS / HE	Number	H / T / S / G / D / E
	K-HPMC	Viscosity	H - High Water Retention
	EM- HEMC	X1000	Improved open time
	HS/HE -HEC	NDJ, 2% Solution, 20℃	T - Anti-Sagging
			S - Surface Treated
			G - Gypsum Base
			D - Detergent
			E - Cost-Effective

Redispersible Polymer Powder (RDP)

Accurate™ Redispersible polymer powder is a versatile and innovative chemical additive that plays a pivotal role in diverse industries, particularly construction and building materials. It is designed to enhance the performance of various formulations, such as mortar, concrete, adhesives.

Properties

Flexibility and Adhesion
Improve the flexibility and adhesion properties of various materials

Improved Workability
They make the mix easier to handle, apply, and shape

Reduced Shrinkage
Significantly reduce shrinkage during drying and curing

Improved Durability
making them more resistant to environmental factors

Temperature Tolerance
Improve the freeze-thaw resistance of construction materials

Typical Applications

- Tile Adhesive
- Wall Putty
- Self Leveling
- EIFS
- Tile Grout
- Plastering Mortar

Specification

Redispersible Polymer Powder

Technical Data	4012N	4025N	5011N	5025E	5045N	5050N	5100L	8032H	8035H
Polymer Type	VAE	VAE	VAE	VAE	VAE	VAE	VAE	VAE	VAE
Protective Colloid	PVA	PVA	PVA	PVA	PVA	PVA	PVA	PVA	PVA
Solid Content(%)	≥99	≥99	≥99	≥99	≥99	≥99	≥99	≥99	≥99
Ash Content(%)	14±2	14±2	12±2	10±2	12±2	10±2	10±2	10±2	10±2
Bulk Density(g/l)	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600	400-600
TG(℃)	15	0	15	0	-15	-15	15	-15	-15
MFFT(℃)	4	1	4	4	0	0	4	0	0
PH Value	6-8	6-8	6-8	6-8	6-8	6-8	6-8	6-8	6-8
Type	Rigid	Semi-flexible	Rigid	Semi-flexible	Flexible	High Flexible	Rigid	Flexible	Flexible

Product Recommend Table

Chemical Name	Brand	Grade	NDJ Viscosity 2%	Brookfield Viscosity 1% or 2%	Tile adhesive	Tile grout	Masonry Mortar	Render,Wall Putty (Cement)	Gypsum based moratr	Self leveling compounds	EIFS	Paints & Coatings	Detergents
HPMC	Lenecel™	K75E	75,000-80,000	35,000-40,000	●		●	●●					
		K100E	85,000-110,000	45,000-60,000	●			●●					
		K200E	185,000-215,000	65,000-80,000	●●			●●			●		
	Landercoll®	K04	300-500	300-500						●●			
		K40	35,000-45,000	20,000-24,000	●	●●	●●	●					
		K75	75,000-80,000	35,000-40,000		●	●	●●	●				
		K100	85,000-110,000	45,000-60,000	●	●	●	●●	●●		●●		
		K150	140,000-160,000	55,000-65,000	●●		●	●	●		●●		
		K200	185,000-215,000	65,000-80,000	●●			●	●		●●		
		K75G	75,000-80,000	35,000-40,000				●	●●				
		K100G	85,000-110,000	45,000-60,000				●	●●				
		K150G	140,000-160,000	55,000-65,000	●			●	●●				
		K200D	185,000-215,000	68,000-75,000									●●
		K40H	35,000-45,000	20,000-24,000	●●	●●	●●	●	●				
		K75H	75,000-80,000	35,000-40,000	●●	●		●●	●				
		K100H	85,000-110,000	45,000-60,000	●●			●●	●		●		
		K200H	65,000-80,000	35,000-45,000	●●			●			●		
		K40HT	35,000-45,000	20,000-24,000	●●		●●						
		K75HT	75,000-80,000	35,000-40,000	●●			●●	●				
HEMC	Lenecel™	EM80E	78,000-85,000	35,000-45,000	●		●	●●					
		EM100E	85,000-110,000	45,000-60,000	●			●●					
		EM200E	185,000-215,000	65,000-80,000	●●			●			●		
	Landercoll®	EM40	35,000-45,000	20,000-24,000	●	●●	●●	●					
		EM80	78,000-85,000	35,000-45,000		●	●	●●	●				
		EM100	85,000-110,000	45,000-60,000	●●	●	●	●●	●●		●●		
		EM200	185,000-215,000	65,000-80,000	●●			●			●●		
		EM100S	85,000-110,000	45,000-60,000				●				●●	
		EM150S	140,000-160,000	55,000-65,000	●							●●	

Chemical Name	Brand	Grade	NDJ Viscosity 2%	Brookfield Viscosity 1% or 2%	Tile adhesive	Tile grout	Masonry Mortar	Render,Wall Putty (Cement)	Gypsum based moratr	Self leveling compounds	EIFS	Paints & Coatings	Detergents
HEMC	Landercoll®	EM80G	78,000-85,000	35,000-45,000				●●	●●				
		EM100G	85,000-110,000	45,000-60,000				●●	●●				
		EM150G	140,000-160,000	55,000-65,000				●●	●●				
		EM40H	35,000-45,000	20,000-24,000	●●	●●	●●	●●	●				
		EM80H	78,000-85,000	35,000-45,000	●●	●		●●	●				
		EM100H	85,000-110,000	45,000-60,000	●●			●●	●		●		
		EM200H	185,000-215,000	65,000-80,000	●●			●●			●		
		EM40HT	35,000-45,000	20,000-24,000	●●		●●						
		EM80HT	78,000-85,000	35,000-45,000	●●			●●	●				
HEC	Landercoll®	HS30	/	1,500-2,500								●●	
		HS60	/	2,500-3,500								●●	
		HS100	/	3,500-5,000								●●	
		HS150	/	5,500-7,000								●●	
		HE30	/	1,500-2,500								●●	
		HE60	/	2,500-3,500								●●	
		HE100	/	3,500-5,000								●●	
		HE150	/	5,500-7,000								●●	
		HE30BE	/	1,500-2,500								●●	
		HE60BE	/	2,500-3,500								●●	
		HE100BE	/	3,500-5,000								●●	
		HE150BE	/	5,500-7,000								●●	
RDP	Accurate™	4012N	Rigid		●●			●●			●		
		4025N	Semi-flexible		●●	●		●●		●	●●		
		5011N	Rigid		●●	●		●●	●	●●	●●		
		5045N	Flexible		●●	●		●●			●●		
		8032H	Hydrophobic		●●	●●					●		
		8035H	Improved hydrophobic		●●	●●					●		

● : Workable ●● : Recommended

Brookfield viscosity: Brookfield LV 2% for HPMC and HEMC, 1% for HEC

Tile Adhesive

Landu CE and RDP products enhance the opening hours, sag resistance, adhesive strength, anti-sliding and other general physical properties of tile adhesives.

Typical Applications

- Flexible adhesives suitable for outdoor applications
- Wall and floor ceramic tiling
- Porous and non-porous tiles
- Mineral and non-mineral substrates

Benefits

- Excellent adhesive bond strength on different substrates
- Increased plastic behaviour and flexibility
- Increased cohesive force
- High wet strength values
- Excellent open time and sag resistance

Selection Guide

Cellulose Ether

Brand	Product and grade		Performance	Type of tile adhesive
	HPMC	HEMC		
Lenecel™	K200E	EM200E	Economical type; Good adhesion; High viscosity;	Economical
Landercoll®	K100	EM100	Good water retention; Good general performance; Good workability; Wide range of applications;	Standard
	K200	EM200		
	K40H	EM40H	High water retention; Enhanced open time; Good slip resistance;	High Performance
	K75H	EM80H		
	K100H	EM100H		
	K200H	EM200H		
	K40HT	EM40HT	High water retention; Enhanced open time; Improved slip resistance; Outstanding comprehensive performance;	Premium
	K75HT	EM80HT		
	K100HT	EM100HT		

Redispersible Polymer Powder

Accurate™	4012N	4025N	5011N	5045N
Type	Rigid	Semi-flexible	Rigid	Flexible

Wall Putty / Skim Coat

(Cement based)

Landu CE and RDP are widely used in cement based skim coat, and can improve the application properties of formulations.

Typical Applications

· Interior and exterior applications
· All types of substrates: concrete, rendered surfaces, surfaces of thermal insulation systems, cement fiber board, bricks, AAC/ALC blocks, decorative mortar, etc.

Selection Guide

Cellulose Ether

Brand	Product and grade		Performance
	HPMC	HEMC	
Lenecel™	K75E	EM80E	Economical type; Good workability
	K100E	EM100E	
Landercoll®	K100	EM100	Good water retention; Good general performance; Good workability; Wide range of applications
	K200	EM200	
	K40H	EM40H	High water retention; Enhanced open time and operable time; Good workability
	K75H	EM80H	
	K100H	EM100H	
	K40HT	EM40HT	High water retention; Enhanced open time; Excellent workability Improved slip resistance
	K75HT	EM80HT	
	K100HT	EM100HT	

Redispersible Polymer Powder

Accurate™	4025N	5011N	5045N
Type	Semi-flexible	Rigid	Flexible

Gypsum Based Mortar

Cellulose ethers, Redispersible Polymer Powders (RDP) and Gypsum Retarder are essential additives in gypsum applications. CE improves workability and performance by enhancing water retention and reducing cracking. RDP, manufactured from polymer dispersions, enhances adhesion, flexibility, and durability. Gypsum Retarder controls the setting time of gypsum materials. They optimize gypsum-based products for various construction needs, offering improved rheological properties and overall performance.

Benefits

- Increased durability of gypsum building materials
- Increased adhesion and cohesion
- Increased dry surface abrasion resistance
- Increased water retention and improved workability

Typical Applications

- Hand applied interior base coat plaster
- Machine applied interior base coat plaster
- Interior finishing / Skim coat plaster

Selection Guide

Cellulose Ether

Brand	Product and grade		Recommended application	Performance
	HPMC	HEMC		
Landercoll®	K40	EM40	Machine Spray Plaster	Good water retention; Good general performance; Good workability; Wide range of applications
	K100	EM100	Hand Apply Plaster Gypsum Putty	
	K150	EM150		
	K40G	EM40G	Machine Spray Plaster	High water retention; Enhanced open time and operable time; Good workability
	K100G	EM100G	Hand Apply Plaster Gypsum Putty	
	K150G	EM150G		

Redispersible Polymer Powder

Accurate™	4025N	5011N	5045N
Type	Semi-flexible	Rigid	Flexible

Gypsum Retarder

Novastar™	P100/P200/P300/P400	N100/N200/N300/N400
Application environment	Gypsum system (PH neutral)	Gypsum system (PH alkalinity)

Cement and Lime Based Render/Plaster

Landu products are used to improve the workability, adhesion, flexibility and surface resistance of such renders. Additional properties like hydrophobicity, thixotropicity as well as reduced efflorescence can also be achieved by the use of our specialty additives.

Typical Applications

- Interior and exterior base coat renders
- Interior and exterior finishing renders and skim coats

Benefits

- Improved adhesion to various substrates
- Increased water repellency and hydrophobicity
- Improved water retention, consistency and stability
- Reduced primary and secondary efflorescence

Selection Guide

Cellulose Ether

Brand	Product and grade		Performance
	HPMC	HEMC	
Landercoll®	K75	EM80	Good water retention; Good general performance; Good workability; Wide range of applications
	K100	EM100	
	K150	EM150	

Redispersible Polymer Powder

Accurate™	4025N	5011N	5045N
Type	Semi-flexible	Rigid	Flexible

Self Leveling Compounds

LANDU CE , RDP and other additives products support the rheology and workability of the full range of flooring formulations improving ease of on-site application and ensuring exceptionally smooth, defect-free surfaces.

Benefits

· Increased leveling, surface aesthetics and abrasion resistance
· Improved flexural and tensile bond strength on various substrates
· Reduced formulation complexity
· Option of using different qualities of raw materials
· Stabilisation against bleeding and segregation

Selection Guide

Cellulose Ether

Landercoll®	HPMC K04	HPMC K5
Viscosity(2%,mPas)	400	3,000-5,000

Redispersible Polymer Powder

Accurate™	5011N	5100L
Type	Rigid	Rigid

Other Additives

Novastar™	PCE Superplasticizer	Silicone Hydrophobic Powder	Defoamer
Grade	540P, 580P	SHP75, SHP80	P805, P807

EIFS

LANDU CE & RDP can effectively improve the water retention,open time,sag resistance, workability of the EIFS (External Thermal Insulation System) mortars.

Typical Applications

· Adhesive mortars
· Base coat
· Top coat

Benefits

· Increased adhesion,flexibility and impact resistance
· Increased cohesion
· Increased surface abrasion resistance
· Avoids crack formation
· Increased long-term performance

Selection Guide

Cellulose Ether

Brand	Product and grade		Recommended application	Performance
	HPMC	HEMC		
Landercoll®	K75	EM80	Thermal mortar	Good water retention; Good general performance; Good workability; Wide range of applications
	K100	EM100		
	K150	EM200	Adhesive mortar	

Redispersible Polymer Powder

Accurate™	4025N	5011N	5045N
Type	Semi-flexible	Rigid	Flexible

Detergents

Landu CE is used as a thickening agent, rheology controller, dispersing agent, and emulsifier for detergent applications.

Clarity of solution

Provide higher clarity by reducing haziness and fiber contents.

Lubricity

Enhance the flow and dispersion of products

Tolerance to PH and salt

It has a high tolerance for dissolved electrolytes or salts and remains stable in PH variations.

Typical Applications

- Laundry detergent
- Hand sanitizer
- Dish soap
- Floor cleaner

Cellulose Ether

Brand/Grade	Landercoll® HPMC		
	K100D	K200D	K200HD
Performance	Good transparency; Good dispersion; Good compatibility		Good stability, not only the viscosity is stable in aqueous solution, but also the viscosity loss is small in the washing formula

Oil Drilling

In oil drilling industry, low viscosity HEC is mainly used as water loss controller, while high viscosity HEC used as viscosifier in well-completing or finishing fluid.

Benefits

- Impart good mobility and stability to slurry
- Increase the sand carrying capability of the slurry
- Prevent water in the slurry from entering into the oil reservoir
- Enhance the stabilizing capability of the wall reservoir

Selection Guide

Cellulose Ether (HEC)

Grade	Viscosity(Brookifeld)
HE D03	150-450(2%)
HE D100/HE D100BE	3,500-5,000(1%)
HE D150BE	5,000-6,000(1%)

Paints and Coatings

Landercoll® offers excellent suspension property with wide compatibilities that can be matched with an extensive range of colored pigments, emulsions, surfactants, emulsifiers, defoamers and preservatives.

Properties

Excellent color acceptance
Wide compatibility with paint components & colorants

Rheology modifiers
Pseudoplastic or associative viscosity build-up

Viscosity stability
Excellent long term stability on aging

Water retention
Good water retaining ability and open time

Selection Guide

Cellulose Ether

Product	Grade	Viscosity (Brookfield)	Percent Solution	Performance
HS Series (HEC)	HS30	1,500-2,500	1%	Suitable for economical coatings; High viscosity, good thickening effect; Good enzyme resistance;
	HS60	2,500-3,500		
	HS100	3,500-5,000		
	HS150	5,500-7,000		
HE Series (HEC)	HE30	1,500-2,500	1%	Suitable for most coating plants; Good biological stability; Good enzyme resistance; Good color performance;
	HE60	2,500-3,500		
	HE100	3,500-5,000		
	HE150	5,500-7,000		
BE Series (HEC)	HE03BE	250-550	2%	Suitable for high-end coatings; Excellent biological stability; Excellent enzyme resistance; Excellent color performance; Good compatibility
	HE6BE	5,500-7,000	2%	
	HE30BE	1,500-2,500	1%	
	HE60BE	2,500-3,500	1%	
	HE100BE	3,500-5,000	1%	
	HE150BE	5,500-7,000	1%	
HEMC	EM100S	3,500-5,000	1%	Low cost, suitable for engineering coatings; High viscosity; Good Workablity
	EM150S	5,500-7,000	1%	

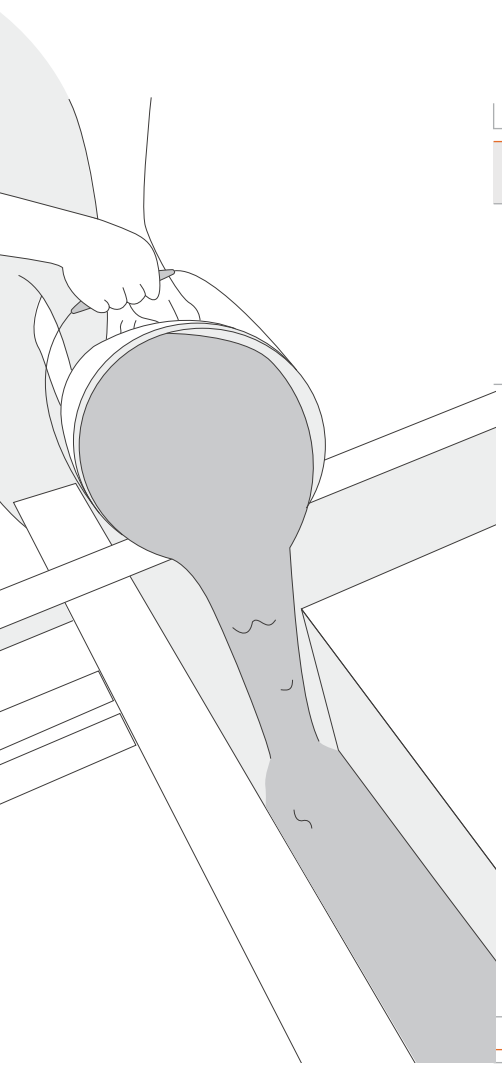
Polycarboxylate Superplasticizer Powder

- PCE Powder

Polycarboxylate superplasticizer powder is an innovative and advanced construction material additive designed to optimize the performance of concrete and mortar mixes. It is a fine, free-flowing powder that is highly soluble in water, making it easy to handle and disperse in construction applications. This superplasticizer is specifically formulated with polycarboxylate-based polymers, which offer exceptional benefits to enhance the properties of concrete and mortar.

Benefits

- Low dosage, high water reduction
- Improved workability
- Enhanced strength development
- Good dispersion
- Reduced shrinkage and cracking
- Good compatibility with cement



Specification and Application

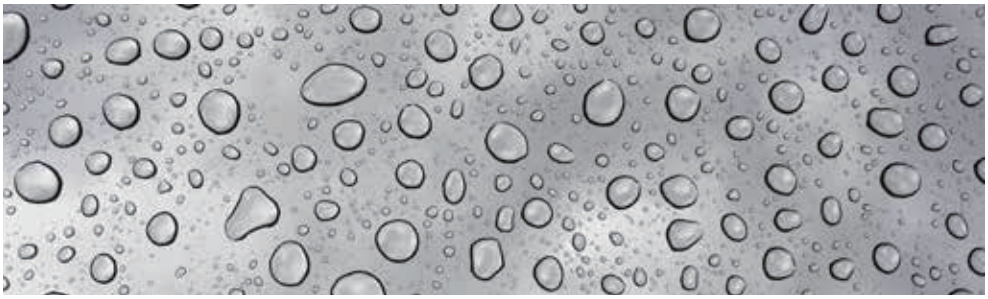
	Grade	530P	540P	570P	580P	590P
Specification	Density	600±100g/L				
	Active Component	≥90%				
	Water Reduction Ratio	≥25%				
	Water Content	≤3%				
Application	Grouting Mortar	●●	●	●	●	
	Duct Grouting Mortar	●●	●		●	
	Bedding Mortar	●	●●		●	
	Repair Mortar	●	●●		●	
	Waterproof Mortar	●	●●		●	
	Gypsum Based Self Leveling			●●	●	
	Cement Based Self Leveling	●	●●		●	
	Gypsum Based Prefabricated Component	●		●●	●	
	Gypsum Based GRC Prefabricated Component	●		●●	●	
	UHPC		●		●●	●
	3D Printed Concrete	●	●●		●	●
	Microcement	●	●●		●	●
	ECC High Ductility Concrete		●		●●	●
	Concrete		●		●	●●

* 590P powder can replace for liquid PCE in ordinary concrete.

Silicone Hydrophobic Powder (SHP)

-Water Repellent/Waterproof agent

Silicone hydrophobic powder is a specialized chemical additive known for its remarkable water-repellent properties. This fine powdered material is designed to modify the surface characteristics of various substrates, making them highly resistant to water and moisture. It is often used in a wide range of industrial applications to provide water-repellent or waterproofing qualities to surfaces and materials. It accomplishes this by forming a protective, hydrophobic barrier that prevents water penetration and helps maintain the integrity and durability of the treated surfaces.



Benefits

- **Water Repellency**

It reduces water absorption, preventing moisture from penetrating the material.

- **Durability**

The hydrophobic barrier created by the powder helps protect the concrete or cement from the effects of moisture, such as freeze-thaw damage, efflorescence, and corrosion of embedded steel reinforcements.

- **Reduced Permeability**

The powder reduces the permeability of concrete or cement, making it less prone to the ingress of water, salts, and other harmful substances.

- **Improved Workability**

It can enhance the workability of concrete mixes, making it easier to handle and place.

Application

- Self Leveling
- Repair Mortar
- Decoration Mortar
- Gypsum Based Mortar
- Waterproof Mortar
- Microcement

Technical Data

Grade	SHP75 / SHP80
Appearance	White free-flowing powder
Bulk Density	400-600 g/L
Moisture Content	≤10 %
PH Value	7 ~ 9
Dosage Recommendation	0.2~0.5%

Powder Defoamer

A powder defoamer is a specialized chemical additive designed to control and suppress foam formation in cement or gypsum mixtures. Foam can be an unwanted side effect of mixing, especially when water or air-entraining admixtures are involved. The presence of excessive foam can negatively impact the workability, consistency, and performance of mortar. Powder defoamers are formulated to effectively eliminate or reduce foam, allowing for better control and application of mortar in construction and masonry projects.

Benefits

- **Foam Control**
  It is highly effective at controlling and eliminating foam in mortar mixtures.

- **Improved Workability**
  This results in smoother application, better consolidation, and improved finishing of the material.

- **Reduced Mixing Time**
  This can lead to increased productivity.

- **Enhanced Bonding**
  Eliminating excess foam promotes better bonding of mortar to substrates, improving the overall strength and durability of the construction.

Application

- Self-leveling Compound
- Grouting Mortar
- Waterproofing Mortar
- Decorative Mortar
- Repair Mortar
- Injection Mortar

Technical Data

Grade	P805	P806	P807
Usage Environment	Alkaline System	Neutral/Acidic System	Low Temperature Environment
Appearance	White or Light Yellow Powder	White or Light Yellow Powder	White or Light Yellow Powder
Bulk Density	500±100g/L	500±100g/L	500±100g/L
Particle Size	80 mesh	80 mesh	80 mesh
Moisture Content	≦5%	≦5%	≦5%
PH Value	6-8	6-8	6-8
Dosage Recommendation	0.1~0.3%	0.1~0.3%	0.1~0.3%

Gypsum Retarder

LANDU Gypsum Retarder is a chemical additive used in the construction and building industry to control and slow down the setting time of gypsum-based materials, particularly gypsum plaster and gypsum board compounds. By retarding the setting process, it provides more time to work with the material, ensuring proper application and finishing. It enhances the workability of gypsum materials. It allows for smoother application, reducing the risk of premature setting, which can lead to uneven surfaces or imperfections.

Product Advantage

- Extended Setting Time
- Improved Workability
- Versatility
- Consistent Results
- Reduced Material Waste
- Ease of Application

Specification and Application

	Grade	P100/N100	P200/N200	P300/N300	P400/N400
Specification	Appearance	Light yellow powder			
	Moisture Content	≤3%			
	Bulk Density (g/L)	800-1,000	800-1,000	500-800	400-700
Application	Prefabricated Gypsum Components	●●	●●	●●	●●
	Caulking Gypsum	●●	●●	●●	●●
	Gypsum Putty	●●	●●	●●	●●
	Gypsum Plaster	●●	●●	●●	●●
	Gypsum Based Self Leveling	●●	●●	●●	●●
	Other applications of Gypsum Product	●●	●●	●●	●●

* P: Suitable for gypsum system with neutral PH value; N: Suitable for gypsum system with alkaline PH value

SHANDONG LANDU NEW MATERIAL CO.,LTD

+86 531 6995 9221

info@landu-china.com

Jinan New Material Industrial Park, Jinan, Shandong, China