

Product Name: SNAPSHOT* DG Herbicide

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Dow AgroSciences LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name

SNAPSHOT* DG Herbicide

COMPANY IDENTIFICATION

Dow AgroSciences LLC
A Subsidiary of The Dow Chemical Company
9330 Zionsville Road
Indianapolis, IN 46268-1189
USA

Customer Information Number:

800-992-5994

SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact:

800-992-5994

Local Emergency Contact:

352-323-3500

2. Hazards Identification

Emergency Overview

Color: Yellow

Physical State: Granules.

Odor: Aromatic

Hazards of product:

WARNING! Harmful if inhaled. Keep upwind of spill. Toxic fumes may be released in fire situations. Slipping hazard. Cancer hazard. Can cause cancer.

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: Solid or dust may cause irritation due to mechanical action.

Skin Contact: Prolonged contact may cause slight skin irritation with local redness.

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

Inhalation: Excessive exposure may cause irritation to upper respiratory tract (nose and throat). Prolonged excessive exposure may cause serious adverse effects, even death.

Ingestion: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

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

Effects of Repeated Exposure: For the active ingredient(s): In animals, effects have been reported on the following organs: Kidney. Liver. Blood. Repeated excessive exposure to crystalline silica may cause silicosis, a progressive and disabling disease of the lungs.

Cancer Information: Crystalline silica has been shown to cause cancer in laboratory animals and humans. An increase in nonmalignant liver tumors was observed with isoxaben in one of two species tested.

Birth Defects/Developmental Effects: For the active ingredient(s): Trifluralin. Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Isoxaben. Has caused birth defects in laboratory animals only at doses toxic to the mother.

Reproductive Effects: For the active ingredient(s): Isoxaben. In animal studies, has been shown to interfere with reproduction in females.

3. Composition Information

Component	CAS #	Amount
Isoxaben	82558-50-7	0.5 %
Trifluralin	1582-09-8	2.0 %
Clays, Fuller's earth	8031-18-3	>= 78.5 - <= 86.4 %
Silica, crystalline (quartz)	14808-60-7	>= 0.9 - <= 8.7 %
Balance		>= 2.4 - <= 18.1 %

4. First-aid measures

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 person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice. If breathing is difficult, oxygen should be administered by qualified personnel.

Skin Contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Eye Contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.

Ingestion: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Never give anything by mouth to an unconscious person.

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), no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed

No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. Fire Fighting Measures

Suitable extinguishing media

This material does not burn. If exposed to fire from another source, use suitable extinguishing agent for that fire.

Special hazards arising from the substance or mixture

Hazardous Combustion Products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen fluoride. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: None known.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. This material does not burn. Fight fire for other material that is burning. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Keep upwind of spill. Spilled material may cause a slipping hazard. Ventilate area of leak or spill. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7. Handling and Storage

Handling

General Handling: Keep out of reach of children. Do not swallow. Avoid breathing dust or mist. Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Wash thoroughly after handling. Keep container closed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Storage

Store in a dry place. Store in original container. Do not store near food, foodstuffs, drugs or potable water supplies.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Silica, crystalline (quartz)	ACGIH	TWA Respirable fraction.	0.025 mg/m ³
	Z3	TWA Respirable.	2.4 millions of particles per cubic foot of air The exposure limit is calculated from the equation, $250/(\%SiO_2+5)$, using a value of 100% SiO ₂ . Lower percentages of SiO ₂ will yield higher exposure limits.
	Z3	TWA Respirable.	0.1 mg/m ³ The exposure limit is calculated from the equation, $10/(\%SiO_2+2)$, using a value of 100% SiO ₂ . Lower percentages of SiO ₂ will yield higher exposure limits.
	Z3	TWA Total dust.	0.3 mg/m ³ The exposure limit is calculated from the equation, $30/(\%SiO_2+2)$, using a value of 100% SiO ₂ . Lower values of % SiO ₂ will give higher exposure limits.

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.

Personal Protection

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: Wear clean, body-covering clothing.

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

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, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

9. Physical and Chemical Properties

Appearance

Physical State

Granules.

Color	Yellow
Odor	Aromatic
Odor Threshold	No test data available
pH	7.5 (50% dispersion)
Melting Point	No test data available
Freezing Point	Not applicable
Boiling Point (760 mmHg)	Not applicable.
Flash Point - Closed Cup	Not applicable
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammability (solid, gas)	No
Flammable Limits In Air	Lower: Not applicable Upper: Not applicable
Vapor Pressure	Not applicable
Vapor Density (air = 1)	Not applicable
Specific Gravity (H₂O = 1)	Not applicable
Solubility in water (by weight)	No test data available
Autoignition Temperature	> 537 °C (> 999 °F)
Decomposition Temperature	No test data available
Dynamic Viscosity	Not applicable
Kinematic Viscosity	Not applicable
Liquid Density	Not applicable
Bulk Density	0.70 g/ml @ 23.4 °C <i>Loose Volumetric</i>
Molecular Weight	No test data available

10. Stability and Reactivity

Reactivity

No dangerous reaction known under conditions of normal use.

Chemical stability

Stable under recommended storage conditions. See Storage, Section 7.

Possibility of hazardous reactions

Polymerization will not occur.

Conditions to Avoid: Active ingredient decomposes at elevated temperatures. Avoid direct sunlight or ultraviolet sources.

Incompatible Materials: Avoid contact with: Strong oxidizers. Strong acids.

Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Nitrogen oxides. Hydrogen fluoride.

11. Toxicological Information

Acute Toxicity

Ingestion

As product: LD50, Rat > 2,500 mg/kg

Dermal

As product: LD50, Rabbit > 5,000 mg/kg

Inhalation

As product: LC50, 4 h, Aerosol, Rat, male > 4.6 mg/l

As product: LC50, 4 h, Aerosol, Rat, female > 0.5 - < 4.6 mg/l

Eye damage/eye irritation

Solid or dust may cause irritation due to mechanical action.

Skin corrosion/irritation

Prolonged contact may cause slight skin irritation with local redness.

Sensitization

Skin

Did not cause allergic skin reactions when tested in guinea pigs. Did not demonstrate the potential for contact allergy in mice.

Respiratory

No relevant information found.

Repeated Dose Toxicity

For the active ingredient(s): In animals, effects have been reported on the following organs: Kidney. Liver. Blood. Repeated excessive exposure to crystalline silica may cause silicosis, a progressive and disabling disease of the lungs.

Chronic Toxicity and Carcinogenicity

Crystalline silica has been shown to cause cancer in laboratory animals and humans. An increase in nonmalignant liver tumors was observed with isoxaben in one of two species tested. A low incidence of urinary tract tumors was seen in only 1 of 5 chronic studies in rats with trifluralin. Trifluralin is not anticipated to be a carcinogenic risk to man.

Carcinogenicity Classifications:

Component	List	Classification
Silica, crystalline (quartz)	NTP	Known carcinogen.
	ACGIH	Suspected human carcinogen.; Group A2
	IARC	Carcinogenic to humans.; 1

Developmental Toxicity

For the active ingredient(s): Trifluralin. Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Isoxaben. Has caused birth defects in laboratory animals only at doses toxic to the mother.

Reproductive Toxicity

For the active ingredient(s): Isoxaben. In animal studies, has been shown to interfere with reproduction in females.

Genetic Toxicology

For the active ingredient(s): Trifluralin. In vitro genetic toxicity studies were negative in some cases and positive in other cases. For the active ingredient(s): Animal genetic toxicity studies were negative. Based on information for component(s): Crystalline Silica. In vitro genetic toxicity studies were negative in some cases and positive in other cases.

12. Ecological Information

Toxicity

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested). Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

Fish Acute & Prolonged Toxicity

LC50, rainbow trout (*Oncorhynchus mykiss*), static renewal, 96 h: 230 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, water flea *Daphnia pulex*, 48 h, immobilization: > 1,000 mg/l

Aquatic Plant Toxicity

ErC50, green alga *Pseudokirchneriella subcapitata* (formerly known as *Selenastrum capricornutum*), 96 h: > 1,000 mg/l

Toxicity to Above Ground Organisms

oral LD50, bobwhite (*Colinus virginianus*): > 2000 mg/kg bodyweight.

Toxicity to Soil Dwelling Organisms

LC50, Earthworm *Eisenia foetida*, adult, 14 d: > 10,000 mg/kg

Persistence and Degradability

Data for Component: Isoxaben

Material is expected to biodegrade only 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.

Stability in Water (1/2-life):

3.9 - 65.3 h; pH 7.0

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
2.045E-10 cm ³ /s	0.628 h	Estimated.

Data for Component: Trifluralin

Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

Stability in Water (1/2-life):

> 1 y; pH 3 - 9; Measured

0.19 - 3.08 h; Measured

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
5 %	28 d	OECD 301B Test	fail

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
2.4004E-11 cm ³ /s	5.347 h	Estimated.

Data for Component: Clays, Fuller's earth

Biodegradation is not applicable.

Data for Component: Silica, crystalline (quartz)

Biodegradation is not applicable.

Bioaccumulative potentialData for Component: Isoxaben

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

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

Data for Component: TrifluralinData for Component: Clays, Fuller's earthData for Component: Silica, crystalline (quartz)

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

Mobility in soilData for Component: Isoxaben

Partition coefficient, soil organic carbon/water (Koc): 190 - 570 **Henry's Law Constant**

(H): 1.27E-09 atm*m³/mole; 25 °C Measured

Data for Component: Trifluralin

Henry's Law Constant (H): 1.03E-04 atm*m³/mole; 25 °C Estimated.

Distribution in Environment: Mackay Level 1 Fugacity Model:

Air	Water.	Biota	Soil	Sediment
1.56 %	0.49 %	< 0.01 %	95.74 %	2.12 %

Data for Component: Clays, Fuller's earthData for Component: Silica, crystalline (quartz)

Mobility in soil: No data available for assessment due to technical difficulties with testing.

Henry's Law Constant (H): No data available for assessment due to technical difficulties with testing.:

13. Disposal Considerations

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.

14. Transport Information

DOT Non-Bulk

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE SOLID, N.O.S.

Technical Name: TRIFLURALIN

Hazard Class: 9 **ID Number:** UN3077 **Packing Group:** PG III

DOT Bulk

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE SOLID, N.O.S.

Technical Name: TRIFLURALIN

Hazard Class: 9 **ID Number:** UN3077 **Packing Group:** PG III

IMDG

NOT REGULATED

ICAO/IATA

NOT REGULATED

Additional Information

Reportable quantity: 500 lb – TRIFLURALIN

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. 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.

15. Regulatory Information

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	Yes
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

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

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS #	Amount
Trifluralin	1582-09-8	2.0%

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Trifluralin	1582-09-8	2.0%
Silica, crystalline (quartz)	14808-60-7	>= 0.9 - <= 8.7 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

This product contains the following substances which are subject to CERCLA Section 103 reporting requirements and which are listed in 40 CFR 302.4.

Component	CAS #	Amount
Trifluralin	1582-09-8	2.0%

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

Toxic Substances Control Act (TSCA)

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

16. Other Information

Hazard Rating System

NFPA	Health	Fire	Reactivity
	2	1	0

Revision

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DAS Code: FN-3278

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

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

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.