



Material Safety Data Sheet

Purified Pyrethrum Extract 20% Insecticide

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products is regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling. All necessary and appropriate precautionary, use, and storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Purified Pyrethrum Extract 20% Insecticide
MSDS IDENTIFICATION NO.: ENV-0025
CHEMICAL NAME: Mixture: pyrethrins
EPA REGISTRATION NUMBER: 73049-213
PRODUCT DESCRIPTION: For formulation into insecticides only.

MANUFACTURER

Valent BioSciences Corporation
870 Technology Way
Libertyville, IL 60048.

EMERGENCY TELEPHONE NUMBERS

HEALTH EMERGENCY OR SPILL (24 hr):
Within the United States: (877) 315-9819
Outside the United States: (651) 632-6184.

PRODUCT INFORMATION

ENVIRONMENTAL SCIENCE PRODUCTS:
(866) 822-3731
www.valentbiosciences.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Weight/ Percent	ACGIH Exposure Limits	OSHA Exposure Limits	Manufacturer's Exposure Limits
Pyrethrin* (8003-34-7).	20	5 mg/m ³ TWA	5 mg/m ³ TWA	See regulated exposure limits.
White mineral oil † (8042-47-5).	80	None.	None.	See regulated exposure limits.
Synthetic Isoparaffinic Hydrocarbon † (64742-47-8).	80	None.	None.	1200 mg/m ³ TWA
Distillates, petroleum, hydrotreated, light † (64742-47-8).	80	None.	None.	See regulated exposure limits.

* Active Ingredient

† Alternate Formulas, in which chemical noted may or may not be present.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW.

A YELLOW TO BROWN VISCOUS LIQUID WITH A DAISY OR CHRYSANTHEMUM ODOR

CAUTION

- Harmful if swallowed or absorbed through skin.
- Avoid contact with eyes, skin and clothing.
- Skin contact (especially to the face) may result in a tingling sensation and reddening of the skin.
- Toxic to aquatic organisms, including fish and invertebrates.
- Keep out of reach of children.

POTENTIAL HEALTH EFFECTS

Acute Toxicity (Primary Routes of Exposure): Inhalation, eye and skin contact.

Signs and Symptoms of Systemic Effects: May cause gastrointestinal effects such as nausea, vomiting and diarrhea. Inhalation of high vapor or mist concentrations or ingestion of large quantities can result in nervous system effects such as dizziness, headache, loss of coordination, tremors, loss of consciousness and coma. Symptoms usually regress with no long lasting effects.

Acute Eye Contact: This product can cause brief and/or minor eye irritation. The expected adverse health effects resulting from an exposure may include redness and possible swelling.

Acute Skin Contact: This product is slightly toxic when absorbed through the skin. This product can cause brief and/or minor irritation. The expected adverse health effects resulting from an exposure may include redness and possibly some minor swelling. This product is not expected to cause allergic skin reactions.

This product contains a pyrethroid. Skin contact with pyrethroids can result in a temporary burning, tingling or itching sensation.

Acute Ingestion: This product is minimally toxic when ingested.

Acute Inhalation: This product is minimally toxic when inhaled.

Chronic Toxicity (including cancer): This product is not listed as a carcinogen by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), the Occupational Safety and Health Administration (OSHA) or ACGIH.

Potentially Aggravated Medical Conditions: Individuals with allergy history or pre-existing dermatitis should use extra precautions in handling this product.

For complete discussion of the toxicology data from which this evaluation was made, refer to Section 11. For Regulatory Information, refer to Section 15.

4. FIRST AID MEASURES

**EMERGENCY NUMBER: within the United States (877) 315-9819;
outside the United States (651) 632-6184**

EYE CONTACT:

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 poison control center or doctor for treatment advice.

SKIN CONTACT:

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

INGESTION:

Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

INHALATION:

Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

NOTES TO PHYSICIAN:

This product contains a Pyrethroid pesticide. If a small amount is ingested (or if treatment is delayed) oral administration of large amounts of activated charcoal and a cathartic is probably sufficient therapy. If large amounts are ingested and vomiting has not occurred emesis should be induced with supervision. Keep patients head below hips to prevent aspiration. If symptoms such as loss of gag reflex, convulsions or unconsciousness occur before emesis, gastric lavage using a cuffed endotracheal tube should be considered.

Do not administer milk, cream or other substance containing vegetable or animal fats, which enhance the absorption of lipophilic substances.

If localized paresthesia develops, the site should be thoroughly washed with soap and water. Cold cream can be applied to help diminish the effect.

Ingestion of this product or subsequent vomiting can result in aspiration of light hydrocarbon liquid, which can cause pneumonitis.

5. FIRE FIGHTING MEASURES

FLASH POINT:	169° F (76° C)
FLASH POINT METHOD:	TCC
FLAME EXTENSION:	Not applicable.
AUTOIGNITION:	No data available.
EXTINGUISHING MEDIA:	Water fog, carbon dioxide, foam, dry chemical.

FLAMMABLE LIMITS IN AIR - LOWER (%):	0.6%
FLAMMABLE LIMITS IN AIR - UPPER (%):	7.0%

NFPA RATING:

Health:	1.
Flammability:	2
Reactivity:	0.
Special:	None.

(Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using professional judgement. Values were not available in the guidelines or published evaluations prepared by the National Fire Protection Association, NFPA.

FIRE & EXPLOSION HAZARDS: Material is combustible. Do not use or store near heat or open flame. Liquid can release vapors that readily form flammable mixtures at or above the flash point. Product can accumulate a static charge which may cause a fire or explosion.

FIRE FIGHTING INSTRUCTIONS: Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse. Read the entire document.

HAZARDOUS COMBUSTION PRODUCTS: Combustion may produce toxic gases of: Carbon dioxide, carbon monoxide and various hydrocarbons etc.

6. ACCIDENTAL RELEASE MEASURES

EMERGENCY TELEPHONE NUMBERS

HEALTH EMERGENCY OR SPILL (24 hr):

Within the United States: (877) 315-9819

Outside the United States: (651) 632-6184

OBSERVE PRECAUTIONS IN SECTION 8: PERSONAL PROTECTION

If it is safe to do so:

- Evacuate non-essential personnel from the area to prevent human exposure.
- Remove all sources of ignition.
- Ventilate area.
- Stop the source of the spill.
- Contain the spill to prevent further contamination of the soil, surface water or ground water.
- May produce slippery conditions.

GENERAL AND DISPOSAL: Use proper protective equipment to minimize personal exposure (see Section 8). Take all necessary action to prevent and to remedy the adverse effect of the spill. Ensure that the disposal is in compliance with all Federal, Provincial, and local regulations (See Section 15 for applicable RCRA Number). Refer to Section 15 for applicable Reportable Quantity (RQ) and other regulatory requirements.

SPILL OR LEAK

CONTAINMENT: Small Spills: Absorb with an inert absorbent material such as granular clay, sawdust, or pet litter. Sweep up carefully while avoiding the formation of dust cloud. Place in an approved chemical waste container for disposal. Do not allow spilled material to enter any body of water.

Large Spills: Eliminate all ignition sources. Stop leak if you can do so without coming into contact with spilled material. Dike far ahead of the spill for later disposal. All equipment used to clean up spill should be grounded. Prevent entry into waterways, sewers, basements or confined areas. Inform appropriate authorities immediately if contamination occurs.

CLEANUP: Rinse spill area with small amount of soapy water. Contain and absorb the rinsate with inert adsorbents and place into an approved chemical waste container for disposal. Area can be washed with water to remove the last trace residue. Do not allow water to contaminate water supplies or sewers.

7. HANDLING AND STORAGE

END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.

HANDLING PRECAUTIONS: Harmful if swallowed, absorbed through skin or inhaled. Avoid contact with skin, eyes or clothing. Skin contact especially to the face may result in a tingling sensation and reddening of the skin. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

STORAGE: Do not contaminate water, food or feed by storage or disposal. Store upright at room temperature. Avoid exposure to extreme temperature.

WORK/HYGIENIC PRACTICES: Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove contaminated clothing and wash clothing before reuse.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.

EYES: Do not get this material in your eyes. Eye contact can be avoided by wearing protective eyewear.

RESPIRATORY PROTECTION: Use this material only in well ventilated areas. Unless ventilation is adequate to keep airborne concentrations below recommended exposure standards, approved respiratory protection should be worn.

SKIN PROTECTION: Avoid contact with skin or clothing. Skin contact should be minimized by wearing protective clothing including long pants, long-sleeved shirt and shoes plus socks and chemical-resistant gloves. Remove contaminated clothing.

ENGINEERING CONTROLS: Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

OTHER/GENERAL PROTECTION: The usual precautions for handling chemicals should be observed. Wash hands, arms and face with soap and water after handling and before eating, drinking, chewing gum or using tobacco. Wash contaminated clothing with soap and water before reuse. Avoid contamination of feed and foodstuffs.

EXPOSURE LIMITS - See Section 2.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Viscous liquid
COLOR:	Yellow to brown
ODOR:	Daisy or chrysanthemum odor
MELTING POINT:	No data available
BOILING POINT:	> 200° C
DENSITY:	7.04 lb/gal
SPECIFIC GRAVITY:	0.842 g/mL
VAPOR PRESSURE:	No data available.
pH:	No data available
CORROSION CHARACTERISTICS:	No data available
SOLUBILITY:	Insoluble in water.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:	Stable at normal ambient temperatures.
INCOMPATIBILITY:	Strong oxidizing agents
OXIDATION/REDUCTION PROPERTIES:	Based on similar products, not expected to be an oxidizing or reducing agent.
EXPLODABILITY:	Not expected to be explosive.
HAZARDOUS POLYMERIZATION :	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	May form toxic materials such as: Carbon dioxide, carbon monoxide, various hydrocarbons, etc.
CONDITIONS TO AVOID:	Excessive heat and sources of ignition.

11. TOXICOLOGICAL INFORMATION

ACUTE (Product Specific Information):

Oral Toxicity LD ₅₀ (rats).	> 5000 mg/kg	EPA Tox Category	IV
Dermal Toxicity LD ₅₀ (rabbits)	> 2,000 mg/kg	EPA Tox Category	III
Inhalation Toxicity LC ₅₀ (rats).	> 5 mg/L	EPA Tox Category	IV
Eye Irritation (rabbits).	Non-irritating	EPA Tox Category	IV
Skin Irritation (rabbits).	Mildly irritating	EPA Tox Category	IV
Skin Sensitization (guinea pigs).	Non-sensitizer	EPA Tox Category	Not applicable.

CHRONIC/CARCINOGENICITY: In a recent study, marginally higher incidences of benign thyroid, parathyroid, ovary, and liver tumors were observed in rats and in lungs of mice following lifetime high dose exposure to pyrethrum.

The significance of these observations is questionable and under review. The doses of pyrethrum at which tumors were observed for both greatly exceeded potential human exposure from labeled uses. Independent and industry toxicological experts who have reviewed the data agree that the findings of the study do not indicate a health risk to human beings.

DEVELOPMENTAL TOXICITY: There were no birth defects or adverse effects on reproduction parameters in tests with rats and rabbits for either with pyrethrum. Pyrethrum is not considered to be teratogenic.

MUTAGENICITY: Pyrethrum was not found to be genotoxic and did not damage DNA in any study conducted (Ames mutagenicity assay, chromosome aberration in Chinese hamster ovary (CHO) cells, CHO/HGPRT assay with S9 activation, and in the unscheduled DNA synthesis (UDS) assay in cultered human liver cells).

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:

ACUTE AND LONG-TERM TOXICITY TO FISH AND INVERTEBRATES:

This product is toxic to fish. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or public waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

13. DISPOSAL CONSIDERATIONS

END USERS MUST DISPOSE OF ANY UNUSED PRODUCT AS PER THE LABEL RECOMMENDATIONS.

PRODUCT DISPOSAL:

If partly filled: Call your local solid waste agency or 1-800-CLEANUP for disposal instructions. Never place unused product down any indoor or outdoor drain. Pesticide, spray mixture or rinse water that cannot be used according to label instructions must be disposed of at or by an approved waste disposal facility.

CONTAINER DISPOSAL:

Triple rinse (or equivalent). Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

DISPOSAL METHODS:

Check government regulations and local authorities for approved disposal of this material. Dispose in accordance with applicable laws and regulations.

14. TRANSPORT INFORMATION

DOT (ground) SHIPPING NAME:

Environmentally hazardous substance, liquid, n.o.s.
(Pyrethrins)

DOT REPORTABLE QUANTITY (RQ): 0.5 gallons (pyrethrin RQ = 1 lb.)
UN/NA NUMBER: UN 3082
HAZARD CLASS: 9
PACKING GROUP: III
REMARKS: Marine pollutant when shipped in bulk or non-bulk by water.

15. REGULATORY INFORMATION

PESTICIDE REGULATIONS: All pesticides are governed under FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act). Therefore, the regulations presented below are pertinent only when handled outside of the normal use and applications of pesticides. This includes waste streams resulting from manufacturing/formulation facilities, spills or misuse of products, and storage of large quantities of products containing hazardous or extremely hazardous substances.

OTHER U.S. FEDERAL REGULATIONS:

Chemical Name	RCRA - U Series Wastes	Clean Water Act - Hazardous Substances	Clean Water Act Section 307
Pyrethrin* (8003-34-7).	None.	Listed	Not listed.
Synthetic Isoparaffinic Hydrocarbon † (64742-47-8).	None.	Not listed.	Not listed.
Distillates, petroleum, hydrotreated, light † (64742-47-8).	None.	Not listed.	Not listed.
White mineral oil † (8042-47-5).	None.	Not listed.	Not listed.

CWA Section 311: A component of this product is classified as an oil under Section 311 of the Clean Water Act (40 CFR 110) and the Oil Pollution Act of 1990. Discharge or spills that produce a visible sheen on either surface or in waterways/sewers that lead to surface water must be reported to the National Response Center at 800-424-8802.

Chemical Name	SARA 313 Chemicals	SARA Section 302	CERCLA Reportable Quantity (RQ):
Pyrethrin* (8003-34-7).	Not listed.	Not listed.	0.454 kg 1 lb
Synthetic Isoparaffinic Hydrocarbon † (64742-47-8).	Not listed.	Not listed.	None.
Distillates, petroleum, hydrotreated, light † (64742-47-8).	Not listed.	Not listed.	None.
White mineral oil † (8042-47-5).	Not listed.	Not listed.	None.

Product Reportable Quantity (RQ): 0.5 gallons (pyrethrin RQ=1 lb.)

SARA (311, 312):

Immediate Health: Yes.
 Chronic Health: Yes.
 Fire: Yes
 Sudden Pressure: No.
 Reactivity: No.

Chemical Name	IARC - Group 1 (carcinogenic to humans)	IARC - Group 2A (Probably carcinogenic)	IARC - Group 2B (Possibly carcinogenic)	NTP Carcinogen List
Pyrethrin* (8003-34-7).	No.	No.	No.	Not listed.
Synthetic Isoparaffinic Hydrocarbon † (64742-47-8).	No.	No.	No.	Not listed.
Distillates, petroleum, hydrotreated, light † (64742-47-8).	No.	No.	No.	Not listed.
White mineral oil † (8042-47-5).	No.	No.	No.	Not listed.

STATE REGULATIONS:

Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list of all state regulations. Therefore, the user should consult state or local authorities. The state regulations reviewed include: California Proposition 65, California Directors List of Hazardous Substances, Massachusetts Right to Know, Michigan Critical Materials List, New Jersey Right to Know, Pennsylvania Right to Know, Rhode Island Right to Know and the Minnesota Hazardous Substance list. For Washington State Right to Know, see Section 2 for Exposure Limit information. For Louisiana Right to Know refer to SARA information listed under U.S. Regulations above.

Chemical Name	California Proposition 65	California - Directors List of Hazardous Substances	NJ Environmental Hazardous Substances List
Pyrethrin* (8003-34-7).	Not listed.	Listed	Not listed.
Synthetic Isoparaffinic Hydrocarbon † (64742-47-8).	Not listed.	Not listed.	Not listed.
Distillates, petroleum, hydrotreated, light † (64742-47-8).	Not listed.	Not listed.	Not listed.
White mineral oil † (8042-47-5).	Not listed.	Not listed.	Not listed.

Chemical Name	MI - Critical Materials List	MA Right To Know	NJ Right To Know
Pyrethrin* (8003-34-7).	Not listed.	Listed	Listed
Synthetic Isoparaffinic Hydrocarbon † (64742-47-8).	Not listed.	Not listed.	Not listed.
Distillates, petroleum, hydrotreated, light † (64742-47-8).	Not listed.	Not listed.	Not listed.
White mineral oil † (8042-47-5).	Not listed.	Not listed.	Not listed.

Chemical Name	PA Right To Know	RI Right To Know	MN Hazardous Substance
Pyrethrin* (8003-34-7).	Listed	Listed	Listed
Synthetic Isoparaffinic Hydrocarbon † (64742-47-8).	Not listed.	Not listed.	Not listed.
Distillates, petroleum, hydrotreated, light † (64742-47-8).	Not listed.	Not listed.	Not listed.
White mineral oil † (8042-47-5).	Not listed.	Not listed.	Not listed.

California Proposition 65: Not listed.

CHEMICAL INVENTORY INFORMATION:

TSCA Inventory List - Registered pesticide, exempt from TSCA.

Chemical Name	Canada NDSL Inventory List	Canada DSL Inventory List -	EINECS Inventory List -
Pyrethrin* (8003-34-7).	Not listed.	Listed	232-319-8
Synthetic Isoparaffinic Hydrocarbon † (64742-47-8).	Not listed.	Listed	265-149-8
Distillates, petroleum, hydrotreated, light † (64742-47-8).	Not listed.	Not listed.	Not listed.
White mineral oil † (8042-47-5).	Not listed.	Listed	232-455-8

CANADIAN REGULATIONS:

WHMIS Hazard Class: Not determined.

For information regarding potential adverse health effects from exposure to this product, refer to Sections 3 and 11.

16. OTHER INFORMATION

REASON FOR ISSUE: Input MSDS into the new system and minor edits throughout.
EPA REGISTRATION NUMBER: 73049-213
MSDS NO.: ENV-0025
REVISION NUMBER: 1
REVISION DATE: 08/23/2007
SUPERCEDES DATE: 10/05/2001

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

THIS INFORMATION IS PROVIDED IN GOOD FAITH BUT WITHOUT EXPRESS OR IMPLIED WARRANTY. BUYER ASSUMES ALL RESPONSIBILITY FOR SAFETY AND USE NOT IN ACCORDANCE WITH LABEL INSTRUCTIONS.

THE INFORMATION IN THIS MSDS IS BASED ON DATA AVAILABLE TO US AS OF THE REVISION DATE GIVEN HEREIN, AND BELIEVED TO BE CORRECT. CONTACT VALENT BIOSCIENCES TO CONFIRM IF YOU HAVE THE MOST CURRENT MSDS.

JUDGEMENTS AS TO THE SUITABILITY OF INFORMATION HEREIN FOR THE INDIVIDUAL'S OWN USE OR PURPOSES ARE NECESSARILY THE INDIVIDUAL'S OWN RESPONSIBILITY. ALTHOUGH REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF SUCH INFORMATION, VALENT EXTENDS NO WARRANTIES, MAKES NO REPRESENTATIONS, AND ASSUMES NO RESPONSIBILITY AS TO THE ACCURACY OR SUITABILITY OF SUCH INFORMATION FOR APPLICATION TO THE INDIVIDUAL'S PURPOSES OR THE CONSEQUENCES OF ITS USE.

Copywrite 2007 Valent BioSciences Corporation