



**Material Safety Data Sheet**  
**DI-SYSTON® 8 EMULSIFIABLE SYSTEMIC INSECTICIDE**

MSDS Number: 102000016843  
 MSDS Version 2.0  
 Revision Date: 10/11/2007

**SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION**

**Product Name** DI-SYSTON® 8 EMULSIFIABLE SYSTEMIC INSECTICIDE  
**MSDS Number** 102000016843  
**EPA Registration No.** 264-734

Bayer CropScience  
 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: 1-866-99BAYER (1-866-992-2937)

**SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS**

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Disulfoton	298-04-4	85.00
Polyoxyethylene-nonylphenyl-ether-phosphate	68412-53-3	2.28
Naphthalene	91-20-3	0.20

**SECTION 3. HAZARDS IDENTIFICATION**

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

**Emergency Overview** Danger! Fatal if swallowed, inhaled or absorbed through the skin. Do not get in eyes, on skin, or on clothing. Do not breathe vapours or spray mist. Wash thoroughly with soap and water after handling.

**Physical State** liquid, clear

**Odor** aromatic

**Appearance** colourless to yellow

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

**Immediate Effects**

**Eye** May be absorbed through the eye and produce symptoms similar to those from ingestion. Do not get in eyes.

**Skin** Fatal if absorbed through the skin. Do not get in eyes, on skin, or on clothing.



**Material Safety Data Sheet**

MSDS Number: 102000016843  
MSDS Version 2.0

**DI-SYSTON® 8 EMULSIFIABLE SYSTEMIC INSECTICIDE**

<b>Ingestion</b>	Cause nausea, vomiting, diarrhea, abdominal cramps, excess salivation, pinpoint pupils, blurred vision, profuse sweating, muscle spasms. Fatal if swallowed. Do not take internally.
<b>Inhalation</b>	May produce symptoms similar to those from ingestion. Fatal if inhaled. Do not breathe vapours or spray mist.
<b>Chronic or Delayed Long-Term</b>	This product or its components may have target organ effects. This product or its components may have long term (chronic) health effects.
<b>Medical Conditions Aggravated by Exposure</b>	Any disease, medication or prior exposure which reduces normal cholinesterase activity may increase susceptibility to the toxic effects of the active ingredient. Allow no further exposure to any cholinesterase inhibitor until full recovery is assured.
<b>Potential Environmental Effect</b>	Toxic to fish and wildlife. Toxic to bees.

**SECTION 4. FIRST AID MEASURES**

<b>General</b>	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
<b>Eye</b>	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.
<b>Skin</b>	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.
<b>Ingestion</b>	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.
<b>Inhalation</b>	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.
<b>Notes to Physician Signs and Symptoms</b>	The following symptoms may occur: sweating constriction of pupils stomach pain Vomiting Diarrhoea
<b>Hazards</b>	This product is a cholinesterase inhibiting organophosphorous pesticide.



**Material Safety Data Sheet**

**DI-SYSTON® 8 EMULSIFIABLE SYSTEMIC INSECTICIDE**

MSDS Number: 102000016843  
MSDS Version 2.0

**Treatment**

ANTIDOTE: Administer atropine sulfate in large therapeutic doses. Repeat as necessary to the point of tolerance. 2-PAM is also antidotal and may be administered in conjunction with atropine.

The product inhibits cholinesterase resulting in stimulation of the central nervous system, the parasympathetic nervous system, and the somatic motor nerves. Do not give morphine. Watch for pulmonary edema, which may develop in serious cases of poisoning even after 24-48 hours. At first sign of pulmonary edema, the patient should be placed in an oxygen tent and treated symptomatically. Probable mucosal damage may contraindicate the use of gastric lavage.

**SECTION 5. FIRE FIGHTING MEASURES**

**Flash point** 90 °C / 194 °F

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

**Fire Fighting Instructions** Keep out of smoke. Fight fire from upwind position. Cool closed containers/ tanks exposed to fire with water spray. 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. Remove all sources of ignition.

**Methods for Cleaning Up** Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations. Contaminated soil may have to be removed and disposed.

**Additional Advice** Use personal protective equipment. 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** Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation. Handle and open container in a manner as to prevent spillage.



**Material Safety Data Sheet**

MSDS Number: 102000016843  
MSDS Version 2.0

**DI-SYSTON® 8 EMULSIFIABLE SYSTEMIC INSECTICIDE**

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

**Work/Hygienic Procedures** Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

**Min/Max Storage Temperatures** Recommended minimum transport/storage temperature: -18 °C / -0 °F  
Recommended maximum transport/storage temperature: 38 °C / 100 °F  
The 30-day storage temperature average must not exceed the recommended maximum.

**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 PPE separately from other laundry.

**Eye/Face Protection** Tightly fitting safety goggles

**Hand Protection** Chemical-resistant gloves (barrier laminate, butyl rubber, nitrile rubber or Viton)

**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	
		Form of exposure		Inhalable fraction and vapor	
		NIOSH	REL	0.1 mg/m3	
		OSHA Z1A	TWA	0.1 mg/m3	
Naphthalene	91-20-3	US CA OEL	TWA PEL	0.1 mg/m3	
		ACGIH	TWA	10 ppm	
		ACGIH	STEL	15 ppm	
		NIOSH	REL	10 ppm	50 mg/m3
		NIOSH	STEL	15 ppm	75 mg/m3
		OSHA Z1	PEL	10 ppm	50 mg/m3
		OSHA Z1A	TWA	10 ppm	50 mg/m3
		OSHA Z1A	STEL	15 ppm	75 mg/m3
US CA OEL	TWA PEL	10 ppm	50 mg/m3		



**Material Safety Data Sheet**  
**DI-SYSTON® 8 EMULSIFIABLE SYSTEMIC INSECTICIDE**

MSDS Number: 102000016843  
 MSDS Version 2.0

US CA OEL                      STEL                      15 ppm      75 mg/m3

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	colourless to yellow
<b>Physical State</b>	liquid, clear
<b>Odor</b>	aromatic
<b>pH</b>	2.9 (10 %)
<b>Density</b>	approx. 1.12 g/cm <sup>3</sup> at 20 °C
<b>Melting / Freezing Point</b>	< 0 °C / 32 °F

**SECTION 10. STABILITY AND REACTIVITY**

<b>Conditions to Avoid</b>	Exposure to moisture. Sustained temperatures above 37.8 °C (100 °F).
<b>Incompatibility</b>	Oxidizing agents Bases
<b>Hazardous Decomposition Products</b>	Thermal decomposition can lead to release of: Sulphur oxides Carbon monoxide toxic gases/vapours
<b>Hazardous Reactions</b>	Stable under recommended storage conditions.

**SECTION 11. TOXICOLOGICAL INFORMATION**

The sensitization hazard has been bridged from the technical-grade active ingredient, disulfoton. The remaining acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the technical-grade active ingredient.

<b>Acute Oral Toxicity</b>	male rat: LD50: 12.7 mg/kg  female rat: LD50: 3.3 mg/kg
<b>Acute Dermal Toxicity</b>	male rabbit: LD50: 9.2 mg/kg  female rabbit: LD50: 16.9 mg/kg



**Material Safety Data Sheet**

**DI-SYSTON® 8 EMULSIFIABLE SYSTEMIC INSECTICIDE**

MSDS Number: 102000016843  
MSDS Version 2.0

**Acute Inhalation Toxicity** male rat: LC50: 0.170 mg/l  
Exposure time: 1 h  
Determined in the form of liquid aerosol.

female rat: LC50: 0.032 mg/l  
Exposure time: 1 h  
Determined in the form of liquid aerosol.

**Skin Irritation** This product is highly toxic and can be readily absorbed through the skin.

**Eye Irritation** This product is highly toxic and can be readily absorbed through the mucous membranes of the eye.

**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
Naphthalene	91-20-3	Group A4

**NTP**

Naphthalene	91-20-3
-------------	---------

**IARC**

Naphthalene	91-20-3	Overall evaluation: 2B
-------------	---------	------------------------

**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 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.



**Material Safety Data Sheet**

**DI-SYSTON® 8 EMULSIFIABLE SYSTEMIC INSECTICIDE**

MSDS Number: 102000016843  
MSDS Version 2.0

**SECTION 12. ECOLOGICAL INFORMATION**

**Environmental Precautions** Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. Apply this product as specified on the label.

**SECTION 13. DISPOSAL CONSIDERATIONS**

**General Disposal Guidance** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**Container Disposal** Triple rinse containers. 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. If burned, stay out of smoke.

**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

91-20-3 Naphthalene  
US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261): U165

91-20-3 Naphthalene  
US. EPA Resource Conservation and Recovery Act (RCRA) U List of Hazardous Wastes (40 CFR 261.33(f) and 40 CFR 302 [CERCLA]): U165



**Material Safety Data Sheet**

**DI-SYSTON® 8 EMULSIFIABLE SYSTEMIC INSECTICIDE**

MSDS Number: 102000016843  
MSDS Version 2.0

**SECTION 14. TRANSPORT INFORMATION**

**DOT TRANSPORTATION CLASSIFICATION:**

UN3018, Organophosphorus pesticides, liquid, toxic ( Disulfoton) // 6.1 // PG I // RQ

**IMDG CLASSIFICATION:**

UN3018, Organophosphorus pesticides, liquid, toxic ( Disulfoton 85% ) // 6.1 // PG I // RQ // Marine Pollutant

**FREIGHT CLASSIFICATION:**

INSECTICIDES OR FUNGICIDES, N.O.I., POISON, OTHER THAN GASES THAT ARE POISONOUS BY INHALATION

**SECTION 15. REGULATORY INFORMATION**

**EPA Registration No.** 264-734

**US Federal Regulations**

**TSCA list**

Polyoxyethylene-nonylphenyl-ether-phosphate 68412-53-3  
Naphthalene 91-20-3

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

Naphthalene 91-20-3

**SARA Title III - Section 302 - Notification and Information**

Disulfoton 298-04-4

**SARA Title III - Section 313 - Toxic Chemical Release Reporting**

Naphthalene 91-20-3 0.1%

**US States Regulatory Reporting**

**CA Prop65**

This product contains a chemical known to the State of California to cause cancer.

Naphthalene 91-20-3

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
Naphthalene	91-20-3	CA, CT, IL, MN, NJ, PA, RI

**Canadian Regulations**

**Canadian Domestic Substance List**

Polyoxyethylene-nonylphenyl-ether-phosphate 68412-53-3  
Naphthalene 91-20-3

**Environmental**

**CERCLA**

Disulfoton 298-04-4 1 lbs



**Material Safety Data Sheet**

**DI-SYSTON® 8 EMULSIFIABLE SYSTEMIC INSECTICIDE**

MSDS Number: 102000016843  
MSDS Version 2.0

Naphthalene	91-20-3	100 lbs
<b>Clean Water Section 307 Priority Pollutants</b>		
None.		
<b>Safe Drinking Water Act Maximum Contaminant Levels</b>		
None.		

**International Regulations**

**European Inventory of Existing Commercial Substances (EINECS)**

Disulfoton	298-04-4
Naphthalene	91-20-3

**SECTION 16. OTHER INFORMATION**

NFPA 704 (National Fire Protection Association):  
Health - 4      Flammability - 2      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: 10/11/2007

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.