Schill+Seilacher struktol®

Technical Data Sheet

STRUKTOL® SU 135

Preparation of Insoluble Sulphur

Composition

Total sulphur	75 %
Organic dispersing agent	24 %
Inorganic dispersing agent	1 %

Properties

Appearance		Non-dusting, friable powder
Density	[kg/m³]	1500
Bulk density	[kg/m³]	600
Content of insoluble sulphur	[%]	36
Physiological behaviour		Refer to safety data sheet
Storage stability		At least 18 months under normal storage conditions in closed bags in cool rooms(keep away from ammonia and amine containing compounds)
Packaging		20 kg bags
Factor for dosage		1.33

Recommendations for Application

Two basic types of sulphur are used for rubber compounding, i.e. ordinary ground sulphur called „soluble sulphur“ because of its solubility in carbon disulphide (CS_2) and the so-called insoluble sulphur insoluble in CS_2.

This characteristic of the sulphur types is paralleled by their solubility in rubbers: insoluble sulphur is completely insoluble in rubber whilst ground sulphur is in part soluble. This solubility depends upon temperature and excessive sulphur crystallizes from a compound mixed at higher temperatures.
A greyish sulphur bloom appears on the uncured compound surface followed by small sulphur crystals which can no more be dispersed in the rubber compound.

Consequences of sulphur blooming are

- increased scorch risk in areas where sulphur has concentrated
- decreased building tack
- local overcure
- variations in physical properties

When using insoluble sulphur blooming from the uncured compound can be avoided. Whilst ordinary ground sulphur is easily incorporated/dispersed in most rubber compounds, insoluble sulphur can give rise to problems. Owing to static electricity agglomerates are formed which are only partially dispersed.

The specialty dispersing agents contained in STRUKTOL® SU 135 coated sulphur effect a fast incorporation and optimum sulphur dispersion. Static electricity build-up is minimized. The dispersing agents used are non-discolouring and have no influence on the cure rate. The best dispersion performance can be achieved in a mixing temperature range between 60 – 80 °C.

In STRUKTOL® SU 135 part of the sulphur is present in the soluble state. The ratio of insoluble sulphur to soluble sulphur is well balanced so that in most applications STRUKTOL® SU 135 can offer advantages like insoluble sulphur itself. Blooming can in particular be avoided at low sulphur dosages or in compounds which dissolve sulphur to an acceptable extent.

When using insoluble sulphur it is important to recognize that this form reverts to soluble sulphur at elevated temperatures, i.e. it should be admixed at temperatures below the critical reversion point (80 °C). This also applies to any further processing of the finalized compound.

It is possible that the bags containing STRUKTOL® SU 135 discolour. This colour change does not influence the effectivity of the product.

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