

# SAFETY DATA SHEET

## DOW AGROSCIENCES LLC

**Product name:** CREW™ Specialty Herbicide

**Issue Date:** 07/23/2019

**Print Date:** 10/03/2019

DOW AGROSCIENCES LLC encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container.

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## 1. IDENTIFICATION

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**Product name:** CREW™ Specialty Herbicide

**Recommended use of the chemical and restrictions on use**

**Identified uses:** End use herbicide product

### COMPANY IDENTIFICATION

DOW AGROSCIENCES LLC  
9330 ZIONSVILLE RD  
INDIANAPOLIS IN 46268-1053  
UNITED STATES

**Customer Information Number:**

800-992-5994  
info@corteva.com

### EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** 800-992-5994

**Local Emergency Contact:** 352-323-3500

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## 2. HAZARDS IDENTIFICATION

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### Hazard classification

GHS classification in accordance with 29 CFR 1910.1200

Carcinogenicity - Category 1A

Specific target organ toxicity - repeated exposure - Category 2 - Inhalation

### Label elements

**Hazard pictograms**



Signal word: **DANGER!**

**Hazards**

May cause cancer.

May cause damage to organs (Lungs) through prolonged or repeated exposure if inhaled.

**Precautionary statements****Prevention**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response**

IF exposed or concerned: Get medical advice/ attention.

**Storage**

Store locked up.

**Disposal**

Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

No data available

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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<b>Component</b>	<b>CASRN</b>	<b>Concentration</b>
Isoxaben	82558-50-7	0.5%
Dithiopyr	97886-45-8	0.25%
Bentonite	1302-78-9	>= 90.0 - < 100.0 %
Silica, crystalline (quartz)	14808-60-7	>= 3.0 - < 10.0 % *

*Note*

The " \* ", or "asterisk", denotes component is present in the product as a sub-component of a co-formulant.

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**4. FIRST AID MEASURES**

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**Description of first aid measures****General advice:**

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air; if effects occur, consult a physician.

**Skin contact:** Wash off with plenty of water.

**Eye contact:** Flush eyes with plenty of water; remove contact lenses after the first 1-2 minutes then continue flushing for several minutes. Only mechanical effects expected. If effects occur, consult a physician, preferably an ophthalmologist.

**Ingestion:** No emergency medical treatment necessary.

**Most important symptoms and effects, both acute and delayed:**

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

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

**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

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## 5. FIREFIGHTING MEASURES

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**Suitable extinguishing media:** Water spray Alcohol-resistant foam

**Unsuitable extinguishing media:** None known.

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

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.

**Unusual Fire and Explosion Hazards:** Exposure to combustion products may be a hazard to health. Do not allow run-off from fire fighting to enter drains or water courses.

**Advice for firefighters**

**Fire Fighting Procedures:** Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Remove undamaged containers from fire area if it is safe to do so. Evacuate area. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

**Special protective equipment for firefighters:** In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

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## 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions, protective equipment and emergency procedures:** Avoid dust formation. Avoid breathing dust. Use personal protective equipment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**Environmental precautions:** If the product contaminates rivers and lakes or drains inform respective authorities. Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained. Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**Methods and materials for containment and cleaning up:** Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in Pick up and arrange disposal without creating dust. Recovered material should be stored in a vented container. The vent must prevent the ingress of water as further reaction with spilled materials can take place which could lead to overpressurization of the container. Keep in suitable, closed containers for disposal. Sweep up or vacuum up spillage and collect in suitable container for disposal. See Section 13, Disposal Considerations, for additional information.

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## 7. HANDLING AND STORAGE

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**Precautions for safe handling:** Do not breathe vapours/dust. Do not smoke. Handle in accordance with good industrial hygiene and safety practice. Avoid exposure - obtain special instructions before use. Smoking, eating and drinking should be prohibited in the application area. Do not get on skin or clothing. Avoid inhalation of vapour or mist. Do not swallow. Avoid contact with skin and eyes. Avoid contact with eyes. Keep container tightly closed. Take care to prevent spills, waste and minimize release to the environment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Use with local exhaust ventilation.

**Conditions for safe storage:** Store in a closed container. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in properly labelled containers. Store in accordance with the particular national regulations.

Do not store with the following product types: Do not store near acids.. Strong oxidizing agents. Organic peroxides. Explosives. Gases.  
Unsuitable materials for containers: None known.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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### Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value/Notation
Dithiopyr	Dow IHG	TWA	0.25 mg/m3
Silica, crystalline (quartz)	OSHA Z-3	TWA respirable	0.05 mg/m3
	ACGIH	TWA Respirable fraction	0.025 mg/m3 , Silica
	OSHA Z-1	TWA Respirable dust	0.05 mg/m3

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

**Exposure controls**

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

**Individual protection measures**

**Eye/face protection:** Use safety glasses (with side shields). If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

**Skin protection**

**Hand protection:** Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

**Other protection:** No precautions other than clean body-covering clothing should be needed.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In dusty or misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance**

Physical state	granules
Color	Gray
Odor	Faint
Odor Threshold	No data available
pH	4.33
Melting point/range	No data available
Freezing point	Not applicable
Boiling point (760 mmHg)	Not applicable
Flash point	<b>closed cup</b> Not applicable
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammability (solid, gas)	No data available
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor Pressure	Not applicable
Relative Vapor Density (air = 1)	Not applicable
Relative Density (water = 1)	2.2
Water solubility	insoluble
Partition coefficient: n-octanol/water	No data available

<b>Auto-ignition temperature</b>	No data available
<b>Decomposition temperature</b>	No data available
<b>Dynamic Viscosity</b>	Not applicable
<b>Kinematic Viscosity</b>	No data available
<b>Explosive properties</b>	No data available
<b>Oxidizing properties</b>	No data available
<b>Molecular weight</b>	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** Not classified as a reactivity hazard.

**Chemical stability:** No decomposition if stored and applied as directed. Stable under normal conditions.

**Possibility of hazardous reactions:** None known.  
No hazards to be specially mentioned.

**Conditions to avoid:** None known.

**Incompatible materials:** None.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials.

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information appears in this section when such data is available.*

### Acute toxicity

#### Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product:

LD50, Rat, 22,500 mg/kg

#### Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.

#### Acute inhalation toxicity

Dust may cause irritation to upper respiratory tract (nose and throat).

As product: The LC50 has not been determined.

### Skin corrosion/irritation

May cause skin irritation due to mechanical abrasion.

**Serious eye damage/eye irritation**

Solid or dust may cause irritation or corneal injury due to mechanical action.

**Sensitization**

For skin sensitization:

No relevant data found.

For respiratory sensitization:

No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Available data are inadequate to determine single exposure specific target organ toxicity.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

In animals, effects have been reported on the following organs:

lung

Repeated excessive exposure to crystalline silica may cause silicosis, a progressive and disabling disease of the lungs.

**Carcinogenicity**

Crystalline silica has been shown to cause cancer in laboratory animals and humans.

**Teratogenicity**

No relevant data found.

**Reproductive toxicity**

No relevant data found.

**Mutagenicity**

No relevant data found.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

**COMPONENTS INFLUENCING TOXICOLOGY:**

**Isoxaben**

**Acute dermal toxicity**

LD50, Rabbit, male and female, > 2,000 mg/kg No deaths occurred at this concentration.

**Acute inhalation toxicity**

Prolonged excessive exposure to dust may cause adverse effects. Based on the available data, narcotic effects were not observed. Based on the available data, respiratory irritation was not observed.

LC50, Rat, male and female, 4 Hour, dust/mist, > 2.93 mg/l

Maximum attainable concentration. No deaths occurred at this concentration.

**Dithiopyr**

**Acute dermal toxicity**

LD50, Rabbit, > 5,000 mg/kg No deaths occurred at this concentration.

**Acute inhalation toxicity**

No adverse effects are anticipated from inhalation. Based on the available data, narcotic effects were not observed. Based on the available data, respiratory irritation was not observed.

LC50, Rat, 4 Hour, dust/mist, > 5.98 mg/l No deaths occurred at this concentration.

**Bentonite****Acute dermal toxicity**

The dermal LD50 has not been determined.

**Acute inhalation toxicity**

No adverse effects are anticipated from single exposure to dust.

As product: The LC50 has not been determined.

**Silica, crystalline (quartz)****Acute dermal toxicity**

The dermal LD50 has not been determined.

**Acute inhalation toxicity**

Vapors are unlikely due to physical properties. Dust may cause irritation of the upper respiratory tract (nose and throat) and lungs. Excessive exposure may cause lung injury.

The LC50 has not been determined.

**Carcinogenicity****Component****Silica, crystalline (quartz)****List**

IARC  
US NTP  
ACGIH

**Classification**

Group 1: Carcinogenic to humans  
Known to be human carcinogen  
A2: Suspected human carcinogen

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**12. ECOLOGICAL INFORMATION**

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*Ecotoxicological information appears in this section when such data is available.*

**Toxicity****Isoxaben****Acute toxicity to fish**

Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

The LC50 value is above the water solubility.

LC50, *Oncorhynchus mykiss* (rainbow trout), static test, 96 Hour, 1.2 mg/l, OECD Test Guideline 203 or Equivalent

The LC50 value is above the water solubility.

LC50, *Cyprinodon variegatus* (sheepshead minnow), static test, 96 Hour, > 0.87 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

The EC50 value is above the water solubility.



EC50, Daphnia magna (Water flea), static test, 48 Hour, > 1.3 mg/l, OECD Test Guideline 202 or Equivalent

#### **Acute toxicity to algae/aquatic plants**

EbC50, Lemna minor (duckweed), static test, 7 d, Biomass, 0.011 mg/l, OECD Test Guideline 201 or Equivalent

The EC50 value is above the water solubility.

ErC50, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, Growth rate inhibition, > 1.2 mg/l

The EC50 value is above the water solubility.

ErC50, Skeletonema costatum (marine diatom), static test, 72 Hour, > 0.49 mg/l

#### **Toxicity to bacteria**

EC50, activated sludge, Respiration inhibition, 3 Hour, Respiration rates., > 100 mg/l

#### **Chronic toxicity to fish**

NOEC, Pimephales promelas (fathead minnow), semi-static test, 33 d, growth, 0.4 mg/l

LOEC, Pimephales promelas (fathead minnow), semi-static test, 33 d, growth, > 0.40 mg/l

MATC (Maximum Acceptable Toxicant Level), Pimephales promelas (fathead minnow), semi-static test, 33 d, growth, > 0.40 mg/l

#### **Chronic toxicity to aquatic invertebrates**

NOEC, Daphnia magna (Water flea), static test, 21 d, growth, 0.69 mg/l

LOEC, Daphnia magna (Water flea), static test, 21 d, growth, 1.01 mg/l

MATC (Maximum Acceptable Toxicant Level), Daphnia magna (Water flea), static test, 21 d, growth, 0.85 mg/l

NOEC, saltwater mysid Mysidopsis bahia, flow-through test, 28 d, 0.841 mg/l

LOEC, saltwater mysid Mysidopsis bahia, flow-through test, 28 d, > 0.841 mg/l

NOEC, Midge (Chironomus riparius), static test, 28 d, mortality, 32 mg/l

LOEC, Midge (Chironomus riparius), static test, 28 d, mortality, 64 mg/l

MATC (Maximum Acceptable Toxicant Level), Midge (Chironomus riparius), static test, 28 d, mortality, 48 mg/l

#### **Toxicity to Above Ground Organisms**

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

Material is moderately toxic to birds on a dietary basis (LC50 between 501 and 1000 ppm).

oral LD50, Colinus virginianus (Bobwhite quail), 14 d, > 2000mg/kg bodyweight.

LC50, Colinus virginianus (Bobwhite quail), 8 d, > 937mg/kg diet.

oral LD50, Apis mellifera (bees), > 100micrograms/bee

contact LD50, Apis mellifera (bees), 48 Hour, > 100micrograms/bee

#### **Toxicity to soil-dwelling organisms**

LC50, Eisenia fetida (earthworms), 14 d, > 1,000 mg/kg

### **Dithiopyr**

#### **Acute toxicity to fish**

Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, 0.5 mg/l

#### **Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), 48 Hour, > 1.1 mg/l, OECD Test Guideline 202

#### **Acute toxicity to algae/aquatic plants**

EC50, Selenastrum capricornutum (green algae), Static, 5 d, 0.020 mg/l  
ErC50, Lemna gibba (gibbous duckweed), 7 d, 0.014 mg/l  
NOEC, Lemna gibba (gibbous duckweed), 7 d, 0.0024 mg/l

#### **Toxicity to Above Ground Organisms**

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).  
Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).  
oral LD50, Colinus virginianus (Bobwhite quail), > 2250mg/kg bodyweight.  
dietary LC50, Colinus virginianus (Bobwhite quail), > 5620mg/kg diet.  
contact LD50, Apis mellifera (bees), 48 Hour, > 100µg/bee  
oral LD50, Apis mellifera (bees), 48 Hour, > 119µg/bee

#### **Toxicity to soil-dwelling organisms**

LC50, Eisenia fetida (earthworms), > 1,000 mg/kg

#### **Bentonite**

##### **Acute toxicity to fish**

Material is practically non-toxic to fish on an acute basis (LC50 > 100 mg/L).  
LC50, Pimephales promelas (fathead minnow), 96 Hour, > 100 mg/l

#### **Silica, crystalline (quartz)**

##### **Acute toxicity to fish**

Not expected to be acutely toxic to aquatic organisms.

#### **Persistence and degradability**

#### **Isoxaben**

**Biodegradability:** Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. Biodegradation rate may increase in soil and/or water with acclimation.

**Theoretical Oxygen Demand:** 1.98 mg/mg

**Chemical Oxygen Demand:** 1.77 mg/g

##### **Stability in Water (1/2-life)**

Hydrolysis, half-life, > 5 d, pH 7.0

##### **Photodegradation**

**Test Type:** Half-life (direct photolysis)

**Method:** Measured

##### **Photodegradation**

**Test Type:** Half-life (direct photolysis)

##### **Photodegradation**

**Test Type:** Half-life (indirect photolysis)

**Sensitization:** OH radicals

**Atmospheric half-life:** 0.628 Hour

**Method:** Estimated.

#### **Dithiopyr**

**Biodegradability:** Biodegradation may occur under aerobic conditions (in the presence of oxygen).

#### **Bentonite**

**Biodegradability:** Biodegradation is not applicable.

**Silica, crystalline (quartz)**

**Biodegradability:** Biodegradation is not applicable.

**Bioaccumulative potential**

**Isoxaben**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient: n-octanol/water(log Pow):** 2.64 Measured

**Dithiopyr**

**Bioaccumulation:** Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

**Partition coefficient: n-octanol/water(log Pow):** 4.75 Measured

**Bentonite**

**Bioaccumulation:** Partitioning from water to n-octanol is not applicable.

**Silica, crystalline (quartz)**

**Bioaccumulation:** Partitioning from water to n-octanol is not applicable.

**Mobility in soil**

**Isoxaben**

Potential for mobility in soil is low (Koc between 500 and 2000).

**Partition coefficient (Koc):** 700 - 1290

**Dithiopyr**

Expected to be relatively immobile in soil (Koc > 5000).

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

**Partition coefficient (Koc):** 20500

**Bentonite**

No relevant data found.

**Silica, crystalline (quartz)**

No relevant data found.

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### 13. DISPOSAL CONSIDERATIONS

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**Disposal methods:** If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

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## 14. TRANSPORT INFORMATION

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**DOT**

Not regulated for transport

**Classification for SEA transport (IMO-IMDG):**

Not regulated for transport

**Transport in bulk  
according to Annex I or II  
of MARPOL 73/78 and the  
IBC or IGC Code**

Consult IMO regulations before transporting ocean bulk

**Classification for AIR transport (IATA/ICAO):**

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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## 15. REGULATORY INFORMATION

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**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312**

Carcinogenicity

Specific target organ toxicity (single or repeated exposure)

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Pennsylvania Right To Know**

The following chemicals are listed because of the additional requirements of Pennsylvania law:

**Components**

Silica, crystalline (quartz)  
Dipropylene glycol

**CASRN**

14808-60-7  
25265-71-8

**California Prop. 65**

WARNING: This product can expose you to chemicals including Silica, crystalline (quartz), which is/are known to the State of California to cause cancer, and Toluene, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**United States TSCA Inventory (TSCA)**

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

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**16. OTHER INFORMATION**


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**Hazard Rating System****NFPA**

Health	Flammability	Instability
1	1	0

**Revision**

Identification Number: 97069534 / A211 / Issue Date: 07/23/2019 / Version: 1.0

DAS Code: GF-3985

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
Dow IHG	Dow Industrial Hygiene Guideline
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA Z-3	USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
TWA	Time Weighted Average (TWA):

**Full text of other abbreviations**

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of

Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

US