

**All Soil Type Compatible Mud Additive**

# TG Slime I (Primary Agent / Supplementary Agent)

Conventional mud additives required the selection of an appropriate mud additive depending on the soil quality. TG Slime I is a special polymer-type mud additive that is capable of plastically fluidizing earth and sand of a wide range of qualities (from clay layers to gravel layers) without filling it with minerals such as bentonite.

As it is possible to improve the quality of earth and sand to have better consistency, it suppresses the sedimentation of gravel and makes pressurized pumping easier.

With various earth and sand discharge methods, TG Slime I exhibits effects with discharge methods ranging from those using muck pipes to the pressurized pumping method.

**<Features of TG Slime I>**

- (1) By adjusting the formulating concentration and additive ratios, TG Slime I is capable of being used with various types of soil from clayish soil to gravelly soil. In addition, TG Slime I is compatible with all types of discharge methods (muck pipe discharge, pressurized pumping).
- (2) As TG Slime I realizes plastic fluidity by being mixed into excavated soil, this prevents clogging within the chamber. This reduces the frictional resistance, makes it possible to reduce the torque of cutters and screw conveyers, and makes pressurized pumping of mud easier.
- (3) Unlike clay- and bentonite-based mud additives, TG Slime I can be easily adjusted by being mixed with a small amount of water. This reduces the size of equipment and storage space.
- (4) As there is no worry of dehydration even when mixed with excavated soil and it does not penetrate into the ground, the ground can be stabilized to realize stability of the working face.
- (5) As earth and sand can be improved to have better consistency by also using the TG Slime supplementary agent, this suppresses the sedimentation of gravel and makes pressurized pumping easier.

\*Although basically sufficient effects can be exhibited with the primary agent alone, for soil having properties that require the use of the supplementary agent, upfront tests are to be performed to decide the additive amount, etc.

\*When also using the supplementary agent, it may be necessary to inject water from a water injection ring.

**<Properties of TG Slime I>**

<b>M a i n c o m p o n e n t</b>	<b>Sodium Carboxymethyl Cellulose Acrylic acid –based copolymer Silicate mineral</b>
<b>A p p e a r a n c e</b>	<b>Pale yellow powder</b>
<b>S p e c i f i c g r a v i t y</b>	<b>2.00—2.20</b>
<b>p H</b>	<b>7.0 – 9.0 (0.1% solution)</b>

## <Table of Soil Quality Compatible TG Slime I Concentrations>

Gravel (%)	Sand (%)	Clay (%)	Concentration (%)	Gravel (%)	Sand (%)	Clay (%)	Concentration (%)	Gravel (%)	Sand (%)	Clay (%)	Concentration (%)
80	0	20	0.4 - 0.6	90	0	10	1.0 - 1.5	95	0	5	1.2 - 1.5
64	16	20	0.2 - 0.4	72	18	10	0.8 - 1.0	76	19	5	
40	40	20		45	45	10		47.5	47.5	5	
24	56	20	0.1 - 0.2	27	63	10	0.4 - 0.8	29	66	5	1.0 - 1.2
16	64	20		18	72	10		19	76	5	
0	80	20		0	90	10		0	95	5	
85	0	15	0.8 - 1.2	92	0	8	1.0 - 1.5	97	0	3	1.5 - 1.7
68	17	15	0.4 - 0.6	74	18	8	1.0 - 1.2	77	20	3	
42.5	42.5	15		46	46	8		48.5	48.5	3	
25	60	15	0.2 - 0.4	28	64	8	0.8 - 1.0	29	68	3	1.2 - 1.7
17	68	15		18	74	8		20	77	3	
0	85	15		0	92	8		0	97	3	

\* The mud injection rate in regard to the above data is fixed at 25 - 30%.

\* The above table may not be applicable depending on the soil quality.

## <Viscosity of TG Slime I>

Concentration	Viscosity (cp)
0.2%	130
0.4%	330
0.8%	1000
1.0%	1800
1.2%	2050
1.7%	2850

### <Packaging of TG Slime (primary agent)>

- 20 kg paper bag
- 500 kg flexible container
- Loose

### <Packaging of TG Slime (supplementary agent)>

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

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