CAMP-SHINNING

ZHEJIANG CAMP-SHINNING NEW MATERIAL CO., LTD.

Modified Bentonite

Matting Agent

Emulsifier

Laponite

CAMP-SHINNING

Company Introduction

Zhejiang Camp-shinning New Material CO.,LTD. is a professional manufacturer of modified Bentonite Rheological Additive which is widely applied in coatings, paints, inks, sealants, lubricating Grease, refractories, Cosmetics, oil drilling mud and waste water treatment etc. We also specialized in some other additives such as matting agents.

Our Organoclay Rheological Additive is a bentonite based product. Fine quality raw bentonite is carefully selected, purified and modified with our own patent technology and knowhow. Organoclay is designed for solvent based system while inorganoclay is used in water-borne application. Different clay type, quaternary chemistry and manufacturing condition give various grades of organoclay covering different application, effecting thickening, rheological improving, settling and sag resistance, and system stability.

Our mission is to provide fine quality products and service, and create our success together with our customers.

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MINE

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MODIFIED BENTONITE

Solvent based Rheological Additive

A.Specification

Our CP organoclay rheological additives are finished from high quality Na-bentonite and Ca-bentonite with high gelling efficiency, good expending ratio, and high cation exchange rate. With our own technology and knowhow, it is precisely pured and modified. Our CP organoclay rheological additives have perfect viscosity and thixotropy, they effect excellent sag resistance and settling resistance when applied in solvent or water-borne systems.

Solvent based Organoclay Rheological Additive

Spec. / Grades	Color	Appearance	Moisture content(105℃, 2hrs) %, Max	Fineness (200mesh), %	Loss on Ignition %, (1000℃) Max
CP-40	Light Yellow	Free Flowing Powder	≤3.5	≥98	≤32
CP-34	white	Free Flowing powder	≤3.5	≥98	≤32
CP-180	White	Free Flowing Powder	≤3.5	≥98	≤32
CP-180B	white	Free Flowing powder	≤3.5	≥98	≤36
CP-GL	white	Free Flowing powder	≤3.5	≥98	≤32
CP-27	Light yellow	Free Flowing powder	≤3.5	≥98	≤32
CP-27A	Light yellow	Free Flowing powder	≤3.5	≥98	≤38
CP-10	Off white	Free Flowing powder	≤3.5	≥98	≤36
CP-EZ	Light yellow	Free Flowing powder	≤3.5	≥99	≤42
CP-MP10	Light yellow	Free Flowing powder	≤3.5	≥98	≤42
CP-APA	White	Free Flowing powder	≤3.5	≥98	≤42
CP-VZ	White	Free Flowing powder	≤3.5	≥98	≤42
SG-58	White	Free Flowing powder	≤4.0	≥98	≤42
SG-58A	White	Free Flowing powder	≤3.5	≥98	≤42
CP-250	Off white	Free Flowing powder	≤3.5	≥99	≤42
CP-250A	Off white	Free Flowing powder	≤3.5	≥98	≤50
CP-EZ10	White	Free Flowing powder	≤3.5	≥99	≤42
CP-MPS	Off white	Free Flowing powder	≤3.5	≥99	≤42
CP-MP	white	Free Flowing powder	≤3.5	≥99	≤43
CP-MPB	White	Free Flowing powder	≤4	≥99	≤42
CP-EDS	Light yellow	Free Flowing powder	≤3.5	≥99	≤42
CP-982	Light yellow	Free Flowing powder	≤3.5	≥95	≤32
CP-992	Light yellow	Free Flowing powder	≤3.5	≥95	≤36
CP-MPZ	White	Free Flowing powder	≤3.5	≥95	≤36

B.Applications

CP series rheological additive is made of Na-bentonite and Ca-bentonite by special processes purifying and modifying. It has high gel efficiency, good viscosity repeatability, perfect thickening ability and anti-settling ability when it is used in organic solvent. It also has good properties of thixotropy, sag resistance, dispersion fineness and wide applicable solvent polarity range and etc.. It can be widely used in paint, ink, lubricating grease, adhesive, oil drilling mud, cosmetics, construction mortar etc. Please find the typical applications are as follows:

- **Paint applications**:

Organoclay can greatly enhance rheological performance in paint system with a small dosage. It effects perfect prevention of pigment settling and sag resistance. Storage stability is guaranteed even in high temperatures. It also improves leveling during application and syneresis control.

MODIFIED BENTONITE

Paint applications - Pre-gel grades

Applications / Grades	Pre-gel grades						
	CP-34	CP-40	CP-180	CP-180B	CP-GL	CP-27	CP-27A
Acrylic paint	++	+	++	++	++	−	++
Alkyd paint	++	++	++	++	++	+	++
Anti-corrosion paint	++	++	+	+	+	++	++
Bituminous paint	++	++	−	_	_	−	++
Chlorinated rubber paint	++	++	+	+	+	+	+
Solvent epoxy paint	+	+	++	++	++	++	++
Non-solvent epoxy paint	+	++	+	+	+	−	−
Primer paint	++	++	+	++	+	+	++
Nitro lacquer	+	+	++	++	+	++	++
Baking paint	++	+	++	++	++	−	+
Marine paint	−	++	+	+	+	−	+
Putties and sealant	++	++	+	+	+	−	+
Polyester paint	++	+	++	++	++	+	−
Adhesive	++	++	++	++	++	+	−
Road paint	++	++	++	++	++	+	−
Zinc-rich paint	+	++	+	++	+	−	−
Thick film paint	++	++	−	+	−	+	+
Foundry paint	+	−	++	++	++	−	+
Silica paint	+	++	++	++	++	−	++
Oil-based paint	++	++	+	+	+	−	++
Vanish	+	−	+	+	+	−	+
Waste water treatment	++	++	−	−	−	−	−
Nano Plastic compound	−	−	+	+	+	−	−

Paint applications - Easy dispersing grades

Applications / Grades	Easy dispersing grades												
	CP-10	CP-EZ10	CP-EZ	CP-MP10	CP-APA	CP-250A	CP-MPB	CP-MP	CP-VZ	CP-250	SG-58	SG-58A	CP-MPS
Acrylic paint	++	++	++	+	++	++	++	++	+	++	−	−	++
Alkyd paint	+	+	++	+	+	++	++	++	++	++	−	+	++
Anti-corrosion paint	+	+	++	++	+	++	++	+	+	+	+	++	++
Bituminous paint	−	−	+	+	−	+	++	+	−	+	−	−	++
Chlorinated rubber paint	+	+	+	+	+	++	++	+	−	+	−	+	+
Solvent epoxy paint	−	−	++	+	+	++	++	++	+	++	++	++	++
Non-solvent epoxy paint	−	−	+	+	+	−+	++	++	+	+	++	++	−
Primer paint	+	+	−	+	−	++	+	+	−	−	−	+	++
Nitro lacquer	+	+	++	+	+	++	++	+	−	++	+	++	++
Baking paint	−	−	+	−	−	+	+	++	−	+	−	−	+
Marine paint	−	−	+	++	−	++	++	++	+	+	−	+	++
Putties and sealant	−	−	+	−	−	+	+	+	−	−	++	++	+
Polyester paint	++	++	−	+	+	+	++	++	++	−	−	+	−
Adhesive	+	+	+	+	+	+	++	+	−	−	+	++	−
Road paint	+	−	−	+	+	+	+	−	+	−	−	−	−
Zinc-rich paint	−	−	−	−	−	++	+	++	++	−	−	++	−
Thick film paint	−	−	−	+	+	+	+	++	−	−	−	−	+
Foundry paint	−	−	−	−	−	+	+	−	−	−	−	−	+
Silica paint	+	+	+	+	+	+	+	+	−	+	−	−	++
Oil-based paint	−	−	−	+	+	++	−	++	−	+	−	+	++
Vanish	++	++	+	−	−	++	++	++	−	+	++	−	+
Waste water treatment	−	−	−	−	−	−	−	−	−	−	−	−	−
Nano Plastic compound	+	+	++	−	−	−	+	++	−	+	+	+	−

MODIFIED BENTONITE

Solvent based Rheological Additive -Applications

• Lubricating grease applications

Lubricating greases with our organoclay can produce high temperature resistance. It effects good working stability and water resistance to the greases. And it gives improved metal adhesion and 'bleed' resistance. The basic oils used in greases will determine which types of our organoclay should be selected.

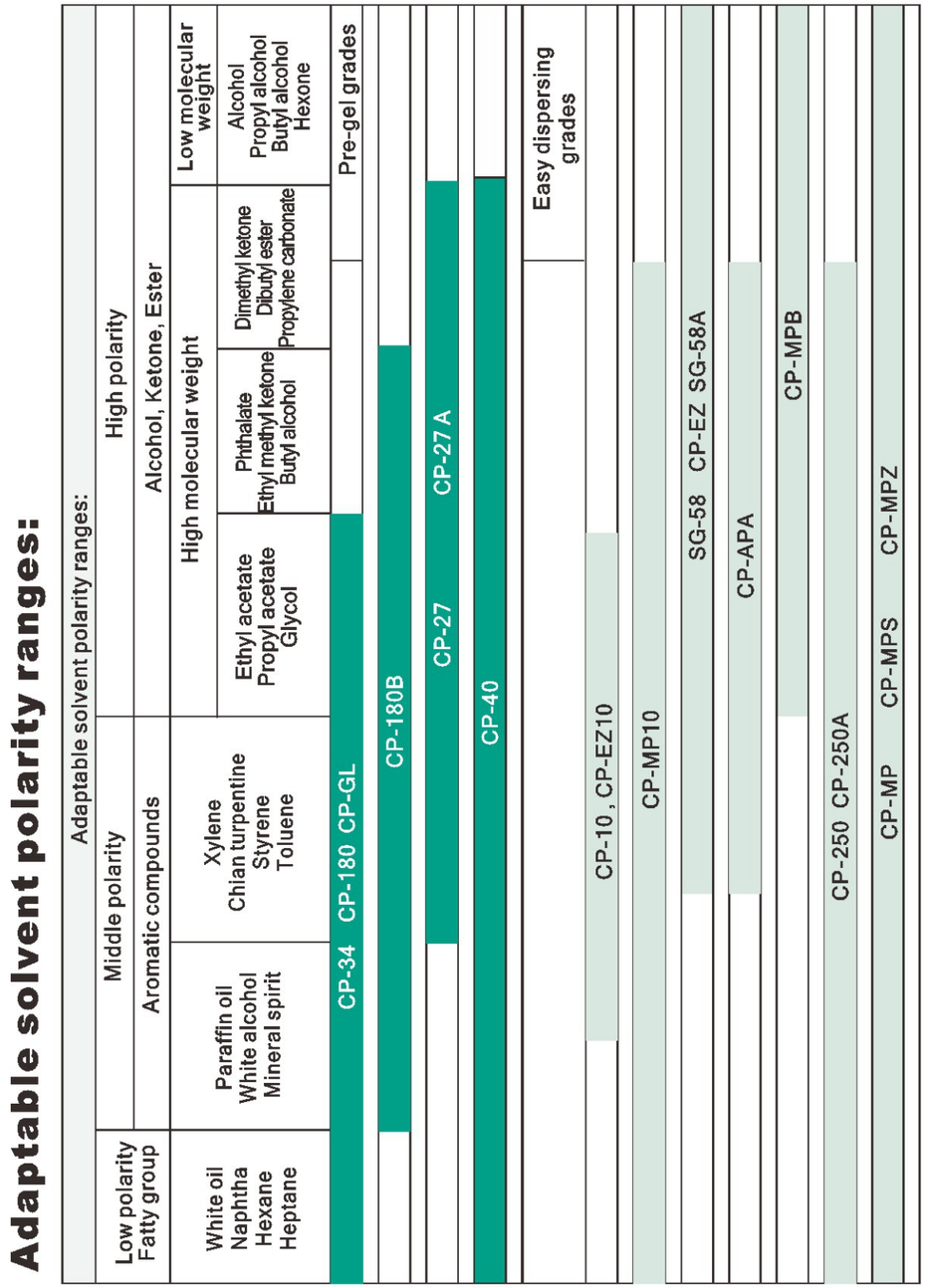
Applications \ Grades	CP-40	CP-180	CP-EDS	CP-250A
Medium,high viscosity lubricating oil	++	++	++	++
Mineral oil	++	++	++	++
Synthetic oil	–	–	+	++

• Ink applications

When our organoclay is incorporated into ink formulations, it provides reproducible rheology characteristics, following benefits, pigment settling resistance, improved dot gain, controlled tack, controlled misting and increased yield value. Our organoclay can be used in a broad range of ink systems and has been proven especially effective additives for lithographic and many gravure inks.

Applications \ Grades	CP-34	CP-40	CP-180	CP-180B	CP-10	CP-MP	CP-MPS	CP-250
Lithographic ink news ink	++	++	++	++	++	++	++	++
Letterpress and gravure ink	+	+	+	+	++	++	++	++

MODIFIED BENTONITE



MODIFIED BENTONITE

Solvent based Rheological Additive

C.Incorporation

• Incorporation condition

Grades \ Condition		Shear	Polar Activators,%	Active, %	Addition Level, %
Pre-gel grades	CP-34	High	30–40%	100	0.2-2
	CP-40	High	30–60%	100	0.2-2
	CP-180	High	30–40%	100	0.2-2
	CP-180B	High	30–40%	100	0.2-2
	CP-GL	High	30–40%	100	0.2-2
	CP-27	High	30–60%	100	0.2-2
	CP-27A	High	30–40%	100	0.2-2
	CP-MP10	Medium	10–20% or eliminated	100	0.2-2
	CP-APA	Medium	10–20% or eliminated	100	0.2-2
	CP-VZ	Medium	10–20% or eliminated	100	0.2-2
	SG-58	Low– Medium	10–20% or eliminated	100	0.2-2
	SG-58A	Medium	10–20% or eliminated	100	0.2-2
	CP-10	Medium	10–20% or eliminated	100	0.2-2
	CP-250	Medium	10–20% or eliminated	100	0.2-2
	CP-250A	Medium	10–20% or eliminated	100	0.2-2
	CP-EZ10	Medium	10–20% or eliminated	100	0.2-2
	CP-EZ	Medium	10–20% or eliminated	100	0.2-2
	CP-MP	Medium	10–20% or eliminated	100	0.2-2
	CP-MPS	Medium	10–20% or eliminated	100	0.2-2
	CP-MPB	Medium	10–20% or eliminated	100	0.2-2
	CP-EDS	Medium	10–20% or eliminated	100	0.2-2

NOTE:Dosage of polar activator is by weight of CP series clay.
Addition level is based on percentage in weight.

MODIFIED BENTONITE

-Incorporation

• Incorporation procedure for pre-gel grades

Our CP-40,CP-34,CP-180, CP-180B,CP-GL, CP-27, CP-27A are pre-gel grades for which polar activator and pre-gel are necessary.

1.Procedure of making gel:

(1) Charge 85-87% solvent (or solvent mixture) to mill
(2) Slowly add organoclay (6-10% by weight of total pregel) to mill under agitation
(3)Mix at high speed for 5 minutes
(4)Add polar activator 3-5%
(5)Mix at high speed for 5 minutes

2.Addition of pre-gel

A.For poor wetting capacity resin system (epoxy, polyester, short-oil alkyd, acrylic resin, etc.) and non-thixotropic grind materials, use in combination with surfactant, the addition process is as follows:
a. Charge resin and solvents(mix)
b. Wetting agent(if required)
c. Pigment
d. Disperse to desired fineness with grinding
e. Rheological additive pre-gel
f. Disperse completely to desired fineness
g.Dilute to desired viscosity

B.For poor wetting resin system, use surfactant and can develop thixotropy structure under shear, the addition process is as follows:
a. Charge resin and solvents(mix)
b. Rheological additive pre-gel
c. Surfactant
d. Pigment
e.Dilute to desired viscosity

• Incorporation for easy dispersing grades

Our CP-10,CP-EZ,CP-MP10,CP-APA,CP-VZ,SG-58,SG-58A,CP-250,CP-250A,CP-EZ10, CP-MPS,CP-MP,CP-MPB,CP-EDS are easy dispersing grades which can be added directly in powder. Pre-gel procedure and polar activator can be eliminated.
Incorporation Procedure for easy dispersing grades:
1.Charge solvent (or solvent mixture) to mill
2.Slowly add Organoclay (0.2%-2% in weight) to mill under agitation.
3.Mix at high speed for 5 minutes
4.Add polar activator
5.Mix at high speed for 5 minutes

MODIFIED BENTONITE

Solvent based Rheological Additive

-Incorporation

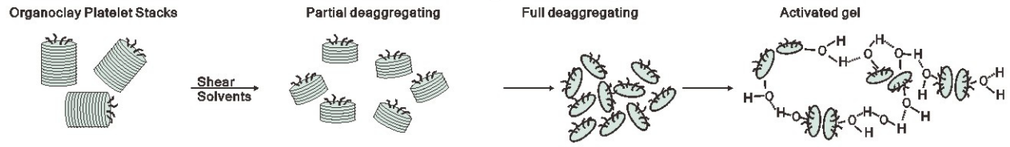
• Activator

Generally, dispersing and gelling are supported by polar activator. Polar activator can form hydrogen bridge bond between organoclay platelets, thereby increasing cross-linking and viscosity.

1.Below listed polar activators are recommended:

- Methanol/water(95/5)
- Ethanol/water(95/5)
- Acetone/water(95/5)
- Glycol ether
- Propylene carbonate/water(95/5)
- Propylene carbonate

2.Dispersion and activation of organoclay



3.Important note:

- Suitable dosage of polar activator is very important to dispersion of organoclay and stability of system. Too much polar activator will reduce swelling once again and viscosity would drop down again. See following chart 1.
- Polar activator should be added only after addition of organoclay, and organoclay has been fully wetted and dispersed.
- For poor wetting resin systems(epoxy, polyester, short-oil alkyd, acrylic resin, etc.), organoclay should be used in combination with surfactant.
- Typical viscosity curve of a system with organoclay. See following chart 2.

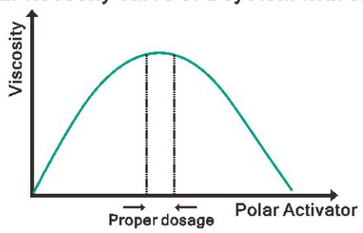
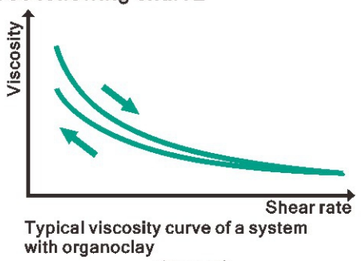


Chart 1



Typical viscosity curve of a system with organoclay

Chart 2

Package and storage:

The package:Kraft bag or kraft complex interior with PE or customized.

Packing size:25kg/bag or 500kg/bag or customized.

Products should be stored in ventilated cool and dry place.

Storage life:Two years

MODIFIED BENTONITE

Water-borne Rheological Additive

A.Specification

Grades Spec	composition	appearance	Moisture content,%, Max.	Fineness, 200mesh, %
CP-DRI	Refined bentonite	Fine powder , off white	10	93
CP-OC	Refined bentonite	Fine powder , off white	10	93
CP-OCA	Refined bentonite	Fine powder , off white	10	93
CP-EWB	Refined and beneficiated bentonite	Fine powder, off white	10	95
CP-EW	Refined and modified bentonite	Fine powder, off white	10	95
CP-EWS	Refined and modified bentonite	Fine powder, off white	10	95

B.Applications

Our CP series water-borne rheological additive is a kind of natural silicate which main ingredient is hydrophilic and high purified montmorillonite. For its good properties of thixotropy and perfect thickening ability, it can be widely applied to water based coatings, emulsion paint, toothpaste, construction mortar, cosmetic, putty etc.. Some grades can also be used to replace HEC,CMC and reduce the cost. Please find the typical applications as follows:

Items / Applications	CP-DRI	CP-OC	CP-OCA	CP-EWB	CP-EW	CP-EWS
Emulsion paint	–	–	–	++	++	++
Plaster	++	++	+	–	–	–
Water-based paints	–	–	–	++	++	++
Agriculture	++	++	+	–	–	–
Tooth paste	–	–	–	–	–	–
Pigments	–	+	+	++	++	++
Cosmetics	–	–	–	–	–	–
Water-based mud	++	++	++	–	–	–
Foundry application	–	–	–	–	–	–
Paper industry	–	+	+	–	–	–
Ceramics and enamel	–	+	+	–	–	+
Cleaning agent	–	+	+	–	–	–
Construction mortar	–	–	–	–	–	–
Putty	–	–	–	–	–	–

NOTE: ++ Recommended
+ Suitable
- Not suitable

C.Incorporation

Incorporation procedure for Water-borne grades

Water-borne Rheological Additive neither need to produce pre-gel nor add polar activator, the addition process is as follows:

1.Water(PH7.0-8.0)
2.Slowly add water-borne bentonite, disperse in high speed for 20-30minutes
3.Additive(film forming additive, deformer, fungicide, dispersant, etc.)
4.Pigment
5.Latex
6.Dilute

MATTING AGENT

Matting Agent

Our Matting Agent is silica based matting agent. It has fine particle size and outstanding suspension behavior, and allows surface with excellent slip effect. It is widely applied in coatings, paints, inks and glasses etc..

Typical properties

Items \ Grades	MT-6301	MT-6110	MT-6601	MT-6602	MT-6112
Treatment	----	----	Organic treated	Organic treated	Organic treated
Appearance	White powder	White powder	White powder	White powder	White powder
Average particle size	2-3μm	2-3μm	2-3μm	2-3μm	2-3μm
Loss on ignition	2%-5%	3%-6%	10%-13%	10%-13%	10%-13%
Loss on drying	2%-3%	2%-3%	3%-5%	3%-5%	2%-3%
PH value	6-8	6-8	6-8	6-8	6-8
Refractive index	1.45	1.45	1.45	1.45	1.45
Oil absorption	280-330g/100g	260-280g/100g	280-320g/100g	280-320g/100g	260-300g/100g
Bulk density	0.05g/ml	0.05g/ml	0.05g/ml	0.05g/ml	0.05g/ml

Applications

Applications \ Grades	MT-6301	MT-6110	MT-6601	MT-6602	MT-6112
Decorative paints	++	–	++	++	++
Pigment paints	++	–	++	++	++
Varnish	++	–	++	++	++
Water-borne coatings	+	+	+	–	–
Leather paints	–	++	–	–	–
Inks	+	–	+	+	+
Powder coatings	+	–	+	–	–
Coil coatings	++	–	++	+	+
Sports ware	++	–	+	–	–
Paper industry	++	+	+	–	–
Glass paints	–	++	–	–	++

NOTE: ++ Recommended
+ Suitable
-Not suitable

Package and storage:

Package: Kraft bag with inner PE film bag

Packing weight: 10kg/bag

Products should be stored in ventilated, cool and dry place

NEW PRODUCTS

Super white organic modified bentonite

Advantages

1.Super white appearance and good gel transparency.
2.With low viscosity but high anti-settling performance.
3.Almost no Post-thickening
4.Low silica content
5.Good dispersing property, the fineness max is 10um.

Specifications

Product	Composition	Appearance	Particle Size (200 mesh) Pass	Moisture content,%, Max.
CP-20	Organic Modified Bentonite Clay	free-flowing White powder	98%	3.5%
CP-21	Organic Modified Bentonite Clay	free-flowing White powder	98%	3.5%
CP-21A	Organic Modified Bentonite Clay	free-flowing White powder	98%	3.5%
CP-22	Organic Modified Bentonite Clay	free-flowing White powder	98%	3.5%
CP-23	Organic Modified Bentonite Clay	free-flowing White powder	98%	3.5%
CP-24	Organic Modified Bentonite Clay	free-flowing White powder	98%	3.5%

Package:25kg/bag or 50lb/bag

NEW PRODUCTS

Laponite Synthetic Silicates

Product introduction

- Limasol HV
- Limasol MV
- Limasol LV

Our Limasol is a synthetic layered silicate. It hydrates and swells in water to give translucent and colorless colloidal liquid dispersions known as sols. To meet the different viscosity requirement, we have Limasol HV, Limasol MV and Limasol LV.

Applications

Our Limasol HV, MV and LV are Laponite Synthetic Silicate additives which are platelets designed for waterborne systems application. The additives can generate clear solutions in water. And the additives can be used to generate thixotropy, to control color migration, to develop static dissipative films, and to generate pleasing texture.

So the additives are widely used in Water-borne coatings, Daily chemicals, Ceramics, Cement gel etc.

Using

Laponite needs to make pre-gel before use, mixed with water and then set aside more than 15 hours. Make the product fully expanded to form a gel. This process can be accelerated in hot water.

Package:25kg/drum

NEW PRODUCTS

Thickent W Series

Product introduction

- THICKENT W3
- THICKENT W4
- THICKENT W5
- THICKENT W6
- THICKENT W7

THICKENT W series is a special organic modified clay . It can be dispersed both in aqueous system and solvent system. Especially, It has excellent behavior in water-borne system. It can replace cellulose such as HEC and HPMC in water-borne coatings, construction mortar,ceramics.

Typical properties

◆ Excellent water retention.
◆ Wide viscosity range.
◆ Fine temperature tolerance.
◆ High adhesion and strengthening, it can be used as adhesive agent in printing and dyeing in textile industry.
◆ High thixotropy
◆ THICKENT W has good coordination with cellulose, it can be used together with HEC or HPMC. Normally, the ratio of THICKENT W and cellulose is 80%:20%.

Applications

◆ Cement-based mortar
◆ Putty
◆ Thermal insulation mortar (mainly for Bonding mortar and overlay mortar)
◆ Interface treatment binder
◆ Ceramic tile
◆ Emusion coatings and other water-borne paint.
◆ Printing and dyeing in textile.

Package:25kg/bag or 50lb/bag

OIL DRILLING APPLICATION

Modified Bentonite

Applications for oil based drilling mud

Our modified bentonite is used in oil-based drilling fluids to effect rheology and suspension which provides drillers with a means to suspend and transport cuttings to the surface. It has important performance to lubricate the drilling bit. It also be used as 'fracfluids' where the gelling ability is used to seal rock fractures in the bore hole.

Grades / Applications	CP-982	CP-992	CP-EZ	CP-169	CP-250A
Diesel solvent	++	++	++	++	++
Mineral oil	–	++	+	–	++
Crude oil	–	++	+	–	++
Synthetic oil	–	++	+	–	++

NOTE: ++Recommended
+Suitable
–Not suitable

Package:25kg/bag or 50lb/bag

Applications for water based drilling mud

- CP-OC ：API Standard Grade
- CP-DRI ：High Performance Grade

Our Bentonite CP-OC and CP-DRI meet API standard. Comparing to CP-OC, CP-DRI has high purity and yield value. They are used in vertical drilling fluids to increase viscosity an d filtration control. They are also ideal in drilling fluids because it expands when exposed to water. This expansion helps down hole formations to be sealed from invading drilling fluids.

Package:25kg/bag,50kg/bag,1000kg/bag

OIL DRILLING APPLICATION

Emulsifier

Primary Emulsifier and Secondary Emulsifier for Oil-Based drilling Mud

- CPMUL-P ：Primary Emulsifier
- CPMUL-S ：Secondary Emulsifier

CPMUL-P serves as a primary emulsifier in oil-base mud systems.
CPMUL-S serves as a secondary emulsifier in oil-base mud systems. When combined with primary emulsifier CPMUL-P, CPMUL-S can provide good emulsification, improved thermal stability of the invert emulsion, and enhanced high-temperature, high-pressure (HTHP) filtration control.

Package:175kg/drum