

MATERIAL SAFETY DATA SHEET

SPARTAN® ADVANCE HERBICIDE



MSDS Ref. No.: F18-59-3
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This document has been prepared to meet the requirements of the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200; the EC directive, 2001/58/EC and other regulatory requirements. The information contained herein is for the concentrate as packaged, unless otherwise noted.

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: SPARTAN® ADVANCE HERBICIDE
PRODUCT CODE: 6353
ACTIVE INGREDIENT(S): Sulfentrazone*; Glyphosate IPA**
CHEMICAL FAMILY: Aryl Triazolinones*; Glycine derivative**
MOLECULAR FORMULA: C₁₅H₁₄N₃O₃F₃Cl₂*; C₃H₈NO₅P · C₃H₉N**
SYNONYMS: 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*;
N-(phosphonomethyl)glycine, compound with 2-propylamine(1:1), glyphosate, isopropylamine salt**

ADDITIONAL SYNONYM(s): F7120 SC (formulation)

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 (FMC - U.S.A. & Canada)
(716) 735-3765 (FMC - Reverse charges)

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

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

- Off-white to light-beige, essentially odorless, liquid.
- 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.
- Slightly toxic to fish and aquatic organisms. Keep out of drains and water courses.

POTENTIAL HEALTH EFFECTS: Effects from overexposure result from swallowing this product. Symptoms of overexposure include salivation, diarrhea, decreased activity and piloerection.

MEDICAL CONDITIONS AGGRAVATED: None presently known.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Wt.%	EC No.	EC Class
Sulfentrazone	122836-35-5	5.7	None	Not classified
Glyphosate IPA	38641-94-0	41.48	254-056-8	Not classified
Surfactant Blend		<4	None	Not classified
Xanthan gum	11138-66-2	0.22	234-394-2	Not classified

4. FIRST AID MEASURES

EYES: Flush with plenty of water. Get medical attention if irritation occurs and persists.

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

INGESTION: Drink plenty of water. Never give anything by mouth to an unconscious person. If any discomfort persists, obtain medical attention.

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

NOTES TO MEDICAL DOCTOR: This product has low oral, dermal and inhalation toxicity. It is slightly irritating to the skin and non-irritating to the eyes. It is non-sensitizing to the skin. Treatment is otherwise controlled removal of exposure followed by symptomatic and supportive care.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Foam, CO₂ 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.

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. Dike to confine spill and absorb with a non-combustible absorbent such as clay, sand or soil. Vacuum, shovel or pump waste 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".

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
Xanthan gum		15 mg/m ³ (8-hour TWA) (total dust) 5 mg/m ³ (8-hour TWA) (respirable)	

ENGINEERING CONTROLS: Use local exhaust at all process locations where vapor or mist may be emitted. Ventilate all transport vehicles prior to unloading.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: For splash, mist or spray exposure, wear chemical protective goggles or a face shield with safety glasses.

RESPIRATORY: For splash, mist or spray 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR:	Essentially odorless
APPEARANCE:	Off-white to light-beige liquid
DENSITY / WEIGHT PER VOLUME:	9.95 lbs/gal (1192 g/L)
FLASH POINT:	> 104.4 °C (> 220 °F)

MELTING POINT:	Not applicable
MOLECULAR WEIGHT:	387.19 (sulfentrazone) 228.2 (Glyphosate IPA salt)
pH:	4.7 (1% dispersion in water at 24.6°C / 76.3°F)
SOLUBILITY IN WATER:	Not available
SPECIFIC GRAVITY:	1.1917 g/mL at 21°C (69.8°F)
VAPOR PRESSURE:	Not available
VISCOSITY:	5 rpm = 1100 cps; 50 rpm = 574 cps (at 21.1°C / 69.98°F)

10. STABILITY AND REACTIVITY

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

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: Non-irritating (rabbit)

SKIN EFFECTS: Slightly irritating (rabbit)

DERMAL LD₅₀: > 2,000 mg/kg (rabbit)

ORAL LD₅₀: > 5,000 mg/kg (rat)

INHALATION LC₅₀: > 2.26 mg/l (4 h) (rat) Maximum attainable concentration - zero mortality

SENSITIZATION: (Skin) Non-sensitizing (guinea pig)

ACUTE EFFECTS FROM OVEREXPOSURE: This product has low oral, dermal and inhalation toxicity. It is slightly irritating to the skin and non-irritating to the eyes. It is non-sensitizing to the skin. Signs of toxicity in laboratory animals showed signs of diarrhea, salivation, decreased activity and piloerection.

Prolonged contact with dry xanthan gum powder may cause drying or chapping of the skin. Excessive inhalation of dust may be annoying and can mechanically impede respiration; due to the hygroscopic properties of the gums, they can form a paste or gel in the airway.

CHRONIC EFFECTS FROM OVEREXPOSURE: No data available for the formulation. 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.

Repeated or long-term exposure to glyphosate in laboratory animals have shown to result in reduced body weight gain and effects on the liver tissues. Overall, glyphosate is not considered to be teratogenic, genotoxic and/or a carcinogen.

Long-term feeding studies, with xanthan gum, showed no adverse effects up to 1,000 mg/kg/day in rats and dogs. In a 3-generation reproduction study, there were no adverse effects at up to 500 mg/kg/day in rats.

CARCINOGENICITY:

NTP:	Not listed
IARC:	Not listed
OSHA:	Not listed
OTHER:	(ACGIH) Not listed

12. ECOLOGICAL INFORMATION

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 (Koc = 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.

Glyphosate is moderately persistent in soil, with an estimated average half-life of 47 days. Reported field half-lives range from 1-174 days. Half-life for glyphosate in ponds is 12 days to 10 weeks. It is strongly absorbed to soil. Thus, even though it is highly soluble in water, field and laboratory studies show that glyphosate does not leach and has a low potential for runoff.

ECOTOXICOLOGICAL INFORMATION: Sulfentrazone is slightly toxic to fish and aquatic arthropods, with LC₅₀ values ranging from 60.4 mg/L to > 130 mg/L. Sulfentrazone has a very low order of toxicity to waterfowl (dietary LC₅₀ > 5620 ppm) and upland game birds (oral LD₅₀ > 2,250 mg/kg).

Glyphosate:

Slightly toxic to wild birds. LC₅₀ (bobwhite quail) > 4500 ppm
 Practically non-toxic to fish and may be slightly toxic to aquatic invertebrates.
 LC₅₀ 96-hour (bluegill sunfish) = 120 mg/L
 LC₅₀ 96-hour (harlequin) = 1680 mg/L
 LC₅₀ 96-hour (rainbow trout) = 86 mg/L
 LC₅₀ 96-hour (Atlantic oyster) > 10 mg/L
 LC₅₀ 96-hour (fiddler crab) = 934 mg/L
 LC₅₀ 96-hour (shrimp) = 281 mg/L
 LC₅₀ 48-hour (daphnia) = 780 mg/L

LD₅₀ (oral & dermal) = >0.1 mg/bee (Non-toxic, honeybee)
LC₅₀ >5000 ppm (Earthworms)

OTHER INFORMATION: No data available for the formulation. Data presented above are for the ingredients as noted.

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: Non-returnable containers that held this material should be cleaned, prior to disposal, by triple rinsing. Containers which held this material may be cleaned by being triple-rinsed, and recycled, with the rinsate being incinerated. Do not cut or weld metal containers. Vapors that form may create an explosion hazard.

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

PACKAGING TYPE:	Non-Bulk
ADDITIONAL INFORMATION:	This material is not a hazardous material as defined by US Department of Transportation at 49 CFR Parts 100 through 185.

PACKAGING TYPE:	Bulk
ADDITIONAL INFORMATION:	This material is not a hazardous material as defined by US Department of Transportation at 49 CFR Parts 100 through 185.

INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)

PACKAGING TYPE:	Non-Bulk
ADDITIONAL INFORMATION:	This material is not a dangerous good as defined by the International Maritime Dangerous Goods Code.

ADR - EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD

PACKAGING TYPE: Non-Bulk

ADDITIONAL INFORMATION: This material is not a dangerous good as defined by ADR.

INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) / INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)

PACKAGING TYPE: Non-Bulk

ADDITIONAL INFORMATION: This material is not a dangerous good as defined in ICAO and the International Air Transport Association Dangerous Goods Regulations.

OTHER INFORMATION:
This material is not respirable as shipped.

HARMONIZED SYSTEM
Import to the U.S.A.: 3808.93.1500
Export from the U.S.A.: 3808.93.0000

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

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

SECTION 311 HAZARD CATEGORIES (40 CFR 370):
Immediate, Delayed

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 contain any toxic chemicals subject to the reporting requirements of Section 313, Title III of the SARA (Superfund Amendments and Reauthorization Act) of 1986.

CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT)

CERCLA DESIGNATION & REPORTABLE QUANTITIES (RQ) (40 CFR 302.4):

Not listed

FEDERAL INSECTICIDE FUNGICIDE RODENTICIDE ACT

U.S. EPA Signal Word: CAUTION

INTERNATIONAL LISTINGS

AUSTRALIAN HAZARD CODE: 3XE

HAZARD, RISK AND SAFETY PHRASE DESCRIPTIONS:

EC Symbols: (Not classified as hazardous)

EC Risk Phrases: (Not classified as hazardous)

EC Safety Phrases: (Not classified as hazardous)

16. OTHER INFORMATION

REVISION SUMMARY:

New MSDS.

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