



Material Safety Data Sheet

PERMANONE® 31-66

MSDS Number: 102000004844

MSDS Version 2.0

Revision Date: 12/08/2010

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name PERMANONE® 31-66
MSDS Number 102000004844
EPA Registration No. 432-1250

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. HAZARDS IDENTIFICATION

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

Emergency Overview Caution! Harmful if swallowed, inhaled or absorbed through the skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with skin, eyes and clothing. Avoid inhalation of vapour or mist.

Physical State liquid

Odor mild

Appearance dark amber

Exposure routes Skin contact, Ingestion, Inhalation, Eye contact

Immediate Effects

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

Skin May cause slight irritation. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Harmful if absorbed through skin. Avoid contact with skin and clothing.

Ingestion Harmful if swallowed. Do not take internally.

Inhalation Harmful if inhaled. Avoid inhalation of vapour or mist.

Chronic or Delayed Long-Term

This product or its components may have target organ effects. This product or its components may have long term (chronic) health effects.



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Potential Environmental Effect Highly toxic to bees. Extremely toxic to fish and aquatic organisms.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Permethrin	52645-53-1	31.28
Piperonyl butoxide	51-03-6	66.00
Distillates (petroleum), hydrotreated light	64742-47-8	2.72

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	
Hazards	This product contains a pyrethroid.
Treatment	Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.

SECTION 5. FIRE FIGHTING MEASURES

Flash point	> 93 °C / > 199 °F
Suitable extinguishing media	Carbon dioxide (CO2), Dry chemical, Foam, Water



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Fire Fighting Instructions

Keep out of smoke. Fight fire from upwind position. Cool closed containers 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.

Methods for cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice

Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal.

SECTION 7. HANDLING AND STORAGE

Handling procedures

Use only in area provided with appropriate exhaust ventilation. Handle and open container in a manner as to prevent spillage.

Storing Procedures

Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, 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: 4 °C / 39 °F

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection

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



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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** Safety glasses with side-shields
- 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

Permethrin	52645-53-1	OES BCS* TX ESL	TWA ST ESL	10 mg/m3 50 ug/m3
Piperonyl butoxide	51-03-6	TX ESL OES BCS*	AN ESL TWA	5 ug/m3 500 ppm

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** dark amber
- Physical State** liquid
- Odor** mild
- Density** ca. 1.11 g/cm³ at 20 °C
- Water solubility** insoluble

SECTION 10. STABILITY AND REACTIVITY

- Incompatibility** Strong oxidizing agents
- Chemical Stability** Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on this product as formulated. The non-acute information pertains to the two technical-grade active ingredients, permethrin and piperonyl butoxide.



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Acute oral toxicity male/female combined rat: LD50: 1,250 mg/kg

Acute dermal toxicity rabbit: LD50: > 2,020 mg/kg

Acute inhalation toxicity rat: LC50: > 4.4 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.

rat: LC50: > 17.6 mg/l
Exposure time: 1 h
Determined in the form of liquid aerosol.
Extrapolated from the 4 hr LC50.

Skin irritation rabbit: slight irritation

Eye irritation rabbit: Minimally irritating.

Sensitisation guinea pig: Sensitising

Chronic toxicity Permethrin caused neurobehavioral effects (e.g., tremors) and/or organ effects (liver, lung, kidney) in chronic studies in rats, mice and dogs.

Piperonyl butoxide caused decreased body weights and/or increased organ weights (liver, kidney, adrenal) in chronic studies in rats and dogs.

Assessment Carcinogenicity

Permethrin has low oncogenic potential in mice and no oncogenic potential in rats, therefore, EPA has concluded the likelihood of oncogenicity effects in humans from permethrin to be extremely low or nonexistent.

Piperonyl butoxide gave no evidence of a carcinogenic potential in a lifetime feeding study in rats. In an oncogenicity study in mice, piperonyl butoxide caused 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.

ACGIH

None.

NTP

None.

IARC

Permethrin
Piperonyl butoxide

52645-53-1
51-03-6

Overall evaluation: 3
Overall evaluation: 3

OSHA

None.

Reproductive toxicity

REPRODUCTION:
Permethrin was not a reproductive toxicant in multi-generation reproduction studies in rats.

Piperonyl butoxide was not a reproductive toxicant in a two-generation study in



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rats.

DEVELOPMENTAL TOXICITY:

Permethrin was not a primary developmental toxicant in rats, mice and rabbits. Developmental effects (e.g., decreased fetal weights) were observed in rats and rabbits but were considered secondary to maternal toxicity.

Piperonyl butoxide did not cause developmental, embryotoxic or teratogenic effects in developmental toxicity studies in rats and rabbits.

Assessment neurotoxicity

Permethrin caused neurobehavioral effects (e.g., tremors) in an acute and subchronic neurotoxicity screening study in rats without any correlating neuropathological changes.

Piperonyl butoxide did not demonstrate the potential to cause neurotoxicity in standard toxicity studies submitted to the Agency. EPA has concluded that there is not a concern for neurotoxicity resulting from exposure to piperonyl butoxide.

Mutagenicity

Permethrin was not mutagenic or genotoxic in a battery of in vitro and in vivo mutagenicity studies.

Piperonyl butoxide does not have significant potential for mutagenicity based on sufficient evidence.

SECTION 12. ECOLOGICAL INFORMATION

Environmental precautions

Do not apply when weather conditions favor runoff or drift. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. 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. Apply this product as specified on the label.

Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

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 on site or at an approved waste disposal 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 Information

Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.



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SECTION 14. TRANSPORT INFORMATION

CFR	Not dangerous goods / not hazardous material
IMDG	
UN-Number	3082
Class	9
Packaging group	III
Marine pollutant	Marine Pollutant
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PERMETHRIN, PIPERONYL BUTOXIDE SOLUTION)
IATA	
UN-Number	3082
Class	9
Packaging group	III
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PERMETHRIN, PIPERONYL BUTOXIDE SOLUTION)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

Freight Classification: INSECTICIDES OR FUNGICIDES, N.O.I., OTHER THAN POISON

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 432-1250

US Federal Regulations

TSCA list

Piperonyl butoxide	51-03-6
Distillates (petroleum), hydrotreated light	64742-47-8

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

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

Permethrin	52645-53-1	1.0%
Piperonyl butoxide	51-03-6	1.0%

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.



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US State Right-To-Know Ingredients

Permethrin	52645-53-1	NJ
Piperonyl butoxide	51-03-6	NJ

Canadian Regulations

Canadian Domestic Substance List

Piperonyl butoxide	51-03-6
Distillates (petroleum), hydrotreated light	64742-47-8

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

International Regulations

European Inventory of Existing Commercial Substances (EINECS)

Permethrin	52645-53-1
Piperonyl butoxide	51-03-6
Distillates (petroleum), hydrotreated light	64742-47-8

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 1 Reactivity - 0 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1 Flammability - 1 Physical Hazard - PPE -

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

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

Revision Date: 12/08/2010

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