

# Technical Data Sheet

## Applications

- Tires

## Product Description

Chemical name: Polymeric sulfur

Crystex™ HD OT 20 is a non-blooming vulcanizing agent for unsaturated elastomers.

### MAJOR APPLICATIONS AND PROPERTIES:

- Crystex™ HD OT 20 is polymeric sulfur and is insoluble in elastomers. Consequently it will retard bin scorch, prevent migration of sulfur and preserve surface tack. This is important in the manufacture of tires and other plied-up rubber goods.
- At vulcanization temperatures Crystex™ HD OT 20 will de-polymerize to soluble sulfur and will behave similar to "Rubber Maker's" sulfur.
- Crystex™ HD OT 20 is a metastable product which can revert to soluble sulfur if not stored under proper conditions.
- Reversion of Crystex™ HD OT 20 to soluble sulfur is also catalyzed by alkaline products. The presence of alkaline accelerators can be critical.
- Crystex™ HD OT 20 is a special grade with improved flowability and dispersibility.
- Crystex™ HD OT 20 is used in compounds containing a relatively large sulfur loading above the solubility of sulfur in the elastomer.
- Crystex™ HD OT 20 is non-staining and non-discoloring.

## Typical Properties

Property	Typical Value, Units
<b>General</b>	
Form	High dispersibility, insoluble sulfur, 20% oil treated powder
Specific Gravity @ 20°C	1.61 approximate
Bulk Density	
Packed	550-800 kg/m <sup>3</sup>
Unpacked	350-550 kg/m <sup>3</sup>
Mean particle size	<30 µm

## Compounding Information

Crystex™ HD OT 20 is designed for improved flowability and dispersibility. It has the following advantages:

- Improved flowability. The improved product flowability provides easy handling, a less dusty environment and less tendency for product to compact.
- Improved dispersibility. The special additive package in Crystex™ HD OT 20 helps to reduce the tendency for electrostatic charge build-up and hence the formation of agglomerates which can be formed during mixing as a result of the small particle size of insoluble sulfur.

Because Crystex™ HD OT 20 is insoluble sulfur it is metastable. Therefore temperatures should be kept as low as possible during mixing. Between 100°C and 130°C, significant reversion to soluble sulfur can take place.

If dry pre-mixes are produced of Crystex™ HD OT 20 and other vulcanization chemicals, reversion can take place if Crystex™ HD OT 20 is in contact with the alkaline components.

## Handling Precautions

For detailed information on toxicological properties and handling precautions please refer to the current Safety Data Sheet. This information sheet can be downloaded from our web site or requested from the nearest Eastman office and should be consulted before handling this product.

## Storage

Store Crystex™ in a well ventilated area below 30°C, avoiding exposure of the packaged product to direct sunlight. Do not store near products that can emit free amines such as sulfenamides and DTDM. Amines and other alkaline vapors can cause Crystex™ to revert to "Rubber Maker's" sulfur at any temperature. High temperatures will also cause Crystex to revert to "Rubber Maker's" sulfur. When stored in closed containers below 20°C the reversion rate is less than 1%/year. Reversion of Crystex™ could result in sulfur bloom of uncured rubber.

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