SIDHYA ASIA
CHEMICAL PRIVATE LIMITED

TDS

PRODUCT DATA SHEET

Sidhya® Roc Drive 105

Biodegradable Soil Conditioner for TBM Tunneling application

Description

Sidhya® Roc Drive 105 is a biodegradable additive developed to be used in the tunnel boring machine (TBMs) as soil conditioner. The product uses advance polymeric technology to generate foam which creates a temporary cohesion of the soil which improves the performance of the soil through the screw conveyor. Sidhya® Roc Drive 105 is designed for critical geological conditions with wet sandy, clay and silty gravel profile. The product reduces the wear and tear of the cutter head and enables faster advance rates even in critical geological profiles.

Applications

Sidhya® Roc Drive 105 is designed to reduce the cohesion force of soil with the tunnel boring machine. The product generates high quality foam enabling high improved quality of excavated soil. The following are some applications of the product:

- Suitable for mining soil profile with gravel, silt and clay.
- Increases the productivity of EPB tunneling boring machines.
- Reduces stickiness which could lead to constraints for tunnel boring machine.
- The product is suitable for Environmentally friendly mucking works.
- Usage of soil conditioners leads to various technical, economical and ecological benefits.

Guidelines for Use

Sidhya® Roc Drive 105 is designed to be used with standard foam generators available on EPB tunnel boring machines. It is injected by foam injectors by mixing it with air and water into the cutterhead and working chamber to condition the soil by generating foam.

When injected by a foam generator the foam expansion ratio (FER) can vary between 6 to 20 and the foam injection ratio can vary from 5 to 80 depending on the soil profile encountered during mining.

Technical Specifications

Color	Colorless to Yellowish
Appearance	Homogenous
State	Liquid
Specific Gravity	1.00 ± 0.02 @ 20^{0}C
pH	Minimum 7.0
Shell Life	12 months from the date of manufacturing if stored as per recommendations and original sealed packing.

Advantages

Sidhya® Roc Drive 105 is a soil conditioner designed for faster advance rates of TBM in critical soil profiles. The product creates a highly stable foam to improve the rheology of the soil and hence providing the following benefits:

- Reduces the friction between the soil and cutter head of TBM.
- Increase in advance rates and productivity of TBM.
- Reduces stickiness which could lead to constraints for tunnel boring machine.
- Promotes the easier mining of soil during tunneling.
- Decrease in cost of maintenance of TBM and screw conveyor.
- Environmentally friendly and Non-Toxic in nature.

Dosage

The dosage of Sidhya® Roc Drive 105 depends on the soil profile encountered. Typically, the soil conditioner is used at is used 0.5 to 6.0% solution in water. In special applications, for further stability and strengthening of foam, Sidhya® Soil Plast series is also recommended. The Polymers of Sidhya® Soil Plast series further improves the property of the excavated soil and provides foam stability.

We always recommend conducting preliminary tests at site with our Sidhya® Tunnel Team to further optimize the dosage. Preliminary tests are conducted to determine the consumption which may vary from the recommended dosage as stated above.

Storage

Sidhya® Roc Drive 105 has a shell life of 12 months provided the temperature is kept between +5.0^{0}C to +50.0^{0}C. Please contact Sidhya® technical team if the product falls outside the temperature range.

Packaging

Sidhya® Roc Drive 105 is available in 200 liters drums, 1000 litres IBC and bulk tanker. Please contact our Sales Representative for customized packing and more details.

Legal Notice

The recommendations related to the application and recommendations are given in good faith based on Sidhya's current experience and knowledge of the products. The benefits stated about the product are only applicable if guidelines provided by Sidhya for storing, handling and mixing are followed under normal conditions. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product is always advised to test the product's compatibility and suitability for the intended requirements and application. Sidhya reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned copies of which will be supplied on request.

Sustainability, Health and Safety

End use of the product must read the Material Safety Data Sheet (MSDS) of the product. The MSDS provides information and advice on storage, handling and disposal of the product and instructions related to physical ecological, toxicological and other safety related data.

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