



Material Safety Data Sheet

**SCOURGE® INSECTICIDE WITH RESMETHRIN /
PIPERONYL BUTOXIDE 4% + 12% MF FORMULA II**

MSDS Number: 102000004837

MSDS Version 2.0

Revision Date: 06/15/2006

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name SCOURGE® INSECTICIDE WITH RESMETHRIN / PIPERONYL BUTOXIDE 4% + 12% MF FORMULA II
MSDS Number 102000004837
EPA Registration No. 432-716
Product Use A ready to use synthetic pyrethroid for effective adult mosquito (including organophosphate resistant species), midge (biting and non-biting) and black fly control.

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>
Resmethrin	10453-86-8	4.14
Piperonyl butoxide	51-03-6	12.42
Naphthalene	91-20-3	0.55
Distillates (petroleum), hydrotreated light paraffinic	64742-55-8	

SECTION 3. HAZARDS IDENTIFICATION

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

Emergency Overview Caution! Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes and clothing. Highly toxic to fish.

Physical State liquid

Odor mild solvent

Appearance yellow to amber

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

Immediate Effects

Eye May cause mild irritation to eyes. Avoid contact with eyes.



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Skin	May cause slight irritation. Harmful if absorbed through skin. Avoid contact with skin and clothing.
Ingestion	Harmful if swallowed. Do not take internally.
Inhalation	Avoid breathing spray mist.
Chronic or Delayed Long-Term	This product contains ingredients that are considered to be probable or suspected human carcinogens (see Section 11 - Chronic). This product or its components may have target organ effects.

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	Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. 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.
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**

Local:
skin and eye paraesthesia which may be severe
The product causes irritation of eyes, skin and mucous membranes.
Inhalation may provoke the following symptoms:
irritation
cough

Systemic:
excitement
gastrointestinal discomfort
tremors
dizziness
headache
apathy



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nausea
vomiting
abdominal pain
muscular fasciculation
unconsciousness

Hazards This product contains a pyrethroid. Must NOT be confused with organophosphorus compounds!

Treatment Local treatment: Initial treatment should be symptomatic and supportive. After eye contact: Instillation of local anaesthetic drops e.g. 1% Amethocaine Hydrochloride eye drops. Give Analgesics as necessary.

Published data indicate Vitamin E acetate can prevent and/or mitigate symptoms of paresthesia (skin irritation) caused by synthetic pyrethroids.

Systemic treatment: Endotracheal intubation and gastric lavage, followed by administration of charcoal. Monitoring of respiratory and cardiac functions. ECG - monitoring (Electrocardiogram). Check for pulmonary oedema in event of inhalation. Keep airway clear, administer artificial respiration if necessary. Against convulsions: give diazepam. For adults 5-10 mg intravenously as necessary until fully sedated; for children 2.5 mg i.v. There is no specific antidote. Contraindication: atropine. Contraindication: derivatives of adrenaline. Recovery: spontaneous.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point > 93.4 °C / > 200.1 °F

Suitable Extinguishing Media carbon dioxide (CO2), dry chemical, foam, water

Fire Fighting Instructions Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Dike area to prevent runoff and contamination of water sources. Equipment or materials involved in pesticide fires may become contaminated.

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.



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- Methods for Cleaning Up** Take up with absorbent material (e.g. sand, diatomaceous earth or a proprietary absorbent material). Keep in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.
- Additional Advice** Use personal protective equipment. Do not allow product to enter streams, sewers or other waterways.

SECTION 7. HANDLING AND STORAGE

- Handling Procedures** Handle and open container in a manner as to prevent spillage.
- Storing Procedures** Do not contaminate water, food, or feed by storage or disposal. 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.
- Take off contaminated clothing and shoes immediately. Then wash thoroughly and put on clean clothing.
- Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. As soon as practical, wash thoroughly and change into 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 PPE separately from other laundry.
- Engineering Controls** Ensure adequate ventilation, especially in confined areas. Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.
- Eye/Face Protection** tightly fitting safety goggles
- Hand Protection** Chemical resistant nitrile rubber gloves
- Body Protection** Wear long-sleeved shirt and long pants and shoes plus socks.
- Respiratory Protection** When respiratory protection is necessary under the conditions of use, wear a respirator approved by the National Institute for Occupational Safety and Health (NIOSH).



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Exposure Limits

Naphthalene	91-20-3	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		
		US CA OEL	STEL	15 ppm 75 mg/m3		
		ACGIH	TWA	5 mg/m3		
		Distillates (petroleum), hydrotreated light paraffinic	64742-55-8	Form of Exposure	Mist.	
				ACGIH	STEL	10 mg/m3
				Form of Exposure	Mist.	
ACGIH NIC	TWA			0.2 mg/m3		
		Form of Exposure	Inhalable fraction.			

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	yellow to amber
Physical State	liquid
Odor	mild solvent
Specific Gravity	0.866 at 20 °C
Density	ca. 0.866 g/cm ³ at 20 °C
Bulk Density	7.23 lbs/gal
Water Solubility	insoluble
Viscosity	34.3 mPa.s at 21 °C

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Exposure to extreme heat. Sources of ignition.
Incompatibility	strong reducing agents strong oxidizing agents



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Hazardous Decomposition Products Thermal decomposition
Carbon monoxide
carbon dioxide (CO₂)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity studies have been bridged from a similar formulation containing a higher percentage of the active ingredients, resmethrin and piperonyl butoxide. The non-acute information pertains to the technical-grade active ingredients.

Acute Oral Toxicity rat: LD50: > 2,700 mg/kg

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

Acute Inhalation Toxicity male/female rat: LC50: > 2.6 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.
(actual)
Maximum attainable concentration.
No deaths

male/female rat: LC50: > 10.4 mg/l
Exposure time: 1 h
Determined in the form of liquid aerosol.
Extrapolated from the 4 hr LC50.
(actual)

Skin Irritation rabbit: Slight irritation.

Eye Irritation rabbit: Minimally irritating.

Sensitization guinea pig: Non-sensitizing.

Chronic Toxicity Resmethrin: In a chronic dietary rat study the primary target organ was the liver with secondary effects observed in the thyroid.

Piperonyl Butoxide: In chronic feeding studies in dogs and rats, effects included decreased body weights and/or increased organ weights (liver, kidney, adrenal).

Assessment Carcinogenicity

Resmethrin: EPA has classified the carcinogenic potential of resmethrin as "likely to be a human carcinogen" due to liver tumors in male mice and female rats.

Piperonyl butoxide: There was no evidence of a carcinogenic potential in a chronic feeding study in rats. In an oncogenicity study in mice, there was an increased incidence of liver tumors. The US EPA has categorized piperonyl butoxide as a group C carcinogen, possible human carcinogen, based on limited evidence of cancer in laboratory animals.



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ACGIH

Naphthalene 91-20-3 Group A4

NTP

Naphthalene 91-20-3
Distillates (petroleum), hydrotreated light paraffinic 64742-55-8

IARC

Piperonyl butoxide 51-03-6 Overall evaluation: 3
Naphthalene 91-20-3 Overall evaluation: 2B
Distillates (petroleum), hydrotreated light paraffinic 64742-55-8 Overall evaluation: 1

OSHA

None.

**Reproductive &
Developmental Toxicity**

DEVELOPMENTAL TOXICITY

Resmethrin: Resmethrin is not a primary developmental toxicant based on developmental toxicity studies in rats and rabbits. Any developmental effects observed were secondary to maternal toxicity.

Piperonyl butoxide: Developmental, embryotoxic or teratogenic effects were not produced in developmental toxicity studies in rats and rabbits.

REPRODUCTION

Resmethrin: In a multi-generation study in rats there was a slight increase in premature stillbirths and a decrease in pup body weights.

Piperonyl Butoxide: There were no reproductive effects observed in a two-generation study in rats.

Neurotoxicity

Resmethrin: Resmethrin was not neurotoxic in acute and subchronic studies in rats.

Piperonyl Butoxide: Data not available.

Mutagenicity

Resmethrin: Resmethrin was not mutagenic in a test performed with the bacterium, Salmonella typhimurium.

Piperonyl Butoxide: Sufficient evidence exists indicating piperonyl butoxide does not have significant potential for mutagenicity.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to Fish

Oncorhynchus mykiss (rainbow trout)
LC50: 0.00240 mg/l
Exposure time: 96 h

Bluegill sunfish
LC50: 0.013 mg/l



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Exposure time: 96 h

Cyprinodon variegatus (sheepshead minnow)
LC50: 0.0088 mg/l
Exposure time: 96 h

Toxicity to other organisms

Acute Oral
California Quail
LD50: > 2,000 mg/kg
The value mentioned relates to the active ingredient resmethrin.

Japanese quail
LC50: > 5,000 ppm
The value mentioned relates to the active ingredient resmethrin.

Mallard duck
LC50: > 5,000 ppm
The value mentioned relates to the active ingredient resmethrin.

Environmental Precautions

Highly toxic to fish. For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below mean high water mark. Drift and runoff from treated areas may be hazardous to fish/aquatic organisms in adjacent sites. Consult your State's Fish and Wildlife Agency before treating water areas. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Apply this product as specified on the label.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance	Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of at an approved waste facility.
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.
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



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SECTION 14. TRANSPORT INFORMATION

DOT CLASSIFICATION:
Non-Bulk Packages:
Not regulated for Domestic Surface Transportation

FREIGHT CLASSIFICATION:
Insecticides or Fungicides, N.O.I., other than poison

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 432-716

US Federal Regulations

TSCA list

Piperonyl butoxide	51-03-6
Naphthalene	91-20-3
Distillates (petroleum), hydrotreated light paraffinic	64742-55-8

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

Naphthalene	91-20-3
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SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

Resmethrin	10453-86-8	1.0%
Piperonyl butoxide	51-03-6	1.0%
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
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This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Resmethrin	10453-86-8	Developmental toxin.
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US State Right-To-Know Ingredients

Resmethrin	10453-86-8	NJ
Piperonyl butoxide	51-03-6	NJ
Naphthalene	91-20-3	CA, CT, IL, MN, NJ, PA, RI
Distillates (petroleum), hydrotreated light paraffinic	64742-55-8	CA, MA

Canadian Regulations

Canadian Domestic Substance List

Resmethrin	10453-86-8
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Piperonyl butoxide	51-03-6
Naphthalene	91-20-3
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Environmental

CERCLA

Naphthalene	91-20-3	100 lbs
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Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

International Regulations

European Inventory of Existing Commercial Substances (EINECS)

Resmethrin	10453-86-8
Piperonyl butoxide	51-03-6
Naphthalene	91-20-3
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SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

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

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

Reason to Revise: Re-numbered due to system update; Updated sections as needed.

Revision Date: 06/15/2006

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