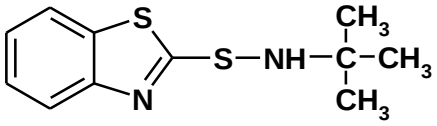
SULFENAX® TBBS

Chemical name: N-tert-butyl-2-benzothiazolesulphenamide (TBBS)

Empirical formula: $C_{11}H_{14}N_2S_2$

Structural formula:



Characteristics: Product of creamy to grey colour, characteristic smell, non-hygroscopic.

Solubility: Sulfenax® TBBS is soluble in benzene, ethanol, chloroform, ethyl acetate.

Final form: Pellets (PT)

Quality parameters:

Content of active substance	min. 95.5 %
Melting temperature	min. 104.0 °C
Content of ash	max. 0.4 %
Density at 20°C	1 280 kg.m^{-3}

Packaging:
Paper bags with net weight 25 kg, placed on pallets with 600 kg total weight and fixed with PE stretch foil, or in big-bags with net weight 500, 600 or 1 000 kg placed on pallets.

Storage and manipulation:
Sulfenax® TBBS is stored in closed packing, in dry and ventilated storage rooms, at a temperature below 35°C. The material should be protected against direct effect of solar radiation. Prevent from a direct contact of the material with skin, eyes and respiratory organs during manipulation.

Application:
Sulfenax® TBBS is used in rubber industry in processing of natural and synthetic rubber in rubber compounds as a fast accelerator of vulcanization with delayed action. It provides good physical and mechanical properties, high crosslinking efficiency and good modulus. Generally it is used as accelerator of vulcanization of rubber materials with unsaturated double bonds (e.g. polyisoprene, polybutadiene, polybutadienestyrene, polyethylenepropylene and polyacrylonitrile rubber, etc.) alone or in combination with secondary accelerators (mainly guanidines, thiurams, dithiocarbamates). It has a higher processing safety when compared with Sulfenax® CBS. It is used mainly in rubber compounds for production of tires, less in production of technical rubber. In the rubber compounds for production of tires Sulfenax® TBBS is used alone or in combination with secondary accelerators (e.g. diphenylguanidine, tetramethylthiuram disulphide, and so on). Sulphur acts as a vulcanization agent. In the non-tire sector it is used for production of conveyor belts, hoses and other thick-wall products, but to a lower extent as with Sulfenax® CBS. The rubber, processed with using of Sulfenax® TBBS, has good physical and mechanical properties. In order to reach an increased resistance against heat ageing, it can be applied in semi-EV and EV vulcanization systems with a lower sulphur dosing or when using sulphur donors. As no carcinogenic nitrosamines are formed when using Sulfenax® TBBS, when combined with retarders of vulcanization it can replace the morpholine-based sulphonamide accelerators.

Dosing:
In case of a sulphur vulcanization of natural rubber, Sulfenax® TBBS is used in amount of 0,5 to1,6 phr. When using it in compounds with polybutadienestyrene rubber, the dosing is within 1,0 to 2,5 phr. In the semi-EV and EV vulcanization systems the dosing is 2,0 to 5,0 phr. In such instances, sulphur in amount of 0,3 to 1,0 phr or a sulphur donor, including their combinations, serve as vulcanization agents.

The data given are only of an informative character and are not comprehensive. Further information can be obtained:

DUSLO

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