CLAYTONE-HT

Rheology additive in powder form based on an organophilic phyllosilicate for non-polar to medium-polar systems to generate thixotropic flow behavior.

Product data

Composition
Organophilic phyllosilicate

Typical properties
The values indicated in this data sheet describe typical properties and do not constitute specification limits.

Bulk density:	335 – 428 kg/m³
Water content:	< 3 %
Delivery form:	powder

Storage and transportation
To be stored and transported below 50 °C in the unopened original container. Store dry.

Applications

Coatings industry

Special features and benefits
- Rheological effect:
  - Viscosity increase in the low shear range
  - Very little impact on viscosity in the high shear range

- Improvement in:
  - Sag resistance
  - Anti-settling properties

- Systems:
  - Solvent-borne
  - Aromatic and moderately polar coating systems (e.g. alkyds, baking systems, acrylics and epoxy esters)

Recommended use

Marine and protective coatings	■
General industrial coatings	■

■ especially recommended ▢ recommended

Recommended levels
0.3–3 % additive (as supplied) based on the total formulation.

The above recommended levels can be used for orientation. The optimum dosage should be determined by application-related test series.

Incorporation and processing instructions
CLAYTONE-HT can be incorporated in two different ways:

Incorporation as a powder:
The additive is incorporated while stirring and preferably dispersed into the millbase using at least medium shear forces for a minimum of 10 minutes. It is recommended to add CLAYTONE-HT directly after the addition of pigments and fillers before dispersion. For maximum efficiency, CLAYTONE-HT should be incorporated with a polar activator.

Incorporation as a pre-gel:
To produce a pre-gel, the following suggested formulation can be used:

- 85–87 wt. % solvent
- 10 wt. % CLAYTONE-HT
- 5–3 wt. % wetting and dispersing additive (if required)

CLAYTONE-HT is added to the solvent while stirring and dissolved at the highest possible shear forces. The wetting and dispersing additive can also be used to reduce the pre-gel viscosity. In most solvents a polar activator must be added.

Possible polar activators are:
Propylene carbonate, 95/5 methanol/water,
Ethanol/water, 95/5
Acetone or isopropanol

The optimum amount of polar activator will generally vary between 20 % to 60 % of the weight of CLAYTONE HT and should be experimentally determined for each formula.

Printing inks

Special features and benefits
CLAYTONE-HT can be used in ink formulations with a wide polarity range. It improves rheological properties such as flow control, anti-misting and anti-settling. The additive is compatible with organic, inorganic and carbon black pigments.

Recommended use
CLAYTONE-HT is recommended for use with offset inks where good flow, anti-misting and anti-settling properties are required in wide polarity systems.

Recommended levels
0.2–2 % additive (as supplied) based on the total formulation.

The above recommended levels can be used for orientation. The optimum dosage should be determined by application-related test series.

Incorporation and processing instructions
CLAYTONE-HT does not require heat for dispersion. It may be incorporated in the grind phase and subjected to high shear. Alternatively, in many formulations, CLAYTONE-HT can be post-added under high shear.

Lubricants and mold release

Special features and benefits

CLAYTONE-HT is a thickener for low- to medium-polar base oils in greases and lubricants.

Greases with CLAYTONE-HT exhibit highly constant thickening before and after stress as well as a low level of oil separation. Especially for greases with high usage temperatures, CLAYTONE-HT is preferred due to the fact that the greases do not have a drop point and the thickening effect is retained at high temperatures.

In lubricants, CLAYTONE-HT is used to create a thixotropic flow behavior in the base oils. This allows dry lubricants, such as graphite and PTFE, to stabilize and prevents sedimentation.

The high level of purification during the manufacturing process of CLAYTONE-HT results in a low level of abrasive accompanying minerals, which leads to good friction values with low abrasion, especially in lubricant applications.

Recommended use

CLAYTONE-HT is used as a thickener in low- to medium-polar base oils.

Recommended levels

For NLGI class 2:

4–8 % additive (as supplied) based on the total formulation, in mineral oils and naphthenic oils.

8–12 % additive (as supplied) based on the total formulation for polyalphaolefins, ester oils, and vegetable oils.

In lubricant applications:

1–4 % additive (as supplied) based on the total formulation.

The above recommended levels can be used for orientation. The optimum dosage should be determined by application-related test series.

Incorporation and processing instructions

To achieve the optimum effectiveness, CLAYTONE-HT requires both a high shear force as well as the addition of a polar activator during incorporation.

The following steps in the manufacture of greases are recommended:

1. Incorporation of CLAYTONE-HT into the base oil using a mixer or dissolver.
2. Addition of the polar activator (mixer or dissolver).
3. Dispersion by means of a colloid mill or homogenizer.

As polar activator for CLAYTONE-HT, we recommend, e.g.:

- Propylene carbonate or propylene carbonate/water (95/5)
- Methanol or methanol/water (95/5)
- Ethanol or ethanol/water (95/5)

20 % activator based on the CLAYTONE-HT, has been found to be a good initial dosage.

Download
our app:
byk.com/app

Your local contact

BYK-Chemie GmbH
Abelstraße 45
46483 Wesel
Germany
Tel +49 281 670-0
info@byk.com
www.byk.com

ANTI-TERRA®, AQUACER®, AQUAMAT®, AQUATIX®, BENTOLITE®, BYK®, BYK-AQUAGEL®, BYK®-DYNWET®, BYK-MAX®, BYK®-SILCLEAN®, BYKANOL®, BYKCARE®, BYKETOL®, BYKJET®, BYKONITE®, BYKOPLAST®, BYKUMEN®, CARBOBYK®, CERACOL®, CERAFAK®, CERAFLOUR®, CERAMAT®, CERATIX®, CLAYTONE®, CLOISITE®, DISPERBYK®, DISPERPLAST®, FULACOLOR®, FULCAT®, GARAMITE®, GELWHITE®, HORDAMER®, LACTIMON®, LAPONITE®, NANOBYK®, OPTIBENT®, OPTIGEL®, PURABYK®, RECYCLOBYK®, RHEOBYK®, SCONA®, SILBYK®, TIXOGEL® and VISCOBYK® **are registered trademarks of the BYK group.**

The information contained herein is based on our current knowledge and experience. No warranties, guarantees and/or assurances of any kind, either express or implied, including warranties of merchantability or fitness for a particular purpose, are made regarding any products mentioned herein and data or information set forth, or that such products, data or information may be used without infringing intellectual property rights of third parties. Any information about suitability, use or application of the products is non-binding and does not constitute a commitment regarding the products' properties, use or application. Contractual terms and conditions, in particular agreed product specifications, always take precedence. We recommend that you test our products in preliminary trials to determine their suitability for your intended purpose prior to use. We reserve the right to make any changes and to update the information herein without notice.