

Polymer processed micro titanium dioxide dispersant PXWT-1

PXWT-1 is a stable water dispersant made by meticulously surface coating silica-processed micro titanium dioxide with alkyl acrylate copolymer. PXWT-1 can be blended simply with emulsified agents in aqueous phase and promises excellent stability and strong SPF effects. In addition, because PXWT-1 is very compatible with carbomers, it is possible to make stable gels without condensing the titanium dioxide, even when adding the product directly to a carbomer.

● Features

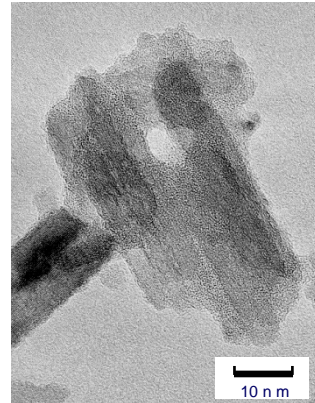
- Can be used in blending with aqueous phase
- Can be added directly to carbomers
- Preserves stable condition even at high concentrations

● General characteristics

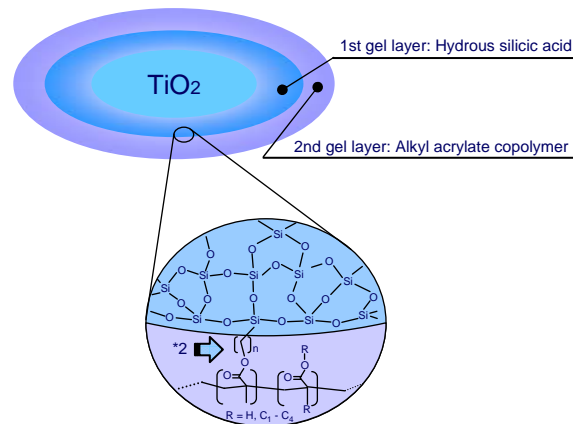
| General characteristics | |
|---|---------------------------|
| Appearance | White liquid |
| Nonvolatile portion | 30% |
| Viscosity | < 100 mPa·s |
| pH | Neutral - weakly alkaline |
| Titanium dioxide crystallization | Rutile |
| Average primary particle size of titanium dioxide | 15 nm |
| Composition | |
| Titanium dioxide | 17.8% |
| Silica | 7.9% |
| Alkyl acrylate copolymer*1 | 3.3% |
| Sodium myristyl sulfate | 0.6% |
| Sodium laureth sulfate | 0.2% |
| Methylparaben | 0.18% |
| Ethanol | No more than 0.1% |
| Water | Balance |

*1: Alkyl acrylate copolymer: Hydrolysisate of alkyl acrylate/alkyl methacrylate/w-(trialkoxysilyl) alkyl methacrylate copolymer

● Surface processing situation

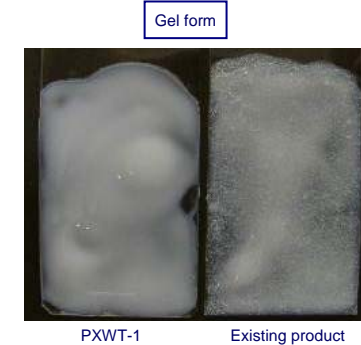


● Conceptual diagram of polymer processing

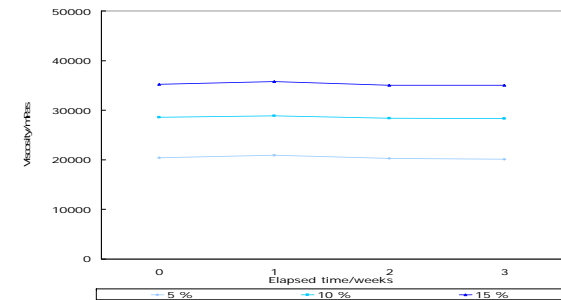


*2: Part of the alkyl acrylate copolymer and hydrous silicic acid is silylated and immobilized.

● Compatibility with carbomers



Viscosity over elapsed time (50° C)



Form: O/W emulsion (carbomer 0.5% formulation)
 Blended solids: 5%, 10%, 15%
 Measurement: Brookfield digital viscosity meter, model DV-1+ (6 rpm, 25°C)

● SPF (in vivo)

| | |
|-----|----|
| 15% | 23 |
| 10% | 15 |
| 5% | 11 |

Form: O/W emulsion (carbomer 0.5% formulation)
 Blended solids: 5%, 10%, 15%
 Coating volume: 2 mg/cm²
 Measurement: In accordance with JCIA method