

## MATERIAL SAFETY DATA SHEET

### FOR CBS

#### **1. CHEMICAL and COMPANY IDENTIFICATION**

**Product Name:** Rubber Accelerator CBS

**Chemical Name:** N-Cyclohexyl-2-benzothiazolesulfenamide

**Synonyms:** Perkacit CBS; Santocure, CBS; 2-Benzothiazolesulfenamide, N-cyclohexyl-

**Use:** Accelerator.

#### **2.COMPOSITION/INFORMATION ON INGREDIENTS**

<b>Components/CAS#</b>	<b>Percent</b>
N-Cyclohexyl-2-Benzothiazolesulfenamide 95-33-0	96-99
White Mineral Oil 8042-47-5	0-3
2-Mercaptobenzothiazole 149-30-4	0-1
Cyclohexylamine 108-91-8	0-0.5
Mercaptobenzothiazole Disulfide 120-78-5	0-1
Benzothiazole 95-16-9	0-0.5

#### **3. HAZARDS IDENTIFICATION**

**Emergency Overview:** WARNING! Combustible dust - explosion potential. Keep away from heat, sparks, and flame. This material is irritating to skin, eyes and respiratory tract.

**Eye Contact:** Causes eye irritation. Moderate Eye Irritation: signs/symptoms can include redness, swelling, pain, tearing, and hazy vision.

**Skin Contact:** May cause an allergic skin reaction. May cause a rash and itching of the skin. May cause skin defatting with prolonged exposure.

**Inhalation:** Causes moderate respiratory irritation. Irritating vapor causes immediate distress. Irritates mucous membranes. Irritation (upper respiratory): signs/symptoms can include soreness of the nose and throat, coughing and sneezing.

**Ingestion:** May be harmful if large amounts are swallowed. May cause liver and kidney damage.

#### **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.

**On Skin:** Remove contaminated clothing. Wash skin with water, using soap if available. Remove contaminated clothing and laundry before reuse. Get medical attention if irritation persists.

**Inhaled:** Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.

**Swallowed:** If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

**Notes To Physician:** Provide symptomatic/supportive care as necessary. Treatment based on sound judgment of physician and individual reactions of patient. Observe for signs of respiratory distress.

#### **5. FIRE FIGHTING MEASURES**

**Flash Point (°F/C):** 350°F / 177°C

**Flash Point Method:** Cleveland Open Cup

**Autoignition Temp. (°F/C):** 660°F / 349°C (Dust)

**Lower Explosion Limit in Air (LEL):** Not Determined

**Upper Explosion Limit in Air (UEL):** Not Determined.

**Extinguishing Media:** Water fog, carbon dioxide, foam, dry chemical

**Special Exposure Hazards:** Fight fire from a safe distance and from a protected location. Flammable dust when in finely divided and highly suspended state. Use water spray to cool fire exposed surfaces. Decomposition in fire may produce toxic gases. Do not allow runoff to enter waterways.

**Special Protective Equipment:** Fire fighters should wear full protective clothing, including self-contained breathing equipment.

**Unusual Fire/Explosion Hazards:** Toxic emissions may result if product is involved in a fire. Fire produces highly toxic sulfur dioxide gas

#### **6. ACCIDENTAL RELEASE MEASURES**

**Spill Procedures:** Wear protective equipment specified. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.

**Procedure for Cleaning/Absorption:** Isolate area and remove sources of friction, impact, heat, low level electrical current, and RF energy. Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Scoop up and remove. Do NOT spread spilled product with water.

**CERCLA Reportable Quantity (RQ):** Not Applicable

#### **7. HANDLING AND STORAGE**

**Handling:** 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. Avoid generating or breathing dust. Avoid contact with eyes, skin and clothing. Reclose containers of unused product. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Do not reuse this container.

**Storage:** Store closed containers in a cool, dry, well-ventilated area. Store away from strong oxidizing materials. Avoid exposure to direct sunlight. Do not store near Crystex Insoluble Sulfur. Slowly degrades and releases irritating vapors under warm, humid conditions.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Eye Protection:** Wear safety glasses or goggles to protect against exposure. Eye protection is not required during typical product use conditions

**Skin Protection:** Normal work coveralls. Launder contaminated clothing before reuse.

**Gloves:** Use gloves as a standard industrial handling procedure. All cleanable impervious glove types are acceptable.

**Respiratory Protection:** Appropriate respiratory protection shall be worn when applied engineering controls are not adequate to protect against inhalation exposure. Firefighting; use a Positive Pressure Demand Full Face Self Contained Breathing Apparatus.

**Ventilation:** 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 pollution control regulations. Eliminate ignition sources.

**Airborne Exposure Limits:** Nuisance Dust. OSHA PEL/8Hr-TWA = 15 mg/m<sup>3</sup> (Total Dust). OSHA PEL/8-Hr TWA = 05mg/m<sup>3</sup> (Respirable Dust). ACGIH TLV/8-Hr TWA = 10 mg/m<sup>3</sup>. Cyclohexylamine: ACGIH TLV/8Hr TWA = 10 ppm. NIOSH REL/8Hr TWA = 10 ppm.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance:** Off-white powder White to off-white granules.

**Odor:** MILD AMINE

**pH:** N/A

**Specific Gravity:** 1.3 @ 25°C

**Density:** Unknown

**Bulk Density:** 1280 kg/m<sup>3</sup>

**Melting Point (°F/C):** 97-105°C

**Boiling Point (°F/C):** Not Determined

**Vapor Pressure:** Negligible

**Vapor Density (Air=1):** Not Determined

**% Volatile by Volume:** <0.5%

**Solubility in Water:** INSOLUBLE

**Other Solubility:** Soluble in Acetone Ether Ethanol

**Viscosity:** Not determined.

**Other Data:** Ash content = 0.3% max.

**Molecular Weight:** 264.4

**Molecular Formula:** C<sub>13</sub>-H<sub>16</sub>-S<sub>2</sub>-N<sub>2</sub>

## **10. STABILITY AND REACTIVITY**

**Chemical Stability:** Stable when stored at room temperature in closed, original container. Stable under normal conditions of handling, use and transportation. Stable if protected from heat and exposure to air.

Loses potency with time Protect from moisture

**Hazardous Polymerization:** Will not occur

**Conditions to Avoid:** Keep away from heat, sparks and flame.

**Materials to Avoid:** Reducing agents. Contact with acids. Avoid contamination of product with small amounts of water. Do not store near Crystex Insoluble Sulfur.

**Hazardous Decomposition Products:** Carbon monoxide Oxides of nitrogen Oxides of sulfur Amines

**Additional Guidelines:** Amine vapors can cause insoluble sulfur to revert to soluble form.

## **11. TOXICOLOGICAL INFORMATION**

### **Target Organs**

**Acute Oral LD50 (mg/kg):** 5300 mg/kg

**Acute Dermal LD50 (mg/kg):** >7940 mg/kg

**Acute Inhalation LC50 (mg/l):** Not Determined

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

**Ingestion:** May be harmful if large amounts are swallowed. May cause liver and kidney damage.

**Skin Contact:** May cause an allergic skin reaction. May cause a rash and itching of the skin. May cause skin defatting with prolonged exposure.

**Inhalation:** Causes moderate respiratory irritation. Irritating vapor causes immediate distress. Irritates mucous membranes. Irritation (upper respiratory): signs/symptoms can include soreness of the nose and throat, coughing and sneezing.

**Eye Contact:** Causes eye irritation. Moderate Eye Irritation: signs/symptoms can include redness, swelling, pain, tearing, and hazy vision.

**Aggravated Conditions:** Pulmonary disorders. Dermal ailments. Eye, skin, respiratory, blood, liver and/or kidney ailments. This material or its emissions may cause an allergic or sensitization reaction and thereby aggravate systemic disease.

**Carcinogenicity Comment:** This product or one of its ingredients present 0.1% or more is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC, or OSHA. Carcinogenic: Category 3

**Other:** Decomposition products and fumes from vulcanization and cross-linking may cause eye, skin and respiratory sensitization. May be a skin sensitizer. Product releases amine vapors during cure.

**Primary Irritation Effect:** Moderately irritating.

**Carcinogenicity:** Negative in standard tests using bacteria and yeast cells

**Genotoxicity:** None

### **Reproductive/Developmental**

**Toxicity:** No evidence of teratogenicity in animal studies using rats, mice and hamsters

## **12. ECOLOGICAL INFORMATION**

**Acute Fish Toxicity:** 96Hr LC50 Rainbow Trout = 5.4 mg/l. 96Hr LC50 Bluegill Sunfish = 7.9 mg/l. 96Hr LC50 Fathead Minnow = >1000 mg/l.

**Acute Crustaceans Toxicity:** 48Hr LC50 Daphnia Magna = 18.0 mg/l

**Acute Algae Toxicity:** 96Hr EC50 Algae (chlorophyll) = 1.1 ppm. 96Hr EC50 Algae (cell count) = 0.9 ppm.

**Octanol/Water Coefficient:** 4.93 log P

**Chemical Fate Information:** Biodegradability: 4% CO<sub>2</sub> evolution

**Other Information:** Not Available

### **13. DISPOSAL CONSIDERATIONS**

This material is not a RCRA hazardous waste. Bury in a licensed landfill or burn in an approved incinerator according to federal, state, and local regulations. Empty containers should be handled in a manner not to cause dusting during collection, transportation and disposal.

#### **Contaminated Packaging:**

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. Dispose of container according to national or local regulations.

### **14. TRANSPORT INFORMATION**

**DOT:DOT Status:** Not Regulated

**DOT Shipping Name:** NONE

**DOT Reportable Quantity (lbs):** None

**ICAO/IATA:Status:** NOT REGULATED FOR TRANSPORTATION

**Proper Shipping Name:** None

**UN/NA Number:** NONE

**IMDG:Status:** Not Regulated

**Proper Shipping Name:** None

**TDG (Canada):Status:** Not Regulated

**Proper Shipping Name:** None

### **15. REGULATORY INFORMATION**

#### **Worldwide Inventory Status**

**TSCA (USA):** Listed

**Canadian DSL:** Listed

**Canadian NDSL:** N/A

**EINECS/ELINCS (Europe):** Listed

**Japanese Inventory (ENCS):** Listed

**Korean Chemical Inventory (ECL):** Listed

#### **Australian Chemical Inventories**

**(AICS):**Listed

**New Zealand (NZ):** Listed

**Phillipines (PICCS) Inventory:** Listed

**China (CLECS):** Listed

#### **US Regulatory Rules**

**SARA Section 302:** None Found

**SARA 311/312 Hazard Categories:** Immediate Delayed Fire

**SARA 313 Chemical:** 2-Mercaptobenzothiazole.

**RCRA Status:** Not a RCRA waste.

#### **Hazard Rating Systems:**

### **16. OTHER INFORMATION**

**HMIS Classification:** HEALTH 2, FLAMMABILITY 1, REACTIVITY 0

**NFPA Rating:** HEALTH 2, FLAMMABILITY 1, REACTIVITY 0