

PRODUCT DATA SHEET

Sika® Stabilizer-4601 TBM

Water-soluble bentonite extender for bentonite-based slurries in mechanized tunneling

PRODUCT DESCRIPTION

Sika® Stabilizer-4601 TBM is a liquid polymer that is used as an extender agent in slurry TBMs. It restructures soils with poor grading and low fines content, improving the mud rheological properties and increasing the plasticity and cohesion of soils. This helps to improve the balance of pressure in the working chamber, leading to better ground stability and slurry extraction.

Slurry TBMs are generally equipped with a double bulkhead at the front of the shield and the air cushion is maintained at the required working pressure between the two bulkheads. With its thickening effect, Sika® Stabilizer-4601 TBM helps the slurry to hold the pressure in the bubble and to be transferred homogeneously to the front of the machine. The modified rheology of the slurry will ensure that any difference in flow between supply and discharge pipes will be evened and better controlled.

USES

Sika® Stabilizer-4601 TBM is used for:

- Stabilizing challenging mix ground conditions
- Overcoming the issue of inadequate support pressure build-up
- Managing excessive groundwater
- Ensuring uninterrupted operation of the Slurry Treatment Plant (STP) by preventing foam production in the STP, avoiding pumps cavitation, and preventing obstruction of the shaker screens.

Sika® Stabilizer-4601 TBM is used for the following areas:

- Coarse and sandy soils with low fine content
- Heavily saturated soils with high water pressure

CHARACTERISTICS / ADVANTAGES

- Very good rheology modifier of bentonite slurry in soils with high porosity and high permeability
- Forms a filter cake creating a thin impermeable layer directly on the front wall and enabling a transformation of excess slurry pressure into effective support stress
- Reduces significantly filtrate losses of the bentonite slurries, ensuring filter cake efficiency, in particular when pumping has ceased and the slurry remains static in the excavation chamber without setting
- Creates plastic deformation properties in the suspension, providing an even and controlled support pressure and an increased face stability
- Easily matches the flow rate and pressure of the slurry with the TBM advance speed and ground conditions
- Highly recommended also during hyperbaric interventions
- Lowers inner friction and abrasiveness of the slurry
- Increases the cohesion of coarse sands and gravels
- Ready for use: no mixing required
- Compatible with API 13A and API 13B bentonite

PRODUCT INFORMATION

Chemical Base	Polymer mixture	
Packaging	Bulk	
	Intermediate Bulk Container (IBC)	1000 L (~264 gal)
	Drum	
	Refer to the current price list for available packaging variations.	
Appearance / Color	Liquid, white	
Shelf Life	6 months from date of production	
Storage Conditions	The Product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +41 °F and +95 °F (+5 °C and +35 °C). Always refer to the packaging. Do not allow the Product to freeze. Refer to the current Safety Data Sheet for information on safe handling and storage.	
Solubility	Miscible with water	
Specific gravity	1.00-1.10	

APPLICATION INFORMATION

Recommended Dosage	The dosage of the Product depends on the following variables: <ul style="list-style-type: none">▪ Type of bentonite▪ Slurry mix design▪ Type of excavated ground▪ Groundwater pressure▪ TBM operation mode Note: Preliminary laboratory trials are always recommended to determine the optimum consumption and injection parameters. Contact Sika Technical Services for additional information.
Product Temperature	Protect from freezing.

SYSTEM INFORMATION

Compatibility	Compatible with Sika® admixtures and other Sika® products. Contact Sika Technical Services for additional information.
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BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using

APPLICATION INSTRUCTIONS

APPLICATION

Direct injection into the TBM excavation chamber is recommended for best Product performance.

OTHER RESTRICTIONS

See Legal Disclaimer.

LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- FOR PROFESSIONAL USE ONLY

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com or by calling SIKA's Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.**

Sale of SIKA products are subject to the Terms and Conditions of Sale which are available at <https://usa.sika.com/en/about-us/terms-conditions-of-sale.html> or by calling 1-800-933-7452.

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