

# MATERIAL SAFETY DATA SHEET

## Solitare® 75 WG Herbicide



MSDS Ref. No.: 100000015752

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Revision No.: 2

This document has been prepared to meet the requirements of the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200 and Canada's Workplace Hazardous Materials Information System (WHMIS) requirements.

## 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Solitare® 75 WG Herbicide  
**PRODUCT CODE:** 6515  
**ACTIVE INGREDIENT(S):** 3,7-Dichloroquinoline-8-carboxylic acid\*; Sulfentrazone\*\*  
**MOLECULAR FORMULA:** C<sub>10</sub>H<sub>5</sub>Cl<sub>2</sub>NO<sub>2</sub>\*; C<sub>11</sub>H<sub>10</sub>Cl<sub>2</sub>F<sub>2</sub>N<sub>4</sub>O<sub>3</sub>S\*\*  
**SYNONYMS:** Quinclorac; 3,7-Dichloro-8-quinolinecarboxylic acid (IUPAC)\*;  
FMC 97285; F6285; CAS: N-[2,4-dichloro-5-[4-difluoromethyl]-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl]phenyl]methanesulfonamide; IUPAC: N-[2,4-dichloro-5-(4-difluoromethyl-3-methyl-5-oxo-4,5-dihydro-[1,2,4]triazol-1-yl)phenyl]methane sulfonamide\*\*

**ALTERNATE PRODUCT NAME(S):** F7214 Herbicide

### MANUFACTURER

FMC CORPORATION  
Agricultural Products Group  
1735 Market Street  
Philadelphia, PA 19103  
(215) 299-6000 (General Information)  
msdsinfo@fmc.com (Email - General Information)

### EMERGENCY TELEPHONE NUMBERS

(800) 331-3148 (Medical - U.S.A. & Canada)  
(651) 632-6793 (Medical - Collect - All Other Countries)

For leak, fire, spill, or accident emergencies, call:  
(800) 424-9300 (CHEMTREC - U.S.A. & Canada)  
(703) 527-3887 (CHEMTREC - Collect - All Other Countries)

## 2. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW:

- Granular solid
- Slightly combustible. May support combustion at elevated temperatures. Finely dispersed particles can form explosive mixtures in air.
- Thermal decomposition and burning may form toxic by-products.
- For large exposures or fire, wear personal protective equipment.

- Highly toxic to algae.
- Slightly toxic to fish and aquatic organisms. Keep out of drains and water courses.
- Moderate inhalation toxicity.
- Moderately irritating to the eyes.

**POTENTIAL HEALTH EFFECTS:** Effects from overexposure result from inhaling this product. Symptoms of overexposure include convulsions, tremors, increased sensitivity to touch and sound, labored breathing, decreased locomotion, tearing, nasal discharge and incoordination.

**MEDICAL CONDITIONS AGGRAVATED:** None presently known.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Wt.%	EC No.	EC Class
3,7-Dichloroquinoline-8-carboxylic acid	84087-01-4	55 - 65	402-780-1	Xi; R43
Sulfentrazone	122836-35-5	15 - 25	None	Not classified in Annex I
Naphthalenesulfonic acid formaldehyde condensate	68425-94-5	5 - 10	Not applicable	Xi; R36/38
Lignosulfonate acid, sodium salt	8061-51-6	5 - 10	None	Not classified
Sodium methyl oleoyl taurate	137-20-2	1 - 3	205-285-7	Xn-Xi; R22-41
Sodium alkylnaphthalenesulfonate		1 - 3	None	Xi; R36
Kaolin	1332-58-7	1 - 3	None	Not classified

### 4. FIRST AID MEASURES

**EYES:** Flush with large quantities of water for at least 15 minutes, lifting the upper and lower eyelids intermittently. If wearing contact lenses, remove after the first five minutes and continue flushing with water. If irritation occurs and persists, get medical attention.

**SKIN:** Wash with plenty of soap and water. Get medical attention if irritation occurs and persists.

**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 a poison control center or doctor. Do not give anything to an unconscious person.

**INHALATION:** Remove to fresh air. If breathing difficulty or discomfort occurs and persists, contact a medical doctor.

**NOTES TO MEDICAL DOCTOR:** This product has moderate inhalation toxicity and low oral and dermal toxicity. It is moderately irritating to eyes and slightly irritating to the skin. It is non-sensitizing to the skin.

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## 5. FIRE FIGHTING MEASURES

**EXTINGUISHING MEDIA:** Foam, CO<sub>2</sub> or dry chemical. Soft stream water fog only if necessary. Contain all runoff.

**FIRE / EXPLOSION HAZARDS:** Slightly combustible. May support combustion at elevated temperatures. Finely dispersed particles can form explosive mixtures in air.

**FIRE FIGHTING PROCEDURES:** Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke, gases or vapors generated.

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## 6. ACCIDENTAL RELEASE MEASURES

**RELEASE NOTES:** Isolate and post spill area. Wear protective clothing and personal protective equipment as prescribed in Section 8, "Exposure Controls/Personal Protection". Keep unprotected persons and animals out of the area.

Keep material out of lakes, streams, ponds and sewer drains. Large spills should be covered to prevent dispersal. For dry material, use a wet sweeping compound or water to prevent the formation of dust. If water is used, prevent runoff or dispersion of excess liquid by diking and absorbing with a non-combustible absorbent such as clay, sand or soil. Vacuum, shovel or pump all waste material, including absorbent, into a drum and label contents for disposal.

To clean and neutralize spill area, tools and equipment, wash with a suitable solution of caustic or soda ash, and an appropriate alcohol (i.e., methanol, ethanol or isopropanol). Follow this by washing with a strong soap and water solution. Absorb, as above, any excess liquid and add to the drums of waste already collected. Repeat if necessary. Dispose of drummed waste according to the method outlined in Section 13, "Disposal Considerations".

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## 7. HANDLING AND STORAGE

**HANDLING AND STORAGE:** Store in a cool, dry, well-ventilated place. Do not use or store near heat, open flame or hot surfaces. Store in original containers only. Keep out of reach of children and animals. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE LIMITS

Chemical Name	ACGIH	OSHA	Supplier
Kaolin	2 mg/m <sup>3</sup> (TWA) (respirable fraction)	15 mg/m <sup>3</sup> (PEL) (total dust) 5 mg/m <sup>3</sup> (PEL) (respirable fraction)	

**ENGINEERING CONTROLS:** No open flames. Prevent deposition of dust; use closed system, consider use of dust explosion-proof electrical equipment and lighting. Use local exhaust at all process locations where dust may be emitted. Ventilate all transport vehicles prior to unloading.

### PERSONAL PROTECTIVE EQUIPMENT

**EYES AND FACE:** For dust exposure, wear chemical protective goggles or a face shield.

**RESPIRATORY:** For dust exposures wear, as a minimum, a properly fitted half-face or full-face air-purifying respirator, which is approved for pesticides (U.S. NIOSH/MSHA, EU CEN or comparable certification organization). Respirator use and selection must be based on airborne concentrations.

**PROTECTIVE CLOTHING:** Depending upon concentrations encountered, wear coveralls or long-sleeved uniform and head covering. For larger exposures as in the case of spills, wear full body cover barrier suit, such as a PVC suit. Leather items - such as shoes, belts and watchbands - that become contaminated should be removed and destroyed. Launder all work clothing before reuse (separately from household laundry).

**GLOVES:** Wear chemical protective gloves made of materials such as butyl rubber, nitrile or neoprene. Thoroughly wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks.

**WORK HYGIENIC PRACTICES:** Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking, chewing gum, or using tobacco. Shower at the end of the workday.

### COMMENTS:

Personal protective recommendations for mixing or applying this product are prescribed on the product label. Information stated above provides useful, additional guidance for individuals whose use or handling of this product is not guided by the product label.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>ODOR:</b>	Not available
<b>APPEARANCE:</b>	Granular solid
<b>DENSITY / WEIGHT PER VOLUME:</b>	32 - 35.4 lbs/cu ft
<b>MOLECULAR WEIGHT:</b>	242.1 (quinclorac); 387.19 (sulfentrazone)
<b>PERCENT VOLATILE:</b>	Not available
<b>pH:</b>	4.3
<b>SOLUBILITY IN WATER:</b>	Not available

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## 10. STABILITY AND REACTIVITY

<b>CONDITIONS TO AVOID:</b>	Excessive heat and fire.
<b>STABILITY:</b>	Stable
<b>POLYMERIZATION:</b>	Will not occur
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b>	Carbon monoxide, carbon dioxide, nitrogen oxides, sulfur oxides, hydrogen chloride, hydrogen fluoride.

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## 11. TOXICOLOGICAL INFORMATION

**EYE EFFECTS:** Moderately irritating

**SKIN EFFECTS:** Slightly irritating

**DERMAL LD<sub>50</sub>:** > 5,000 mg/kg

**ORAL LD<sub>50</sub>:** 3,110 mg/kg

**INHALATION LC<sub>50</sub>:** > 2.06 mg/l

**SENSITIZATION:** Non-sensitizing

**ACUTE EFFECTS FROM OVEREXPOSURE:** This product has moderate inhalation toxicity and low oral and dermal toxicity. It is moderately irritating to eyes and slightly irritating to the skin. It is non-sensitizing to the skin. Signs of toxicity in laboratory animals, with sulfentrazone, included clonic convulsions, ataxia, hypersensitivity to touch, chromorhinorrhea, abdominogenital staining, decreased locomotion, lacrimation, nasal discharge, and squinting eyes.

**CHRONIC EFFECTS FROM OVEREXPOSURE:** No data available for the product. Sulfentrazone was not carcinogenic in lifetime feeding studies with laboratory animals, nor was it found to be mutagenic in a battery of tests. In a reproduction study, sulfentrazone produced adverse effects on the growth and survival of the offspring, decreased male fertility and oligospermia at 25 mg/kg/day, and 35 mg/kg/day. Sulfentrazone was found to be fetotoxic in oral and dermal developmental toxicity studies; the fetal NOELS were 10 mg/kg/day and 100 mg/kg/day, respectively. At labeled use rates and practices of mixing and applying, expected exposure to farm workers is at least one hundred times lower than the doses that produced effects in laboratory animals.

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## 12. ECOLOGICAL INFORMATION

Unless otherwise indicated, the data presented below are for the active ingredient(s).

**ENVIRONMENTAL DATA:** Sulfentrazone is stable in soil (half-life = 18 months). In water, sulfentrazone is stable to hydrolysis over the pH range of 5 to 9; however, it will readily undergo photolysis (half-life < 0.5 day). Sulfentrazone has a low affinity for organic matter ( $K_{oc} = 43$ ), but is mobile only in soils with high sand content. The potential for sulfentrazone to bioaccumulate is very low, having a Log Pow of 1.48, and a bioconcentration factor of 1.1 - 2.0.

**ECOTOXICOLOGICAL INFORMATION:** Sulfentrazone is slightly toxic to fish and aquatic arthropods, with  $LC_{50}$  values ranging from 60.4 mg/L to > 130 mg/L. Sulfentrazone has a very low order of toxicity to waterfowl (dietary  $LC_{50} > 5620$  ppm) and upland game birds (oral  $LD_{50} > 2,250$  mg/kg). Sulfentrazone:

Algae: 120 Hour  $EC_{50} = 31 \mu\text{g/L}$  (Selenastrum)

Algae: 120 Hour  $EC_{50} = 33 \mu\text{g/L}$  (Anabaena - Bluegreen Algae)

Quinclorac

Algae: 72 Hour  $EC_{50} = 6.53$  mg/L

Aquatic Invertebrates: 48 hour  $EC_{50}$  (Daphnia) = 29.8 mg/L

Fish: 96 Hour  $LC_{50}$  (Rainbow trout) = 100 mg/L

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## 13. DISPOSAL CONSIDERATIONS

**DISPOSAL METHOD:** Open dumping or burning of this material or its packaging is prohibited. If spilled material cannot be disposed of by use according to label instructions, an acceptable method of disposal is to incinerate in accordance with local, state and national environmental laws, rules, standards and regulations. However, because acceptable methods of disposal may vary by location and regulatory requirements may change, the appropriate agencies should be contacted prior to disposal.

**EMPTY CONTAINER:** Completely empty package into application equipment. Then dispose of empty package in a sanitary landfill or by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

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## 14. TRANSPORT INFORMATION

### U.S. DEPARTMENT OF TRANSPORTATION (DOT)

<b>PACKAGING TYPE:</b>	Non-Bulk
<b>ADDITIONAL INFORMATION:</b>	This material is not regulated in transportation.
<b>PACKAGING TYPE:</b>	Bulk
<b>PROPER SHIPPING NAME:</b>	Environmentally hazardous substance, solid, n.o.s.
<b>TECHNICAL NAME(S):</b>	Sulfentrazone
<b>PRIMARY HAZARD CLASS / DIVISION:</b>	9
<b>UN/NA NUMBER:</b>	UN 3077
<b>PACKING GROUP:</b>	III
<b>MARINE POLLUTANT:</b>	Sulfentrazone

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## 15. REGULATORY INFORMATION

### UNITED STATES

#### SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

**SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355, APPENDIX A):**  
Not applicable

**SECTION 311 HAZARD CATEGORIES (40 CFR 370):**  
Immediate

**SECTION 312 THRESHOLD PLANNING QUANTITY (40 CFR 370):**  
The Threshold Planning Quantity (TPQ) for this product, if treated as a mixture, is 10,000 lbs; however, this product contains the following ingredients with a TPQ of less than 10,000 lbs.:  
None

**SECTION 313 REPORTABLE INGREDIENTS (40 CFR 372):**  
This product does not, to our knowledge, contain any toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.

**CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT)****CERCLA DESIGNATION & REPORTABLE QUANTITIES (RQ) (40 CFR 302.4):**

Not applicable

**FEDERAL INSECTICIDE FUNGICIDE RODENTICIDE ACT**

U.S. EPA Signal Word: CAUTION

**CANADA****WHMIS (WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM):**

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

Hazard Classification / Division: D2B

**HAZARD AND RISK PHRASE DESCRIPTIONS:**

EC Symbols:	Xn	(Harmful)
	Xi	(Irritant)
EC Risk Phrases:	R22	(Harmful if swallowed.)
	R36	(Irritating to eyes.)
	R36/38	(Irritating to eyes and skin.)
	R41	(Risk of serious damage to eyes.)
	R43	(May cause sensitization by skin contact.)

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**16. OTHER INFORMATION****NFPA**

Health	2
Flammability	1
Reactivity	0
Special	None

No special requirements

NFPA (National Fire Protection Association)

Degree of Hazard Code:

- 4 = Extreme
- 3 = High
- 2 = Moderate
- 1 = Slight



0 = Insignificant

**REVISION SUMMARY:**

This MSDS replaces Revision #1, dated July 07, 2009.

Section 1 (Product and Company Identification)

Section 14 (Transport Information)

Section 15 (Regulatory Information)

Section 16 (Other Information)

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