

Technical Data Sheet

STRUKTOL® SU 109**STRUKTOL® SU 50****STRUKTOL® SU 135**

Preparations of Insoluble Sulphur

Composition	STRUKTOL SU 109	STRUKTOL SU 50	STRUKTOL SU 135
Total sulphur	75 %	50 %	75 %
Organic dispersing agent	24 %	20 %	24 %
Inorganic dispersing agent	1 %	30 %	1 %

Properties	STRUKTOL SU 109 non-dusting, friable powder	STRUKTOL SU 50 non-dusting, friable powder	STRUKTOL SU 135 non-dusting, friable powder
Density [kg/m ³]	1500	1700	1500
Bulk density [kg/m ³]	450	550	600
Content of insoluble sulphur [%]	73	48,5	36

Physiological behavior

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)

Packing

20 kg bags

Factor for dosage

1.33

2.0

1.33

The data given are typical values which are not intended for use in preparing specifications. For test methods refer to the corresponding supplement.



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 (CS₂) and the so-called insoluble sulphur insoluble in CS₂.

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 green compound 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 green 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 of this type agglomerates are formed which are only partially dispersed.

The specialty dispersing agents contained in STRUKTOL coated sulphurs effect a fast incorporation and optimum sulphur dispersion. Static electricity is minimized. The dispersing agents used are non-discolouring and have no influence on the cure rate.

STRUKTOL SU 50 with its sulphur content of 50 % gives optimum dispersion and is suitable for most critical applications.

STRUKTOL SU 109 containing 75 % of sulphur is used where a low content of dispersing agent is desirable.

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 also important to note that the reversion of insoluble sulphur is not only promoted through temperature, but also through inorganic bases (amines). Special attention must be paid to the accelerator system in compounding and care should be taken that activators are not too alkaline.

The suggestions for application and usage of our products as well as possible proposed formulations are meant to advise only to the best of our knowledge. This information is without obligation and does not release customers from their own testings to ensure suitability for intended processes and use. Liability is only accepted in case of intention or gross negligence.

Liability for any defects caused by minor negligence are not accepted. Each producer is responsible and liable to observe legislation and patent rights of third parties.

This new leaflet replaces all previously printed documentation.

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