



Material Safety Data Sheet

BAYER ADVANCED 2-IN-1 SYSTEMIC ROSE & FLOWER CARE READY-TO-USE GRANULES

MSDS Number: 102000013755
 MSDS Version 1.1
 Revision Date: 02/04/2009

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name BAYER ADVANCED 2-IN-1 SYSTEMIC ROSE & FLOWER CARE READY-TO-USE GRANULES
MSDS Number 102000013755
EPA Registration No. 72155-49

Bayer Environmental Science
 2 T.W. Alexander Drive
 Research Triangle PK, NC 27709
 USA

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
 For Product Information call: 1-800-331-2867

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Disulfoton	298-04-4	1.00

SECTION 3. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview Warning! May be fatal if swallowed. Moderate eye irritation. Avoid contact with skin, eyes and clothing. Cholinesterase inhibitor.

Physical State granular

Appearance multicolored

Routes of Exposure Eye contact, Skin contact, Inhalation, Ingestion

Immediate Effects

Eye Moderate eye irritation may occur. Avoid contact with eyes.

Skin May cause slight irritation. Avoid contact with skin and clothing.

Ingestion May be fatal if swallowed. Do not take internally.

Inhalation Avoid breathing dust.



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Potential Environmental Effect Extremely toxic to birds. Extremely toxic to mammals. Extremely toxic to fish and aquatic invertebrates.

SECTION 4. FIRST AID MEASURES

General	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Eye	Hold eye 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 eye. Call a physician or poison control center immediately.
Skin	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
Notes to Physician Signs and Symptoms	The symptoms of cholinesterase inhibition include: Discomfort in the chest sweating constriction of pupils stomach pain Vomiting Diarrhoea
Hazards	Cholinesterase inhibitor.
Treatment	The product inhibits cholinesterase resulting in stimulation of the central nervous system, the parasympathetic nervous system, and the somatic motor nerves. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media Water, Carbon dioxide (CO2), Dry chemical, Foam



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Fire Fighting Instructions Avoid contact with spilled product or contaminated surfaces. Evacuate personnel to safe areas. Keep out of smoke. Fight fire from upwind position. Do not allow run-off from fire fighting to enter drains or water courses.

Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.

Methods for cleaning up Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations. Contaminated soil may have to be removed and disposed. Decontaminate tools and equipment following cleanup.

Additional Advice Do not allow to enter soil, waterways or waste water canal. Do not allow product to contact vegetation.

SECTION 7. HANDLING AND STORAGE

Handling Procedures Avoid contact with skin, eyes and clothing. Handle and open container in a manner as to prevent spillage. Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.

Storing Procedures Store in original container and out of the reach of children, preferably in a locked storage area. Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed.

Work/Hygienic Procedures Handle in accordance with good industrial hygiene and safety practice. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection Follow all label instructions. Train employees in safe use of the product.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash



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	PPE separately from other laundry.
Eye/Face Protection	Chemical resistant goggles must be worn.
Hand protection	Chemical resistant nitrile rubber gloves
Body Protection	Wear long-sleeved shirt and long pants and shoes plus socks.
Respiratory Protection	When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Exposure Limits

Disulfoton	298-04-4	ACGIH	TWA	0.05 mg/m3
		NIOSH	REL	0.1 mg/m3
		OSHA Z1A	TWA	0.1 mg/m3
		US CA OEL	TWA PEL	0.1 mg/m3
		TX ESL	ST ESL	1 ug/m3
		TX ESL	AN ESL	0.1 ug/m3

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	multicolored
Physical State	granular

SECTION 10. STABILITY AND REACTIVITY

Conditions to Avoid	Sustained temperatures above 37.8 °C (100 °F).
Incompatibility	Strong oxidizing agents Bases Strong acids
Hazardous Decomposition Products	Carbon dioxide (CO2) dimethyl disulfide
Hazardous Reactions	No hazardous reactions when stored and handled according to prescribed instructions. Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity data have been bridged from a similar systemic rose and flower care formulation containing a similar amount of the active ingredient, disulfoton. The non-acute information pertains to the technical-grade



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active ingredient.

Acute Oral Toxicity male rat: LD50: 1,411 mg/kg
female rat: LD50: 347 mg/kg

Acute Dermal Toxicity rabbit: LD50: > 2,000 mg/kg

Acute Inhalation Toxicity male rat: LC50: 3.6 mg/l
Exposure time: 4 h
Determined in the form of dust.
female rat: LC50: 1.2 mg/l
Exposure time: 4 h
Determined in the form of dust.
male rat: LC50: 14.4 mg/l
Exposure time: 1 h
Determined in the form of dust.
Extrapolated from the 4 hr LC50.
female rat: LC50: 4.8 mg/l
Exposure time: 1 h
Determined in the form of dust.
Extrapolated from the 4 hr LC50.

Skin Irritation rabbit: Slight irritation.

Eye Irritation rabbit: Moderate eye irritation.

Sensitization guinea pig: Non-sensitizing.

Chronic Toxicity Disulfoton caused cholinesterase inhibition, eye effects and/or increased mortality in chronic studies in rats and dogs.

Assessment Carcinogenicity

Disulfoton was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH

Disulfoton

298-04-4

Group A4

NTP

None.

IARC

None.

OSHA

None.

Reproductive & Developmental Toxicity

REPRODUCTION: Disulfoton was not a primary reproductive toxicant in a two-generation reproduction study in rats. Reproductive effects were observed only



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at doses that caused systemic toxicity.

DEVELOPMENTAL TOXICITY: Disulfoton was not a primary developmental toxicant in rats and rabbits. Developmental effects were observed at doses that caused maternal toxicity.

Neurotoxicity

Disulfoton did not cause delayed neurotoxicity in hens. In acute and subchronic neurotoxicity screening studies in rats, neurobehavioral effects related to cholinergic toxicity were seen without correlating morphological changes in the neural tissues. Disulfoton caused marginal delays in developmental landmarks at maternally toxic doses in the offspring in a developmental neurotoxicity screening study in rats.

Mutagenicity

Disulfoton is positive in some mutagenicity studies without activation but negative or weakly positive in most with activation. With no carcinogenicity concerns and no reproductive toxicity concerns at relevant dose levels, the mutagenicity concerns are low.

SECTION 12. ECOLOGICAL INFORMATION

Environmental Precautions

Do not allow to get into surface water, drains and ground water. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance

Do not contaminate water, food, or feed by disposal. Dispose in accordance with all local, state/provincial and federal regulations. Never place unused product down any indoor or outdoor drain. Follow advice on product label and/or leaflet.

Container Disposal

Do not re-use empty containers. Place empty container in trash. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or incineration, or if allowed by State and Local authorities, by burning. Follow advice on product label and/or leaflet.

RCRA Classification

The RCRA Classifications may be on the individual component(s) and not necessarily on the product as a whole.

298-04-4 Disulfoton
US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261): P039

298-04-4 Disulfoton
US. EPA Resource Conservation and Recovery Act (RCRA) P List of Hazardous Wastes (40 CFR 261.33(e) and 40 CFR 302 [CERCLA]): P039



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SECTION 14. TRANSPORT INFORMATION

DOT CLASSIFICATION:

Not regulated for all modes of Transport

FREIGHT CLASSIFICATION:

Insecticides or Fungicides, N.O.I.; other than poison

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 72155-49

US Federal Regulations

TSCA list

None.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

None.

SARA Title III - Section 302 - Notification and Information

Disulfoton 298-04-4

SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

Disulfoton 298-04-4 CA, CT, IL, LA, MA, MN, NJ, PA, RI

Canadian Regulations

Canadian Domestic Substance List

None.

Environmental

CERCLA

Disulfoton 298-04-4 1 lbs

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.



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SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Reactivity - 1 Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason to Revise: Updated due to new system and numbering scheme., Updated for general editorial purposes.

Revision Date: 02/04/2009

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