

# SAFETY DATA SHEET

 GHS  
 United States

## Section 1. Product and company identification

<b>Product name</b>	<b>SULFADS® PWDR</b>	<u>In case of emergency</u>
<b>Code</b>	38615	1-203-853-1400
<b>Supplier/Manufacturer</b>	Vanderbilt Chemicals, LLC 30 Winfield Street Norwalk, CT 06855	Chemtrec: 1-800-424-9300 Outside US: +1-703-527-3887
<b>Chemical name</b>	Piperidine, 1,1'(hexadithiocarbonothioyl)bis-	
<b>Synonym</b>	Dipentamethylenethiuram hexasulfide.	
<b>Material uses</b>	Accelerator.	
<b>Product type</b>	Powder.	

## Section 2. Hazards identification

<b>OSHA/HCS status</b>	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
<b>Classification of the substance or mixture</b>	COMBUSTIBLE DUSTS
<u>GHS label elements</u>	
<b>Signal word</b>	Warning
<b>Hazard statements</b>	May form combustible dust concentrations in air.
<u>Precautionary statements</u>	
<b>Prevention</b>	Not applicable.
<b>Response</b>	Not applicable.
<b>Storage</b>	Not applicable.
<b>Disposal</b>	Not applicable.
<b>Supplemental label elements</b>	Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Prevent dust accumulation.
<b>Hazards not otherwise classified</b>	Fine dust clouds may form explosive mixtures with air. Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

## Section 3. Composition/information on ingredients

**Substance/mixture**                      Substance

Ingredient name	CAS number	% by weight
dipentamethylenethiuram hexasulfide	971-15-3	96 - 98
sulfur	7704-34-9	2 - 4

## Section 3. Composition/information on ingredients

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

<b>Eye contact</b>	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
<b>Skin contact</b>	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
<b>Ingestion</b>	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

<b>Eye contact</b>	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
<b>Inhalation</b>	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
<b>Skin contact</b>	No known significant effects or critical hazards.
<b>Ingestion</b>	No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

<b>Eye contact</b>	Adverse symptoms may include the following: irritation redness
<b>Inhalation</b>	Adverse symptoms may include the following: respiratory tract irritation coughing
<b>Skin contact</b>	No specific data.
<b>Ingestion</b>	No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

<b>Notes to physician</b>	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
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## Section 4. First aid measures

<b>Specific treatments</b>	No specific treatment.
<b>Protection of first-aiders</b>	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

<b>Suitable extinguishing media</b>	In case of fire, use water spray (fog), foam, dry chemical or CO <sub>2</sub> .
<b>Unsuitable extinguishing media</b>	Do not use water jet.

### **Specific hazards arising from the chemical**

Fine dust clouds may form explosive mixtures with air.

### **Hazardous thermal decomposition products**

Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
sulfur oxides

### **Special protective actions for fire-fighters**

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

### **Special protective equipment for fire-fighters**

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

### **Remark(s)**

Dust suspended in air in critical proportions and in the presence of an ignition source presents an explosion hazard. As with any dry material, pouring or allowing to free-fall or to be conveyed through chutes or pipes can accumulate and generate electrostatic sparks, potentially causing ignition of the material itself, or of any flammable materials which may come in contact with the material or its container.

### **Dust Explosion Data**

- - Dust explosion category: Classified as St2 class dust and considered very energetic.
- Maximum pressure of explosion (P<sub>max</sub>)(bar): 7.8 (P<sub>max</sub>) (bar)
- Minimum ignition energy (dust cloud)(E<sub>min</sub>)(mJ): 10 (E<sub>min</sub>) (mJ)
- - Dust-specific constant (K<sub>st</sub>) (bar. m/s):(K<sub>st</sub>) (bar. m/s): 288

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

#### **For non-emergency personnel**

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

#### **For emergency responders**

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

## Section 6. Accidental release measures

**Environmental precautions** Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

**Small spill** Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

**Large spill** Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

**Protective measures** Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Advice on general occupational hygiene** Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities** Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Exposure Limits for Total Product

## Section 8. Exposure controls/personal protection

### As particles not otherwise specified (PNOS).

TWA: 10 mg/m<sup>3</sup> total dust  
3 mg/m<sup>3</sup> respirable dust (ACGIH)

### As particles not otherwise regulated (PNOR).

TWA: 15 mg/m<sup>3</sup> total dust  
5 mg/m<sup>3</sup> respirable dust

#### Appropriate engineering controls

Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

#### Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

#### Individual protection measures

##### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

##### Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. If operating conditions cause high dust concentrations to be produced, use dust goggles. Recommended: safety glasses with side-shields

##### Skin protection

###### Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

###### Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: lab coat

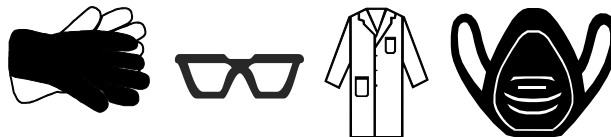
###### Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

##### Respiratory protection

Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: Dust respirator.

#### Personal protective equipment (Pictograms)



## Section 9. Physical and chemical properties

### Appearance

Physical state	Solid. [Powder.]
Color	White to off-white. [Light]
Odor	Aromatic. [Slight]
Odor threshold	Not available.
pH	Not available.
Melting point	114°C (237.2°F)
Boiling point	Not available.
Flash point	Not available.
Burning time	Not available.
Burning rate	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Lower and upper explosive (flammable) limits	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Density	1.5 g/cm <sup>3</sup> [20°C (68°F)]
Relative density	1.5
Solubility	Insoluble in the following materials: cold water.
Solubility in water	Not available.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
SADT	Not available.
Viscosity	Not available.

## Section 10. Stability and reactivity

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Prevent dust accumulation.
Incompatible materials	Reactive or incompatible with the following materials: oxidizing materials

## Section 10. Stability and reactivity

### Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
SULFADS® PWDR	LD50 Oral	Rat	>5000 mg/kg Based on tests of similar materials	-

#### Irritation/Corrosion

Not available.

#### Conclusion/Summary

##### Skin

May cause skin irritation. (Based on testing of similar products and/or the components.)

##### Eyes

May cause eye irritation. (Based on testing of similar products and/or the components.)

##### Respiratory

Dust may cause mechanical irritation.

#### Sensitization

Not available.

#### Mutagenicity

Product/ingredient name	Test	Experiment	Result
SULFADS® PWDR	-	Subject: Bacteria	Negative
	-	Subject: Yeast	Negative

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Conclusion/Summary

Negative for genetic activity (In vitro) (Based on testing of similar products and/or the components.)

#### Teratogenicity

Not available.

#### Conclusion/Summary

No evidence. (Rat/Mouse/Hamster) (Based on testing of similar products and/or the components.)

#### Specific target organ toxicity (single exposure)

Not available.



## Section 11. Toxicological information

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

### Information on the likely routes of exposure

Not available.

### Potential acute health effects

<b>Eye contact</b>	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
<b>Inhalation</b>	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
<b>Skin contact</b>	May be harmful in contact with skin.
<b>Ingestion</b>	No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

<b>Eye contact</b>	Adverse symptoms may include the following: irritation redness
<b>Inhalation</b>	Adverse symptoms may include the following: respiratory tract irritation coughing
<b>Skin contact</b>	No specific data.
<b>Ingestion</b>	No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

<b>Potential immediate effects</b>	Not available.
<b>Potential delayed effects</b>	Not available.

#### Long term exposure

<b>Potential immediate effects</b>	Not available.
<b>Potential delayed effects</b>	Not available.

### Potential chronic health effects

Not available.

<b>General</b>	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
<b>Carcinogenicity</b>	No known significant effects or critical hazards.
<b>Mutagenicity</b>	No known significant effects or critical hazards.
<b>Teratogenicity</b>	No known significant effects or critical hazards.
<b>Developmental effects</b>	No known significant effects or critical hazards.
<b>Fertility effects</b>	No known significant effects or critical hazards.

### Numerical measures of toxicity



## Section 11. Toxicological information

### Acute toxicity estimates

Route	ATE value
Dermal	2500 mg/kg

### Other information

Not available.

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
dipentamethylenethiuram hexasulfide	Acute EC50 >0.0079 mg/l Based on tests of similar materials	Algae	72 hours

### Conclusion/Summary

No effect up to the limit of solubility.

### Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
dipentamethylenethiuram hexasulfide	OECD 301C	0 % - Not readily - 28 days	-	-

### Bioaccumulative potential

Not available.

### Mobility in soil

#### Soil/water partition coefficient ( $K_{oc}$ )

Not available.

#### Other adverse effects

No known significant effects or critical hazards.

## Section 13. Disposal considerations

### Disposal methods

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**Disposal should be in accordance with applicable regional, national and local laws and regulations.**

## Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not regulated.	-	-	-		-
TDG Classification	Not regulated.	-	-	-		-
ADR/RID Class	Not regulated.	-	-	-		-
IMDG Class	Not regulated.	-	-	-		-
IATA-DGR Class	Not regulated.	-	-	-		-

PG\* : Packing group

## Section 15. Regulatory information

[United States inventory \(TSCA 8b\)](#) All components are listed or exempted.

### [U.S. Federal regulations](#)

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

### [SARA 302/304](#)

#### [Composition/information on ingredients](#)

No products were found.

### [SARA 304 RQ](#)

Not applicable.

### [SARA 311/312](#)

#### Classification

COMBUSTIBLE DUSTS

#### [Composition/information on ingredients](#)

Name	%	Classification
sulfur	2 - 4	SKIN IRRITATION - Category 2

### [State regulations](#)

#### Massachusetts

The following components are listed: SULFUR

#### New York

None of the components are listed.

#### New Jersey

The following components are listed: SULFUR

#### Pennsylvania

The following components are listed: SULFUR

#### California Prop. 65

None of the components are listed.

### [International regulations](#)

#### [Australia inventory \(AICS\)](#)

All components are listed or exempted.

#### [Canada inventory](#)

All components are listed or exempted.

#### [China inventory \(IECSC\)](#)

All components are listed or exempted.

#### [Europe inventory](#)

All components are listed or exempted.

#### [Japan inventory \(ENCS\)](#)

All components are listed or exempted.

## Section 15. Regulatory information

<a href="#">Korea inventory (KECI)</a>	All components are listed or exempted.
<a href="#">New Zealand Inventory of Chemicals (NZIoC)</a>	All components are listed or exempted.
<a href="#">Philippines inventory (PICCS)</a>	All components are listed or exempted.
<a href="#">Taiwan Chemical Substances Inventory (TCSI)</a>	All components are listed or exempted.

## Section 16. Other information

### [Hazardous Material Identification System \(U.S.A.\)](#)

Health	1
Flammability	1
Physical hazards	0

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The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

### [National Fire Protection Association \(U.S.A.\)](#)



Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### [History](#)

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<a href="#">Version</a>	3

<a href="#">Key to abbreviations</a>	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
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## Section 16. Other information

UN = United Nations

### References

Not available.

### Information contact

**Vanderbilt Global Services, LLC**  
**Corporate Risk Management**

**1-203-295-2143**

Visit [www.vanderbiltchemicals.com](http://www.vanderbiltchemicals.com) for more information.

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