

# THE 16 SECTIONS OF A SAFETY DATA SHEET

## What You Need to Know:

Safety Data Sheets provide workplaces with the information necessary to communicate the hazards of chemical products on site. The information on an SDS, such as Pictograms, Hazard and Precautionary Statements and Signal Words, helps employers implement safety procedures, offer appropriate PPE and reduce risk within a facility. With the adoption of GHS, most regulatory agencies (including OSHA in the United States) now require a standard 16-section format for all SDSs. To help workplaces understand this format, the infographic below

outlines the sections and how to effectively read a Safety Data Sheet and obtain critical data about a material.

### Before Getting Started:

GHS does not require manufacturers and distributors to include a clear indication of the agency for which that document is written. If not included, it is helpful to obtain this information as it frames the rest of the SDS, providing workplaces with the lens through which the rest of the document should be read. (Note: Documents authored by SiteHawk have this information clearly represented on the SDS.)

## SECTION 1

Includes the product identification information (identifier, manufacturer contact information and recommendations/restrictions for use). The chemical name on the product should match this name exactly to ensure you are viewing the correct SDS.

## SECTION 2

Provides all hazards associated with the material (including label requirements). When viewing this section, notice the two categories of physical and health hazard risks. Examine the Pictograms, Hazard and Precautionary Statements, Signal Words and Hazard Classes to make certain classifications and corresponding hazard warnings align. If necessary, contact your vendor for clarification to ensure you have a comprehensive understanding of how to properly handle the material.

See below for some of the label elements:

### GHS Signal Words



### GHS Pictograms



## SECTION 3

Contains information on the ingredients found in the material. Data includes CAS Number, if relevant, and concentration. For pure substances or mixtures, manufacturers are required to include the chemical name, CAS Number and concentration (or concentration ranges) of only ingredients which contribute to the overall health hazards of a material. Ingredient information and weight percentages from SDSs are utilized in environmental reporting. Being mindful that all ingredients in a material are not required to be listed, the SDS may have potential gaps in formulation information. These gaps need to be filled to ensure reporting compliance. SiteHawk offers a Full Formula functionality that enables clients to input exact concentrations of ingredients to drive more accurate and efficient reporting procedures.

## SECTION 4

Offers First Aid Measures for the material. Ensure the measures provided correspond to the hazards listed in Section 2, so you know what to do in case of an incident associated with each hazard. This section will also indicate if immediate medical attention is necessary and if any special treatment is needed.

## SECTION 5

Lists fire-fighting information, temperature thresholds, recommended equipment and NFPA ratings. Although NFPA ratings are not required to be included on the SDS, they may be found not only in this section but other sections of the SDS. The NFPA rating includes four categories: Health, Flammability, Instability and other Special hazards. A severe hazard is represented by a 4. No hazard is represented as 0. SiteHawk's labeling feature enables users to utilize these ratings and generate labels that include NFPA ratings for the material.

## SECTION 6

Proposes clean-up, protective and containment/recovery measures in the event of an accidental spill or leak. In order to prevent or minimize adverse effects on individuals, property or the environment, the SDS should distinguish between responses for large and small spills where the size of the spill has a significant impact on the appropriate response measures.

## SECTION 7

Delivers safe handling and storage precautions, including recommendations for conditions of safe storage (ventilation, temperature, etc.). Where applicable, this section includes incompatibilities, i.e. other chemicals that when in contact with the material can cause a potential hazardous situation.

## SECTION 8

Indicates exposure limits, engineering controls and personal protective measures. Although OSHA Permissible Exposure Limits (PELs) are required on an SDS to meet compliance requirements under some jurisdictions, it is common industry consensus that OSHA PELs are outdated and that more relevant exposure limits from sources like ACGIH and/or NIOSH should be included on the SDS in addition to the required OSHA PELs. However, not all vendors choose to include the more protective exposure limits. For that reason, it is critical that employers know this information so they can make adjustments if the limits on the SDS are not conservative enough for internal EHS protocols. Asking vendors to note the standard used improves clarity, safety and the bottom line.

## SECTION 9

Identifies physical and chemical properties of the material. This section provides a description of the product (color, odor, etc.) so you can visibly correlate the material with the SDS description.

## SECTION 10

Describes the chemical stability and reactivity hazards of the material. This section may also contain information about the possibility of hazardous reactions, conditions that should be avoided (static discharge, shock, vibration, etc.), incompatible materials and hazardous decomposition products.

## SECTION 11

Provides a complete description of toxicological (health) effects and data used to identify the health hazards for the material. This information includes a description of toxicity measures, range of symptoms associated with exposure (delayed or immediate effects) and whether the material is listed as a potential carcinogen. This section also typically includes whether the material is listed by organizations such as the National Toxicology Program (NTP) or International Agency for Research on Cancer (IARC).

NOTE: This section, at a minimum, should communicate the same hazards listed in Section 2 but often will include additional health hazard concerns that may not directly result in a classification.

## SECTION 12

Describes the environmental impact of the material if released to the environment.

## SECTION 13

Provides proper disposal, recycling and reclamation practices for the material and its container. It is also good practice to refer to Section 8 to ensure appropriate protection for the personnel conducting these types of activities.

## SECTION 14

Provides guidance on shipping and transportation of the material by road, air, rail or sea.

## SECTION 15

Of all the sections on an SDS this section has the least specific requirements but a very broad scope. As such it is open to the most variation regarding the information that a vendor chooses to provide. The information provided by one vendor may be vastly different than the information provided by another vendor. The information commonly included in this section is SARA Hazard Classifications, Inventory List Status and CA Prop 65 information.

## SECTION 16

Indicates the preparation date of the SDS and other revision information such as the changes made from one version to the next. SiteHawk Update and Verification Services review SDS at least every 24 months to ensure the current version is the most recent version available.

## Safety Data Sheet



### 1 Section 1: Identification

#### Product Identifier

Product Name • Example SDS GHS  
Relevant identified uses of the substance or mixture and uses advised against  
Recommended use • Sand blasting abrasive  
Details of the supplier of the safety data sheet  
Manufacturer • SiteHawk, LLC  
709 Nissan Drive  
Smyrna, TN 37167  
United States  
www.sitehawk.com  
Telephone (General) • 615-459-0004

#### Emergency telephone number

Manufacturer • 1-800-123-4567 – Manufacturer Name  
Manufacturer • 901-123-4567 – Manufacturer Name Outside US

### 2 Section 2: Hazard Identification

#### United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture  
OSHA HCS 2012 • Carcinogenicity 1A  
Specific Target Organ Toxicity Repeated Exposure 1

#### Label elements

OSHA HCS 2012

#### DANGER



Hazard statements • May cause cancer.  
Causes damage to organs - Lungs through prolonged or repeated exposure via inhalation

#### Precautionary statements

Prevention • Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Do not breathe dust.  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Wear protective gloves/protective clothing/eye protection/face protection.

Response • If exposed or concerned: Get medical advice/attention.  
Get medical advice/attention if you feel unwell.

Storage/Disposal • Store locked up.  
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

#### Other hazards

OSHA HCS 2012 • Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Hazardous), this product is considered hazardous.

### Canada

According to: WHMIS 2015

#### Classification of the substance or mixture

WHMIS 2015 • Carcinogenicity 1A  
Specific Target Organ Toxicity Repeated Exposure 1

#### Label elements

WHMIS 2015

#### DANGER



Hazard statements • May cause cancer.  
Causes damage to organs - Lungs through prolonged or repeated exposure via inhalation

#### Precautionary statements

Prevention • Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Do not breathe dust.  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Wear protective gloves/protective clothing/eye protection/face protection.

Response • If exposed or concerned: Get medical advice/attention.  
Get medical advice/attention if you feel unwell.

Storage/Disposal • Store locked up.  
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

#### Other hazards

WHMIS 2015 • In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

### 3 Section 3 - Composition/Information on Ingredients

#### Substances

\* Material does not meet the criteria of a substance.

#### Mixtures

Chemical Name		Identifiers	%	Classifications According to Regulation/Directive
Crystalline silica	CAS:14808-60-7	20% TO 25%	OSHA HCS 2012: Carc. 1A; STOT RE 1 (lungs, inhalation) WHMIS 2015: Carc. 1A; STOT RE 1 (lungs, inhalation)	

### 4 Section 4: First-Aid Measures

#### Description of first aid measures

Inhalation • Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing if signs/symptoms continue, get medical attention.

Skin • In case of contact with substance, immediately flush skin with running water for at least 20 minutes.

Eye • In case of contact with substance, immediately flush eyes with running water for at least 20 minutes.

Ingestion • Do NOT induce vomiting. Obtain medical attention immediately if ingested.

Most important symptoms and effects, both acute and delayed  
• Refer to Section 11 - Toxicological Information.

#### Indication of any immediate medical attention and special treatment needed

Notes to Physician • All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

### 5 Section 5: Fire-Fighting Measures

#### Extinguishing media

Suitable Extinguishing Media • In case of fire use media as appropriate for surrounding fire.  
Unsuitable Extinguishing Media • No data available

#### Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards • None known.  
Hazardous Combustion Products • No data available

Advice for firefighters • Structural firefighters' protective clothing will only provide limited protection.  
Wear positive pressure self-contained breathing apparatus (SCBA).

### 6 Section 6 - Accidental Release Measures

#### Personal precautions, protective equipment and emergency procedures

Personal Precautions • Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact.  
Emergency Procedures • Keep unauthorized personnel away. Stay upwind.

#### Environmental precautions

• No special precautions necessary.

#### Methods and material for containment and cleaning up

Containment/Clean-up • Use wet sweeping or dust suppressant when sweeping is required. When dry vacuuming, use appropriate filtration to prevent introduction of dust into the air.

#### Reference to other sections

• Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

### 7 Section 7 - Handling and Storage

#### Precautions for safe handling

Handling • Use only with adequate ventilation. Do not breathe dust. Wear appropriate personal protective equipment, avoid direct contact. Do not eat, drink or smoke when using this product. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

#### Conditions for safe storage, including any incompatibilities

Storage • Keep container closed.

#### Specific end use(s)

• Refer to Section 1.2 - Relevant identified uses.

### 8 Section 8 - Exposure Controls/Personal Protection

#### Control parameters

Result	ACGIH	Exposure Limits/Guidelines			
		Canada British Columbia	Canada Manitoba	Canada New Brunswick	Canada Northwest Territories
Crystalline silica (14808-60-7)	0.025 mg/m <sup>3</sup> TWA (respirable particulate matter)	0.025 mg/m <sup>3</sup> TWA (respirable)	0.025 mg/m <sup>3</sup> TWA (respirable particulate matter)	0.1 mg/m <sup>3</sup> TWA (respirable fraction)	0.05 mg/m <sup>3</sup> TWA (respirable fraction, listed under Silica - crystalline)
Result		Exposure Limits/Guidelines (Cont.)			
Crystalline silica (14808-60-7)	0.025 mg/m <sup>3</sup> TWA (respirable particulate matter)	Canada Nunavut	Canada Ontario	Canada Quebec	Canada Yukon
		0.05 mg/m <sup>3</sup> TWA (respirable fraction, listed under Silica - crystalline)	0.10 mg/m <sup>3</sup> TWA (designated substances regulation, respirable, listed under Silica, crystalline)	0.1 mg/m <sup>3</sup> TWA (respirable dust)	300 particles/m <sup>3</sup> TWA (listed under Silica - Quartz, crystalline)
Result		Exposure Limits/Guidelines (Cont.)			
		NIOSH	OSHA		
Crystalline silica (14808-60-7)		0.05 mg/m <sup>3</sup> TWA (respirable dust)	50 µg/m <sup>3</sup> TWA		

#### Exposure controls

Engineering Measures/Controls • Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable threshold limit values.

#### Personal Protective Equipment

Respiratory • In case of insufficient ventilation, wear suitable respiratory equipment.  
Eye/Face • Wear protective eyewear (goggles, face shield, or safety glasses).  
Skin/Body • Wear appropriate gloves.

Environmental Exposure • Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

#### Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene  
NIOSH = National Institute of Occupational Safety and Health  
OSHA = Occupational Safety and Health Administration  
STEL = Short Term Exposure Limits are based on 15-minute exposures  
TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures  
TWA/EV = Time-Weighted Average Exposure Value

### 9 Section 9 - Physical and Chemical Properties

#### Information on Physical and Chemical Properties

Material Description		Appearance/Description	White crystalline powder.
Physical Form	Solid	Appearance/Description	White crystalline powder.
Color	White	Odor	None
Odor Threshold	Data lacking		
General Properties			
Boiling Point	1046 °F(2230 °C)	Melting Point/Freezing Point	Data lacking
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	= 2.65 Water=1	Water Solubility	Data lacking
Viscosity	Data lacking	Explosive Properties	Data lacking
Oxidizing Properties:	Data lacking		
Volatility			
Vapor Pressure	Data lacking	Vapor Density	Data lacking
Evaporation Rate	Data lacking		
Flammability			
Flash Point	Data lacking	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

#### Other Information

• No additional physical and chemical parameters noted.

### 10 Section 10: Stability and Reactivity

#### Reactivity

• No dangerous reaction known under conditions of normal use.

#### Chemical stability

• Stable under normal temperatures and pressures.

#### Possibility of hazardous reactions

• Hazardous polymerization will not occur.

#### Conditions to avoid

• Incompatible materials.

#### Incompatible materials

• Powerful Oxidizing Agents.

#### Hazardous decomposition products

• None known or anticipated.

### 11 Section 11 - Toxicological Information

#### Information on toxicological effects

Crystalline silica (20% TO 25%)	14808-60-7	Components	
		Acute Toxicity: Inhalation-Rat TCLo = 200 mg/kg. Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis); Lungs, Thorax, or Respiration:Other changes: Nutritional and Gross Metabolic Changes in Chemistry or Temperature Fe.	Multi-dose Toxicity: Inhalation-Hamster TCLo = 3 mg/m <sup>3</sup> 8 Hours; 78 Weeks-Intermittent; Lungs, Thorax, or Respiration:Fibrosis (interstitial); Lungs, Thorax, or Respiration:Changes in lung weight; Inhalation-Rat TCLo = 80 mg/m <sup>3</sup> 26 Weeks-Intermittent; Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis); Blood Changes in spleen; Immunological/Infectious/Allergic/Decrease in cellular immune response; Mutagen: Micro nuclear test - Unreported Route-Human - Lung (Somatic cell) = 160 µg/cm <sup>2</sup> ; DNA damage - Unreported Route-Human - Other Cell Type - 120 mg/L 24 Hour(s); Micronucleus test - Unreported Route-Human - Lung (Somatic cell) = 40 µg/cm <sup>2</sup>
GHS Properties		Classification	
Acute toxicity		OSHA HCS 2012-Data lacking WHMIS 2015-Data lacking	
Skin corrosion/irritation		OSHA HCS 2012-Data lacking WHMIS 2015-Data lacking	
Serious eye damage/irritation		OSHA HCS 2012-Data lacking WHMIS 2015-Data lacking	
Skin sensitization		OSHA HCS 2012-Data lacking WHMIS 2015-Data lacking	
Respiratory sensitization		OSHA HCS 2012-Data lacking WHMIS 2015-Data lacking	
Aspiration Hazard		OSHA HCS 2012-Data lacking WHMIS 2015-Data lacking	
Carcinogenicity		OSHA HCS 2012-Carcinogenicity 1A WHMIS 2015-Carcinogenicity 1A	
Germ Cell Mutagenicity		OSHA HCS 2012-Data lacking WHMIS 2015-Data lacking	
Toxicity for Reproduction		OSHA HCS 2012-Data lacking WHMIS 2015-Data lacking	
STOT-SE		OSHA HCS 2012-Data lacking WHMIS 2015-Data lacking	
STOT-RE		OSHA HCS 2012-Specific Target Organ Toxicity Repeated Exposure 1 WHMIS 2015-Specific Target Organ Toxicity Repeated Exposure 1	

#### Potential Health Effects

##### Inhalation

Acute (Immediate) • Exposure to dust may cause mechanical irritation.

Chronic (Delayed) • Prolonged and repeated breathing of high concentrations of dusts may cause pulmonary fibrosis and silicosis. Silicosis can develop following years of repeated inhalation of airborne dust containing respirable crystalline silica. Silicosis is characterized by lung lesions. Symptoms of silicosis include shortness of breath and cough, decreased lung function and weakness.

##### Skin

Acute (Immediate) • Exposure to dust may cause mechanical irritation.

Chronic (Delayed) • No data available

##### Eye

Acute (Immediate) • Exposure to dust may cause mechanical irritation.

Chronic (Delayed) • No data available

##### Ingestion

Acute (Immediate) • No data available

Chronic (Delayed) • No data available

Carcinogenic Effects • Repeated and prolonged exposure may cause cancer.

### 12 Section 12 - Ecological Information

#### Toxicity

• Material data lacking.

#### Persistence and degradability

• Material data lacking.

#### Bioaccumulative potential

• Material data lacking.

#### Mobility in Soil

• Material data lacking.

#### Other adverse effects

• No studies have been found.

### 13 Section 13 - Disposal Considerations

#### Waste treatment methods

Product waste • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.  
Packaging waste • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

### 14 Section 14 - Transport Information

	UN number	UN proper shipping name	Classification (hazard class(es))	Packing group	Environmental hazards
DDT	Not Applicable	Not Regulated	Not Applicable	Not Applicable	NDA
DG	Not Applicable	Not Regulated	Not Applicable	Not Applicable	NDA

Special precautions for user • None specified.  
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code • Data lacking

### 15 Section 15 - Regulatory Information

#### Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classification • Chronic

Component	CAS	Inventory		TSCA
		Canada DSL	Canada NDSL	