

## MIKROFINE<sup>®</sup> TSH

MIKROFINE<sup>®</sup> TSH is a nitrogen releasing chemical blowing agent for expanded rubbers processed in the temperature range of 120-160° C.

### 1 PRODUCT INFORMATION

<b>Main constituent</b>	:	p-Toluenesulfonylhydrazide CAS Number [1576 -35-8] Mol. Formula C <sub>7</sub> H <sub>10</sub> N <sub>2</sub> O <sub>2</sub> S Mol.wt. 186
<b>Physical form</b>	:	Free flowing cream colored powder
<b>Solubility</b>	:	Practically insoluble in water. Soluble in methanol, ethanol, acids and alkalis.
<b>Gas composition</b>	:	Mainly nitrogen and steam
<b>Health, safety &amp; handling information</b>	:	Relevant information can be found in sheet No. HPLA/MSDS/M/CBA/06

### 2 SPECIFIED PROPERTIES

<b>Decomposition temperature (°C)</b> (open capillary tube method)	:	108 ± 2
<b>Volatility (% w/w)</b>	:	0.5 max.
<b>Gas content</b> (ml/gm at STP)	:	110 ± 5

### 3 SPECIAL FEATURES

MIKROFINE<sup>®</sup> TSH melts at 100°C and decomposes at 110°C. It does not give adequate rate of gas evolution below 140°C when decomposed thermally. Useful quantities of gas can be generated at temperatures as low as 120°C while using activating compounds such as urea, thiourea, and certain amines and if metal containing compounds are present. It decomposes to give a solid residue of a disulphide, a sulphide sulphone and a gaseous mixture of nitrogen and steam.

MIKROFINE<sup>®</sup> TSH does not dissolve in oils and plasticisers, generally used in compounding. Due to its fine particles, MIKROFINE<sup>®</sup> TSH can be dispersed during processing if it includes a milling operation.

MIKROFINE<sup>®</sup> TSH can also be pre-mixed with appropriate oil or plasticizer. When MIKROFINE<sup>®</sup> TSH is incorporated into stocks by hot processing methods involving temperature above 100°C, it loses its efficiency due to pre-decomposition.

MIKROFINE<sup>®</sup> TSH produces microcellular sponge, which does not get discolored in curing or on exposure to light.

MIKROFINE<sup>®</sup> TSH does not impart any objectionable odour to rubber sponge compounds. MIKROFINE<sup>®</sup> TSH causes a marked activation of cure system; hence addition of secondary activation accelerator is not needed.

### 4 APPLICATIONS

#### MIKROFINE<sup>®</sup> TSH IS USED FOR:

- the production of sponge rubber and slipper soles.
- the foaming of unsaturated polyesters.
- the expansion of most types of rubber and rubber cloth laminates.
- low temperature vinyl applications where decomposition is desired prior to complete fusion of PVC.
- production of epoxy foam where 4,4'-Oxybis(benzenesulfonyl hydrazide) cannot be used because of its higher decomposition temperature.

When MIKROFINE<sup>®</sup> TSH is incorporated into unsaturated polyester systems, it reacts exothermically with other components of the system to give cross-linked polyester foams.

### 5 DOSAGE

1.5 - 6.0 PHR depending on the polymer used and the extent of expansion required.

## 6 PACKING

MIKROFINE<sup>®</sup> TSH is packed in 20 Kg UN approved corrugated cartons with a polythene liner inside or as per customer's requirement.

The information given in this document is only a recommendation, believed to be reliable and is given in good faith but without warranty. Our advice does not release users from the obligation of checking its validity. The user should test the product to ascertain the suitability for the intended use. Specified properties mentioned in this document are based on our historical production performance and these properties or the whole document is subject to change without any prior notice, at our sole discretion. We are under no obligation to recall earlier issued documents.

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