

**Product Name:** Gallery\* 75 DF Herbicide**Issue Date:** 2012.02.28

Dow AgroSciences Canada Inc. 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**

Gallery\* 75 DF Herbicide

**COMPANY IDENTIFICATION**

Dow AgroSciences Canada Inc.  
A Subsidiary of The Dow Chemical Company  
Suite 2100, 450 1<sup>st</sup> Street SW,  
Calgary, AB T2P 5H1  
Canada

**For MSDS updates and Product Information:** 800-667-3852**Prepared By:** Prepared for use in Canada by EH&S, Hazard Communications.  
**Revision** 2012.02.28**Customer Information Number:** 800-667-3852  
[solutions@dow.com](mailto:solutions@dow.com)**EMERGENCY TELEPHONE NUMBER****24-Hour Emergency Contact:** 613-996-6666**Local Emergency Contact:** 613-996-6666

## 2. Hazards Identification

**Emergency Overview****Color:** Tan**Physical State:** Granules.**Odor:** Aromatic**Hazards of product:**

**WARNING!** Causes eye irritation. May cause skin irritation. May be harmful if inhaled. May form explosive dust-air mixture. Isolate area. Keep upwind of spill. Slipping hazard.

**Potential Health Effects**

**Eye Contact:** May cause moderate eye irritation which may be slow to heal. May cause slight temporary corneal injury. Solid or dust may cause irritation or corneal injury due to mechanical action.

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

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

**Inhalation:** Inhalation is unlikely due to physical state. Prolonged excessive exposure to dust may cause adverse effects.

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

**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.

**Cancer Information:** For the active ingredient(s): An increase in nonmalignant liver tumors was observed with isoxaben in one of two species tested. For the minor component(s): Lung fibrosis and tumors have been observed in rats exposed to titanium dioxide in two lifetime inhalation studies. Effects are believed to be due to overloading of the normal respiratory clearance mechanisms caused by the extreme study conditions. Workers exposed to titanium dioxide in the workplace have not shown an unusual incidence of chronic respiratory disease or lung cancer. Titanium dioxide was not carcinogenic in laboratory animals in lifetime feeding studies.

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

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

**3. Composition/information on ingredients**

Component	CAS #	Amount W/W
Isoxaben	82558-50-7	75.0 %
Kaolin	1332-58-7	8.5 %
Titanium dioxide	13463-67-7	0.2 %
Balance	Not available	16.3 %

Amounts are presented as percentages by weight.

**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.

**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. Suitable emergency safety shower facility should be available in work area.

**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. Suitable emergency eye wash facility should be immediately available.

**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), 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**

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam.

**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. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** Container may rupture from gas generation in a fire situation. Do not permit dust to accumulate. When suspended in air dust can pose an explosion hazard. Minimize ignition sources. If dust layers are exposed to elevated temperatures, spontaneous combustion may occur. Dense smoke is produced when product burns.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Consider feasibility of a controlled burn to minimize environment damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Move container from fire area if this is possible without hazard. 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). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

See Section 9 for related Physical Properties

**6. Accidental Release Measures**

**Personal precautions, protective equipment and emergency procedures:** Isolate area. Refer to Section 7, Handling, for additional precautionary measures. Keep unnecessary and unprotected personnel from entering the area. 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. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Do not swallow. Avoid breathing dust or mist. Use with adequate ventilation. Keep container closed. Keep away from heat, sparks and flame. No smoking, open flames or sources of ignition in handling and storage area. Good housekeeping and controlling of dusts are necessary for safe handling of product. 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
Kaolin	OEL (QUE)	TWA Total dust.	10 mg/m <sup>3</sup>
	CAD BC OEL	TWA Respirable.	2 mg/m <sup>3</sup>
	CAD ON OEL	TWAEV Respirable.	2 mg/m <sup>3</sup>
	ACGIH	TWA Respirable fraction.	2 mg/m <sup>3</sup> The value is for particulate matter containing no asbestos and <1% crystalline silica.
	CAD MB OEL	TWA Respirable fraction	2 mg/m <sup>3</sup>
	OEL (QUE)	TWA Respirable dust.	5 mg/m <sup>3</sup>
	CAD AB OEL	TWA Respirable.	2 mg/m <sup>3</sup>
Titanium dioxide	OEL (QUE)	TWA Total dust.	10 mg/m <sup>3</sup>
	CAD ON OEL	TWAEV Total dust.	10 mg/m <sup>3</sup>
	ACGIH	TWA	10 mg/m <sup>3</sup>
	CAD AB OEL	TWA	10 mg/m <sup>3</sup>
	CAD BC OEL	TWA Respirable fraction.	3 mg/m <sup>3</sup>
	CAD BC OEL	TWA Total dust.	10 mg/m <sup>3</sup>
	OEL (QUE)	TWA Total dust.	10 mg/m <sup>3</sup>

*Consult local authorities for recommended 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 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. 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**

<b>Physical State</b>	Granules.
<b>Color</b>	Tan
<b>Odor</b>	Aromatic
<b>Odor Threshold</b>	No test data available
<b>pH</b>	8.5 - 10.0 <i>pH Electrode</i> (aqueous 50/50)
<b>Melting Point</b>	No test data available
<b>Freezing Point</b>	Not applicable
<b>Boiling Point (760 mmHg)</b>	Not applicable.
<b>Flash Point - Closed Cup</b>	Not applicable
<b>Evaporation Rate (Butyl Acetate = 1)</b>	Not applicable
<b>Flammable Limits In Air</b>	<b>Lower:</b> Not applicable <b>Upper:</b> Not applicable
<b>Vapor Pressure</b>	Not applicable
<b>Vapor Density (air = 1)</b>	Not applicable
<b>Specific Gravity (H<sub>2</sub>O = 1)</b>	Not applicable
<b>Solubility in water (by weight)</b>	Disperses in water
<b>Partition coefficient, n-octanol/water (log Pow)</b>	No data available for this product. See Section 12 for individual component data.
<b>Autoignition Temperature</b>	415 °C
<b>Decomposition Temperature</b>	No test data available
<b>Kinematic Viscosity</b>	Not applicable
<b>Bulk Density</b>	0.384 g/ml <i>Unspecified</i>

**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. Unstable at elevated temperatures.

**Possibility of hazardous reactions**

Polymerization will not occur.

**Conditions to Avoid:** Active ingredient decomposes at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems. Avoid direct sunlight.

**Incompatible Materials:** None known.

**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: Carbon monoxide. Carbon dioxide.

Nitrogen oxides. Toxic gases are released during decomposition.

## 11. Toxicological Information

**Acute Toxicity****Ingestion**

As product: LD50, rat, male and female > 5,000 mg/kg

**Dermal**

As product: LD50, rabbit, male and female > 5,000 mg/kg

**Inhalation**

The LC50 has not been determined. Estimated. LC50, Dust, rat > 2 mg/l

**Eye damage/eye irritation**

May cause moderate eye irritation which may be slow to heal. May cause slight temporary corneal injury. Solid or dust may cause irritation or corneal injury due to mechanical action.

**Skin corrosion/irritation**

Prolonged contact may cause moderate skin irritation with local redness.

**Sensitization****Skin**

For the active ingredient(s): Did not cause allergic skin reactions when tested in guinea pigs.

**Respiratory**

No relevant data found.

**Repeated Dose Toxicity**

For the active ingredient(s): In animals, effects have been reported on the following organs: Kidney. Liver.

**Chronic Toxicity and Carcinogenicity**

For the active ingredient(s): An increase in nonmalignant liver tumors was observed with isoxaben in one of two species tested. For the minor component(s): Lung fibrosis and tumors have been observed in rats exposed to titanium dioxide in two lifetime inhalation studies. Effects are believed to be due to overloading of the normal respiratory clearance mechanisms caused by the extreme study conditions. Workers exposed to titanium dioxide in the workplace have not shown an unusual incidence of chronic respiratory disease or lung cancer. Titanium dioxide was not carcinogenic in laboratory animals in lifetime feeding studies.

**Carcinogenicity Classifications:**

Component	List	Classification
Titanium dioxide	IARC	Possibly carcinogenic to humans.; 2B

**Developmental Toxicity**

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

**Reproductive Toxicity**

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

**Genetic Toxicology**

For the active ingredient(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were predominantly negative.

## 12. Ecological Information

### Toxicity

#### Data for Component: **Isoxaben**

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

#### **Fish Acute & Prolonged Toxicity**

LC50, *Oncorhynchus mykiss* (rainbow trout), static test, 96 h: 1.1 mg/l

LC50, *Cyprinodon variegatus* (sheepshead minnow), static test, 96 h: > 0.87 mg/l

#### **Aquatic Invertebrate Acute Toxicity**

EC50, *Daphnia magna* (Water flea), static test, 48 h, immobilization: > 1.3 mg/l

#### **Aquatic Plant Toxicity**

EbC50, *Lemna minor* (duckweed), static test, biomass growth inhibition, 7 d: 0.011 mg/l

#### **Toxicity to Micro-organisms**

EC50; activated sludge, Respiration inhibition, 3 h: > 100 mg/l

#### **Aquatic Invertebrates Chronic Toxicity Value**

*Daphnia magna* (Water flea), static test, 21 d, growth, NOEC: 0.69 mg/l, LOEC: 1.01 mg/l

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

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

LC50, *Colinus virginianus* (Bobwhite quail): > 5000 mg/kg diet.

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

contact LD50, *Apis mellifera* (bees): > 100 micrograms/bee

#### **Toxicity to Soil Dwelling Organisms**

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

#### Data for Component: **Kaolin**

Not expected to be acutely toxic to aquatic organisms.

#### Data for Component: **Titanium dioxide**

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).

#### **Fish Acute & Prolonged Toxicity**

NOEC mortality, *Leuciscus idus* (Golden orfe), static test, 48 h: > 1,000 mg/l

#### **Aquatic Invertebrate Acute Toxicity**

EC50, *Daphnia magna* (Water flea), static test, 48 h, immobilization: > 1,000 mg/l

### 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

#### **OECD Biodegradation Tests:**

Biodegradation	Exposure Time	Method	10 Day Window
1 %	28 d	OECD 301B Test	fail

#### **Indirect Photodegradation with OH Radicals**

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

#### Data for Component: **Kaolin**

Biodegradation is not applicable.

#### Data for Component: **Titanium dioxide**

Biodegradation is not applicable.

**Bioaccumulative potential**Data for Component: **Isoxaben****Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).**Partition coefficient, n-octanol/water (log Pow):** 2.64 Measured**Bioconcentration Factor (BCF):** 60.4; Lepomis macrochirus (Bluegill sunfish); MeasuredData for Component: **Kaolin****Bioaccumulation:** Partitioning from water to n-octanol is not applicable.Data for Component: **Titanium dioxide****Bioaccumulation:** No data available.**Bioconcentration Factor (BCF):** No data available.**Mobility in soil**Data for Component: **Isoxaben****Mobility in soil:** Potential for mobility in soil is medium (Koc between 150 and 500).**Partition coefficient, soil organic carbon/water (Koc):** 190 - 570 **Henry's Law Constant (H):** 1.27E-09 atm\*m3/mole; 25 °C MeasuredData for Component: **Kaolin****Mobility in soil:** No relevant data found.Data for Component: **Titanium dioxide****Mobility in soil:** No data available.**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****TDG Small container**

NOT REGULATED

**TDG Large container**

NOT REGULATED

**IMDG****Proper Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.**Technical Name:** Isoxaben**Hazard Class:** 9 **ID Number:** UN3077 **Packing Group:** PG III**EMS Number:** F-A,S-F**Marine pollutant.:** Yes**ICAO/IATA****Proper Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.**Technical Name:** Isoxaben**Hazard Class:** 9 **ID Number:** UN3077 **Packing Group:** PG III**Cargo Packing Instruction:** 956**Passenger Packing Instruction:** 956



## 15. Regulatory Information

### CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

### Hazardous Products Act Information: CPR Compliance

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

### Hazardous Products Act Information: WHMIS Classification

This product is exempt under WHMIS.

**Pest Control Products Act Registration number:** 24110

### National Fire Code of Canada

Not applicable

## 16. Other Information

### Hazard Rating System

<b>NFPA</b>	<b>Health</b>	<b>Fire</b>	<b>Reactivity</b>
	2	0	1

### Recommended Uses and Restrictions

#### Identified uses

Product use: End use herbicide product

### Revision

Identification Number: 50577 / 1023 / Issue Date 2012.02.28 / Version: 4.1

DAS Code: FN-3133

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
VOL/VOL	Volume/Volume

*Dow AgroSciences Canada Inc. 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.*