

## Polymer-based Mud Additive (Bentonite Combination Type)

# *TG Liquid-A*

TG Liquid-A is a emulsion type mud additive having an acrylic water soluble polymer as its main component and it is a mud additive that can be independently used to enable excavation employing the muck mud discharge method as part of the pressurized mud and soil shielding method. In addition, when employing the pressurized pumping method or when excavating ground consisting of gravel, TG Liquid-A can be used in combination with bentonite to make up for the lack of binders and serve as a mud additive that exhibits a thickening effect as well as the effect of blocking water.

## Features of TG Liquid-A

### 1) Liquid product

Excellent solubility of TG Liquid-A improves work efficiency.

### 2) Prevents blowouts with effect of blocking water

Due to its thickening effect, TG Liquid-A prevents blowouts from the screw conveyor during excavation of water-bearing strata and stabilizes the working face.

### 3) Combined effects

Effects are maximized by combined use with bentonite as a greater thickening effect can be obtained by adding a small volume of TG Liquid-A.

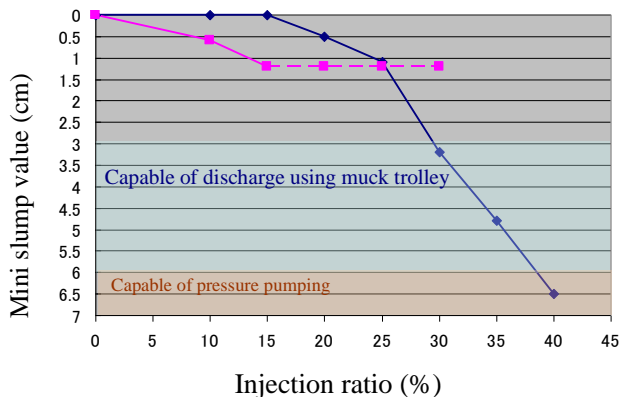
## Dissolution Properties of TG Liquid-A

Dissolution concentration (kg/m <sup>3</sup> )	Dissolution viscosity (cps)
4	160
6	275
8	540
10	800

## Properties of TG Liquid-A

Main component	Acrylic copolymer
Appearance	Light yellow liquid
Specific gravity	1.00 – 1.20
pH	7.5 – 8.5

## Usage Example of TG Liquid-A

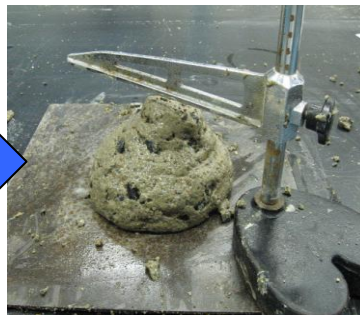


The graph and photos are from the results of conducting a mini slump test upon mixing a mud additive combining TG Liquid-A and bentonite to earth and sand.  
 \* For comparison, a mud additive test was conducted with a bentonite solution.

— Bentonite + TG Liquid-A  
 - Bentonite solution



Before adding mud additive



After adding TG Liquid-A (0.5%)  
 + bentonite (80 kg/m<sup>3</sup>) solution  
 Injection ratio: 40%  
 Mini slump value: 6.5 cm



After adding bentonite (80 kg/m<sup>3</sup>) solution  
 Injection ratio: 30%  
 Mini slump value: Collapsed (non-measurable)

## Packaging

- 18 kg can
- 1 m<sup>3</sup> container

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