



## Material Safety Data Sheet

Last Revision: 11/22/2011  
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### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: CRYSTEX® HD OT 20  
MSDS NO.: FLXP0083  
Chemical Name: Polymerized Sulfur, Naphthenic Oil, Proprietary Additive  
Synonyms: Insoluble Sulfur, Oil Treated  
Use: Vulcanizing Agent  
Manufactured By: Flexsys America L.P. 260 Springside Drive Akron OH 44333-2433 USA

Emergency Telephone: CHEMTREC: 1-800-424-9300 [TOLL FREE - USA and Territories]  
703-527-3887 [ELSEWHERE - Collect Calls Accepted]  
CANUTEC: 613-996-6666 [Canada]  
SETIQ: 91-800-00-214 [Mexico]

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### 2. HAZARDS IDENTIFICATION

Emergency Overview: WARNING! May irritate the eyes. May irritate the skin. May irritate the lungs. Burning sulfur emits highly toxic fumes! Dust suspended in air ignites easily.

Eye Contact: May irritate eyes. Mild Eye Irritation: signs/symptoms can include redness, swelling, pain and tearing. Dust may cause irritation and inflammation. May cause abrasive injury.

Skin Contact: Causes mild skin irritation. Causes drying of the skin. May cause a rash and itching of the skin. Mild Skin Irritation (after prolonged or repeated contact): sign/symptoms can include redness, swelling and itching.

Inhalation: May irritate mouth, nose and throat. May irritate the lungs. Exposure to dust particles generated from this material may cause irritation of the respiratory tract. Irritation (upper respiratory): signs/symptoms can include soreness of the nose and throat, coughing and sneezing.

Ingestion: Swallowing a relatively large amount of this material is unlikely to produce serious illness or death.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
Polymeric Sulfur	9035-99-8	72
Naphthenic Oils	Various	18 - 20
Sulfur	7704-34-9	8
Polymeric Binder	Trade Secret	1 - 2

### 4. FIRST AID MEASURES

In Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists. DO NOT RUB EYES!

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<b>On Skin:</b>	Remove contaminated clothing. Wash skin with water, using soap if available. Get medical attention if irritation persists.
<b>Inhaled:</b>	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
<b>Swallowed:</b>	Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration. Never give fluids or induce vomiting if the victim is unconscious or having convulsions.
<b>Notes To Physician:</b>	No specific antidote. Treatment based on sound judgment of physician and individual reactions of patient. Observe for signs of respiratory distress.

#### 5. FIRE FIGHTING MEASURES

<b>Flash Point (°F/C):</b>	315°F / 157°C [Sulfur]
<b>Flash Point Method:</b>	Cleveland Open Cup
<b>Autoignition Temp. (°F/C):</b>	449°F / 232°C [Sulfur]
<b>Lower Explosion Limit (LEL):</b>	30 g/m <sup>3</sup> Kst = 40.7 bar-m/sec; Dust Hazard Class ST-1
<b>Upper Explosion Limit (UEL):</b>	>2000 g/m <sup>3</sup>
<b>Extinguishing Media:</b>	Use water fog, carbon dioxide, foam or dry chemical.
<b>Special Exposure Hazards:</b>	Fight fire from a safe distance and from a protected location. Combustible dust when in a finely divided and highly suspended state. Do not allow runoff to enter waterways.
<b>Special Protective Equipment:</b>	Fire fighters should wear full impervious protective clothing, including self-contained breathing equipment.
<b>Unusual Fire/Explosion Hazards:</b>	Toxic emissions may result if product is involved in a fire. Fire produces highly toxic sulfur dioxide gas. Sulfur fires may smolder and re-ignite. Minimum Ignition Energy [MIE] = 42 mJ. USE INERT GAS TO REDUCE OXYGEN LEVEL TO 7% OR LESS FOR MAXIMUM SAFETY. Consult the "OIL-TREATED CRYSTEX® SAFETY WARNINGS and HANDLING GUIDE" for additional information.

#### 6. ACCIDENTAL RELEASE MEASURES

<b>Spill Procedures:</b>	Wear dust-tight goggles. Wear gloves. Isolate the area. Turn off/remove all potential sources of ignition. Work only with non-sparking tools and equipment.
<b>Procedure for Cleaning/Absorption:</b>	Scoop up and remove material. Reuse if not contaminated. Do NOT spread spilled product with water.
<b>CERCLA Reportable Quantity (RQ):</b>	Not Applicable

#### 7. HANDLING AND STORAGE

<b>Handling:</b>	Keep away from heat and open flame. Static ignition hazard can result from handling and use. Avoid breathing dust; if exposed to high dust concentration, leave area immediately. Use only in a well ventilated area. Avoid contact with skin and eyes. Good hygienic practices should be observed. Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded with material. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Reclose containers of unused product. USE INERTING GAS TO MAINTAIN OXYGEN LEVELS AT OR BELOW 7% FOR MAXIMUM SAFETY. CONSULT THE "OIL-TREATED CRYSTEX® SAFETY WARNINGS and HANDLING GUIDE" for additional information.
<b>Storage:</b>	Store closed containers in a cool, dry, well-ventilated area. Store away from oxidizing agents, amines and strong bases. Avoid exposure to direct sunlight.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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<b>Eye Protection:</b>	Wear safety glasses or goggles to protect against exposure. Wear dust-proof chemical goggles. Recommended if eye contact likely. Wear eye protection appropriate to handling activities.
<b>Skin Protection:</b>	Normal work coveralls. Launder contaminated clothing before reuse.
<b>Gloves:</b>	Use gloves as a standard industrial handling procedure.
<b>Respiratory Protection:</b>	Use in a well ventilated area. Appropriate respiratory protection shall be worn when applied engineering controls are not adequate to protect against inhalation exposure. An approved respirator (i.e. NIOSH, etc.) should be worn when exposures are expected to exceed the applicable limits.
<b>Ventilation:</b>	General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits during the use of this product. Adequate ventilation should be provided to keep dust concentrations below acceptable exposure limits. Discharge from the ventilation system should comply with the applicable air pollutions control regulations. Eliminate ignition sources.
<b>Airborne Exposure Limits:</b>	Nuisance Dust. OSHA PEL/8Hr-TWA = 15 mg/m <sup>3</sup> (Total Dust). OSHA PEL/8-Hr TWA = 05 mg/m <sup>3</sup> (Respirable Dust). ACGIH TLV/8-Hr TWA = 10 mg/m <sup>3</sup> .

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Yellow Powder
<b>Odor:</b>	SLIGHT
<b>pH:</b>	Not Applicable
<b>Specific Gravity:</b>	1.6
<b>Density:</b>	1600 kg/m <sup>3</sup> @ 20°C (68°F)
<b>Bulk Density:</b>	350-550 kg/m <sup>3</sup>
<b>Melting Point (°F/C):</b>	224-228°F / 107-109°C [Sulfur]
<b>Boiling Point (°F/C):</b>	>831°F / >444°C [Sulfur]
<b>Vapor Pressure:</b>	Negligible @ 20°C
<b>Vapor Density (Air=1):</b>	Not Applicable
<b>% Volatile by Volume:</b>	Not Determined
<b>Solubility in Water:</b>	INSOLUBLE
<b>Other Solubility:</b>	Slightly soluble in Organic liquids, including fats and oils
<b>Viscosity:</b>	Not Applicable
<b>Other Data:</b>	Mean particle size: <30 microns.
<b>Molecular Weight:</b>	Mixture
<b>Molecular Formula:</b>	Mixture

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Stable when stored at room temperature in closed, original container. Stable under normal conditions of handling, use and transportation. Protect from heat Protect from moisture.
<b>Hazardous Polymerization:</b>	WILL NOT OCCUR
<b>Conditions to Avoid:</b>	Keep away from heat, sparks and flame. Avoid any source of ignition. Excessive heat.
<b>Materials to Avoid:</b>	Avoid contact with acidic, basic or oxidizing agents. Do not expose to amines. Contact with copper. Non-protected steel Avoid contamination of product with small amounts of water.
<b>Hazardous Decomposition Products:</b>	Toxic fumes Sulfur dioxide.
<b>Additional Guidelines:</b>	DUST EXPLOSION HAZARD. USE AN INERT GAS TO MAINTAIN OXYGEN LEVELS AT OR BELOW 7% FOR MAXIMUM SAFETY. Do not store near amine-based accelerators. Amine vapors can cause insoluble sulfur to revert to soluble form.

## 11. TOXICOLOGICAL INFORMATION

<b>Acute Oral LD50 (mg/kg):</b>	>4000 mg/kg (Rat)
<b>Acute Dermal LD50 (mg/kg):</b>	>2000 mg/kg (Rabbit)
<b>Acute Inhalation LC50 (mg/l):</b>	Not Determined

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## 11. TOXICOLOGICAL INFORMATION

**Target Organs / Principle Routes of Exposure:** Eyes. Dermal - skin. Inhalation.

<b>Ingestion:</b>	Swallowing a relatively large amount of this material is unlikely to produce serious illness or death.
<b>Skin Contact:</b>	Causes mild skin irritation. Causes drying of the skin. May cause a rash and itching of the skin. Mild Skin Irritation (after prolonged or repeated contact): sign/symptoms can include redness, swelling and itching.
<b>Inhalation:</b>	May irritate mouth, nose and throat. May irritate the lungs. Exposure to dust particles generated from this material may cause irritation of the respiratory tract. Irritation (upper respiratory): signs/symptoms can include soreness of the nose and throat, coughing and sneezing.
<b>Eye Contact:</b>	May irritate eyes. Mild Eye Irritation: signs/symptoms can include redness, swelling, pain and tearing. Dust may cause irritation and inflammation. May cause abrasive injury.
<b>Aggravated Conditions:</b>	Respiratory disorders.
<b>Carcinogenicity Comment:</b>	This product, or one of its ingredients present at 0.1% or more, is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC or OSHA.
<b>Other Information:</b>	None known.
<b>Primary Irritation Effect:</b>	Slightly irritating to skin and eyes.
<b>Carcinogenicity:</b>	Not Determined.
<b>Genotoxicity:</b>	Not Determined.
<b>Reproductive/Developmental Toxicity:</b>	Not Determined.

## 12. ECOLOGICAL INFORMATION

<b>Acute Fish Toxicity:</b>	96Hr LC50 Rainbow Trout: >1000 mg/l. 96Hr LC50 Bluegill Sunfish: >1000 mg/l.
<b>Acute Crustaceans Toxicity:</b>	48Hr EC50 Daphnia Magna: >1000 mg/l
<b>Acute Algae Toxicity:</b>	Not Determined.
<b>Octanol/Water Coefficient:</b>	Not Determined.
<b>Chemical Fate Information:</b>	Not Determined.
<b>Other Information:</b>	Not Applicable

## 13. DISPOSAL CONSIDERATIONS

<b>Disposal of Waste Method:</b>	This product is not regarded as hazardous waste. Dispose in accordance with local regulations. Bury in a licensed landfill or burn in an approved incinerator according to federal, state, and local regulations.
<b>Contaminated Packaging:</b>	Product may be stored in reusable containers. Do NOT contaminate. Store away from ignition sources. Transport with all closures in place. If empty container retains product residues, all label precautions must be observed. Store away from ignition sources. Transport with all closures in place. Return for reuse or dispose according to national or local regulations.

## 14. TRANSPORT INFORMATION

<b>DOT:</b>	Not Regulated
<b>DOT Reportable Quantity (lbs):</b>	None
<b>ICAO/IATA:</b>	See DOT
<b>IMDG:</b>	See DOT
<b>Marine Pollutant:</b>	No
<b>TDG (Canada):</b>	See DOT
<b>Remarks:</b>	CRYSTEX Insoluble Sulfur mixtures containing at least 10% oil are classified as NON-HAZARDOUS in transport.

## 15. REGULATORY INFORMATION

### Worldwide Inventory Status

USA (TSCA):	Listed
Canada (DSL):	Listed
Canada (NDSL):	Not Applicable. Listed on the DSL.
European Union (EINECS/ELINCS):	Listed
Japan (ENCS):	Listed
Korea (ECL):	Listed
Australia (AICS):	Listed
New Zealand (NZ):	Listed
Phillipines (PICCS):	Listed
China (CLECS):	Listed.

### US Regulatory Rules

SARA Section 302:	Not Applicable / None
SARA 311/312 Hazard Categories:	Immediate
SARA 313 Chemical:	Not Applicable / None
RCRA Status:	Not a RCRA waste.

### Other Regulations:

California Proposition 65:	NONE
New Jersey Right-to-Know List:	This product contains one or more chemicals that are listed on the New Jersey Right-to-Know List. Component Sulfur, NJ Substance #1757
Pennsylvania Right to Know List:	Listed Component Sulfur.
Florida Right to Know:	Not Applicable.
Minnesota Right to Know:	Not Applicable
Massachusetts Right to Know Law:	Listed Component Sulfur
FDA Status 21 CFR:	Not Regulated For Use in food contact applications under 21 CFR.

### Canadian Regulations

WHMIS Hazard Class:	NON-CONTROLLED
NPRI:	Not Listed. [Canada]

## 16. OTHER INFORMATION

### Hazard Rating Systems:

HMIS Classification:	HEALTH 1, FLAMMABILITY 1, REACTIVITY 0
NFPA Rating:	HEALTH 1, FLAMMABILITY 1, REACTIVITY 0

The following has been revised since the last issue of this MSDS: Density / specific gravity unit of measure correction

Additional Information: Naphthenic Oils used for oil-treatment/dedusting may be one or more of the following:  
CAS# 64742-52-5; 64742-53-6; 64742-65-0

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